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Appendix B – Wetland and Stream Data Forms



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# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

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#### VEGETATION (Four Strata) - Use scientific names of plants.

50% of total cover:

50% of total cover:

30 )

30

<u>Tree Stratum</u> (Plot size: 30 )

Sapling/Shrub Stratum (Plot size:

1.

2.

3.

5.

6.

1.

2.

3.

5.

6.

7.

2.

3.

4.

5.

6. 7.

8.

3.

Herb Stratum (Plot size:

Lindernia dubia

50% of total cover:

Woody Vine Stratum (Plot size:

Panicum miliaceum

Ammannia coccinea

Absolute

Dominant

=Total Cover

=Total Cover

Yes

Nο

No

100 =Total Cover

20% of total cover:

=Total Cover

20% of total cover:

UPL

OBL

OBL

Vegetation

Present?

20% of total cover:

75

15

10

50

20% of total cover:

% Cover Species?

Indicator

Status

Sampling Point: **Dominance Test worksheet: Number of Dominant Species** That Are OBL, FACW, or FAC: (A) **Total Number of Dominant** Species Across All Strata: (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B) Prevalence Index worksheet: Total % Cover of: **OBL** species x 1 = **FACW** species x 2 = 0 FAC species x 3 = 0 x 4 = **FACU** species UPL species 75 x 5 = 375 100 400 Column Totals: (A) (B) Prevalence Index = B/A = 4.00 **Hydrophytic Vegetation Indicators:** 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 X Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. **Definitions of Four Vegetation Strata:** Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody Vine - All woody vines greater than 3.28 ft in height. **Hydrophytic** 

| Remarks:    | (If observed, list morphological adaptations below.) |
|-------------|--|
| Heavily dis | sturbed vegetation                                   |

50% of total cover:

**ENG FORM 6116-2, JUL 2018** 

No

Yes X

SOIL Sampling Point: W001-W

|                   |                               | o the dept   |                       |                  |                   | ator or c        | onfirm the absence of    | of indicators.)  |
|-------------------|-------------------------------|--------------|-----------------------|------------------|-------------------|------------------|--------------------------|--|
| Depth<br>(inches) | Matrix Color (moist)          | %            | Color (moist)         | Featur<br>%      | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                  | Remarks  |
| 0-2               | 10YR 5/1                      | 90           | 10YR 5/6              | 10               | С                 | m                | Loamy/Clayey             | Prominent redox concentrations                                 |
|                   |                               |              |                       |                  |                   |                  |                          |  |
| 2-20              | 10YR 5/2                      | 90           | 10YR 5/6              | 10               | <u>C</u>          | <u>M</u>         | Loamy/Clayey             | Prominent redox concentrations                                 |
|                   |                               |              |                       |                  |                   |                  |                          |  |
| -                 |                               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |
| ¹Type: C=Co       | ncentration, D=Deple          |              | :Reduced Matrix M     | <br>IS=Mas       | ked San           | d Grains         | <sup>2</sup> Location: I | PL=Pore Lining, M=Matrix.                                      |
|                   | ndicators: (Applical          |              |                       |                  |                   | a Oranis.        |                          | for Problematic Hydric Soils <sup>3</sup> :                    |
| Histosol (        |                               | oic to aii E | Thin Dark Su          |                  |                   | S. T. U)         |                          | uck (A9) (LRR O)   |
|                   | pedon (A2)                    |              | Barrier Island        | •                |                   |                  |                          | uck (A10) <b>(LRR S)</b>                                       |
| Black His         |                               |              | (MLRA 15              |                  |                   | ,                |                          | Prairie Redox (A16)  |
|                   | Sulfide (A4)                  |              | Loamy Muck            |                  |                   | .RR O)           |                          | ide MLRA 150A)   |
|                   | Layers (A5)                   |              | Loamy Gleye           | •                | ` ' '             | ,                | •                        | ed Vertic (F18)  |
|                   | Bodies (A6) (LRR P,           | T, U)        | X Depleted Ma         |                  |                   |                  |                          | ide MLRA 150A, 150B)   |
| 5 cm Mu           | cky Mineral (A7) <b>(LR</b> I | R P, T, U)   | Redox Dark            | Surface          | (F6)              |                  | Piedmo                   | nt Floodplain Soils (F19) <b>(LRR P, T)</b>                    |
| Muck Pre          | sence (A8) (LRR U)            |              | Depleted Dar          | rk Surfa         | ce (F7)           |                  | Anoma                    | ous Bright Floodplain Soils (F20)                              |
| 1 cm Mud          | ck (A9) (LRR P, T)            |              | Redox Depre           | essions          | (F8)              |                  | (MLR                     | A 153B)  |
| Depleted          | Below Dark Surface            | (A11)        | Marl (F10) <b>(L</b>  | .RR U)           |                   |                  | Red Pa                   | rent Material (F21)  |
| Thick Da          | rk Surface (A12)              |              | Depleted Ocl          | hric (F1         | 1) <b>(MLR</b> /  | A 151)           | Very Sh                  | nallow Dark Surface (F22)                                      |
| Coast Pra         | airie Redox (A16) ( <b>M</b>  | LRA 150A     | .) Iron-Mangan        | ese Ma           | sses (F1          | 2) <b>(LRR (</b> | O, P, T) (outs           | ide MLRA 138, 152A in FL, 154)                                 |
|                   | ucky Mineral (S1) <b>(Li</b>  | RR O, S)     | Umbric Surfa          | -                |                   |                  |                          | Islands Low Chroma Matrix (TS7)                                |
|                   | eyed Matrix (S4)              |              | Delta Ochric          |                  |                   |                  | •                        | A 153B, 153D)  |
| Sandy Re          |                               |              | Reduced Ver           | •                | , ,               |                  | · — `                    | Explain in Remarks)  |
|                   | Matrix (S6)                   |              | Piedmont Flo          |                  |                   |                  |                          |  |
|                   | face (S7) (LRR P, S,          |              | Anomalous E           | -                |                   |                  |                          |  |
|                   | e Below Surface (S8)          | 1            | (MLRA 14              |                  |                   |                  |                          | ors of hydrophytic vegetation and                              |
| (LRR S            | o, I, U)                      |              | Very Shallow (MLRA 13 |                  |                   |                  |                          | and hydrology must be present,<br>as disturbed or problematic. |
| Restrictive L     | aver (if observed):           |              | (WEIGH 100            | 0, 10 <u>2</u> A | , .               | <del></del>      | unics                    | s distarbed of problematic.                                    |
| Type:             | None                          | е            |                       |                  |                   |                  |                          |  |
| Depth (in         | ches):                        | 0            |                       |                  |                   |                  | Hydric Soil Prese        | ent? Yes X No  |
| Remarks:          |                               |              |                       |                  |                   |                  | l                        |  |
| Water perche      | d on clay layer               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |
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|                   |                               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |
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|                   |                               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |
|                   |                               |              |                       |                  |                   |                  |                          |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ri  | pley II  |  | City/County: Ripley/La   | uderdale   | Sampling Date: <u>9/19/2022</u>   |
|--|--|--|--|--|---|
| Applicant/Owner:   | Silicon Ranch Corpora  | ation  | _  | State: TN  | Sampling Point: W001-UPL  |
| Investigator(s): Benj  | jamin Burdette and Jake  | <u>e Irvin</u> S   | ection, Township, Range:   |  |   |
| Landform (hillside, te   | errace, etc.): hillside  | Loca   | al relief (concave, convex,                                      | none): convex  | Slope (%):2-5   |
| Subregion (LRR or M  | /ILRA): LRR P, MLRA  | 134 Lat: <u>35.709270</u>  | Long: 8  | 39.515670  | Datum: NAD83  |
| Soil Map Unit Name:  | Loring silt loam, 5 to 8   | 8 percent slopes, eroded   |  | NWI classificat  | tion: N/A   |
| Are climatic / hydrolc   | ogic conditions on the si  | ite typical for this time of year  | r? Yes X   | No (If no, e   | explain in Remarks.)  |
| Are Vegetation   | , Soil, or Hydr  | ology significantly dist   | turbed? Are "Normal (  | Circumstances" present   | ? Yes X No  |
|  |  | rology naturally probler   |  | plain any answers in Re  | emarks.)  |
|  |  | h site map showing sa  |  | ions, transects, im  | portant features, etc.  |
| Hydrophytic Vegeta   | ation Present?   | Yes No X   | Is the Sampled Area  |  |   |
| Hydric Soil Present  |  | Yes No X   | within a Wetland?  | Yes  | No X  |
| Wetland Hydrology  |  | Yes No X   |  |  |   |
| Remarks:<br>Upland point corres<br>DP2-UP  | sponding to W1. In a cot   | ton field.   |  |  |   |
| HYDROLOGY  |  |  |  |  |   |
| Surface Water ( High Water Tab Saturation (A3) Water Marks (B Sediment Depo Drift Deposits (I Algal Mat or Cru Iron Deposits (E Inundation Visit Water-Stained I | (minimum of one is requ<br>(A1)<br>ble (A2)<br>31)<br>osits (B2)<br>B3)<br>rust (B4)<br>B5)<br>ble on Aerial Imagery (B<br>Leaves (B9) | Presence of Reduced Recent Iron Reduction Thin Muck Surface (C Other (Explain in Rem | or (C1) es on Living Roots (C3) Iron (C4) n in Tilled Soils (C6) | Surface Soil Crac Sparsely Vegetate Drainage Patterns Moss Trim Lines ( Dry-Season Wate Crayfish Burrows | ed Concave Surface (B8) (B10) (B16) (T Table (C2) (C8) on Aerial Imagery (C9) (ion (D2) (D3) (D5) |
| Field Observations Surface Water Pres Water Table Preser Saturation Present? (includes capillary fi  | sent? Yes<br>nt? Yes<br>? Yes  | No X Depth (inches No X Depth (inches  | s): 0  | Hydrology Present?   | Yes No _X_  |
| Describe Recorded  | Data (stream gauge, m  | nonitoring well, aerial photos,  | previous inspections), if a                                      | available:   |   |
| Remarks:   |  |  |  |  |   |

W001-UPL **VEGETATION** (Four Strata) – Use scientific names of plants. Sampling Point: Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: 30 ) % Cover Species? Status **Dominance Test worksheet:** 1. **Number of Dominant Species** 2. That Are OBL, FACW, or FAC: (A) 3. **Total Number of Dominant** Species Across All Strata: 1 (B) 5. Percent of Dominant Species 6. That Are OBL, FACW, or FAC: 0.0% (A/B) Prevalence Index worksheet: Total % Cover of: =Total Cover **OBL** species x 1 = 50% of total cover: 20% of total cover: **FACW** species x 2 = 0 Sapling/Shrub Stratum (Plot size: 30 ) **FAC** species x 3 = 0 x 4 = **FACU** species 1. UPL species 100 x 5 = 2. 500 100 500 3. Column Totals: (A) (B) Prevalence Index = B/A = 5.00 5. **Hydrophytic Vegetation Indicators:** 6. 1 - Rapid Test for Hydrophytic Vegetation 7. 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) =Total Cover 50% of total cover: 20% of total cover: Herb Stratum (Plot size: 30 ) Gossypium hirsutum 100 <sup>1</sup>Indicators of hydric soil and wetland hydrology must be 2. present, unless disturbed or problematic. 3. **Definitions of Four Vegetation Strata:** 4. Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of 5. height. 6. 7. Sapling/Shrub - Woody plants, excluding vines, less 8. than 3 in. DBH and greater than 3.28 ft (1 m) tall. **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 100 =Total Cover Woody Vine - All woody vines greater than 3.28 ft in height. 50% of total cover: 50 20% of total cover: Woody Vine Stratum (Plot size: 30 ) 2. 3. 4. **Hydrophytic** =Total Cover Vegetation 50% of total cover: 20% of total cover: Present? No X Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: W001-UPL

|                         | ription: (Describe t                | o the depti |                          |           |                   | ator or co       | onfirm the a            | absence o  | of indica  | itors.)       |                  |                  |
|-------------------------|-------------------------------------|-------------|--------------------------|-----------|-------------------|------------------|-------------------------|------------|------------|---------------|------------------|------------------|
| Depth                   | Matrix                              |             |                          | Featur    |                   | . 2              | <b>-</b> .              |            |            | _             |                  |                  |
| (inches)                | Color (moist)                       | <u>%</u>    | Color (moist)            | <u>%</u>  | Type <sup>1</sup> | Loc <sup>2</sup> | Textu                   | ure        |            | Rem           | narks            |                  |
| 0-20                    | 10YR 6/4                            | 100         |                          |           |                   |                  | Loamy/Clayey silty loam |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             | _                        |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            | -          |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
| <sup>1</sup> Type: C=Co | oncentration, D=Depl                | etion. RM=I | Reduced Matrix. M        | IS=Mas    | ked San           | d Grains.        |                         | ocation: F | PL=Pore    | Lining, M=I   | Matrix.          |                  |
| • •                     | ndicators: (Applica                 |             |                          |           |                   | _                |                         |            |            | lematic Hy    |                  | s <sup>3</sup> : |
| Histosol                |                                     |             | Thin Dark Su             |           |                   | S, T, U)         |                         |            |            | (LRR O)       |                  |                  |
|                         | ipedon (A2)                         |             | Barrier Island           |           |                   |                  |                         |            |            | ) (LRR S)     |                  |                  |
| Black His               | stic (A3)                           |             | (MLRA 15                 | 3B, 153   | (D)               | •                | _                       |            |            | edox (A16)    |                  |                  |
| Hydroge                 | n Sulfide (A4)                      |             | Loamy Muck               | y Miner   | al (F1) <b>(L</b> | RR O)            |                         | outs (     | ide MLR    | RA 150A)      |                  |                  |
| Stratified              | Layers (A5)                         |             | Loamy Gleye              | d Matri   | x (F2)            |                  |                         | Reduce     | d Vertic   | (F18)         |                  |                  |
| Organic                 | Bodies (A6) (LRR P,                 | T, U)       | Depleted Ma              | trix (F3) | )                 |                  |                         | outs (     | ide MLR    | A 150A, 15    | 60B)             |                  |
| 5 cm Mu                 | cky Mineral (A7) (LR                | R P, T, U)  | Redox Dark               | Surface   | (F6)              |                  |                         | Piedmo     | nt Flood   | plain Soils ( | (F19) <b>(LR</b> | R P, T)          |
| Muck Pre                | esence (A8) (LRR U)                 |             | Depleted Dar             | k Surfa   | ce (F7)           |                  |                         | Anomal     | ous Brig   | ht Floodpla   | in Soils (F      | 20)              |
| 1 cm Mu                 | ck (A9) (LRR P, T)                  |             | Redox Depre              | essions   | (F8)              |                  |                         | (MLR       | A 153B)    |               |                  |                  |
|                         | Below Dark Surface                  | (A11)       | Marl (F10) <b>(L</b>     |           |                   |                  | _                       |            |            | erial (F21)   |                  |                  |
|                         | rk Surface (A12)                    |             | Depleted Ocl             |           |                   |                  | _                       | _ ′        |            | ark Surface   | ` '              |                  |
|                         | airie Redox (A16) ( <b>M</b>        | •           |                          |           |                   |                  | O, P, T)                | •          |            | A 138, 152    |                  | •                |
|                         | ucky Mineral (S1) (L                | RR O, S)    | Umbric Surfa             |           |                   |                  |                         |            |            | Low Chroma    | a Matrix (       | rS7)             |
|                         | leyed Matrix (S4)                   |             | Delta Ochric             |           |                   |                  | 50D\                    | •          | A 153B,    | ,             |                  |                  |
|                         | edox (S5)                           |             | Reduced Ver              | •         | , ,               |                  | · —                     | Other (i   | =xpiain ii | n Remarks)    |                  |                  |
|                         | Matrix (S6)<br>face (S7) (LRR P, S, | T II)       | Piedmont Flo Anomalous E |           |                   |                  |                         |            |            |               |                  |                  |
|                         | e Below Surface (S8)                |             | (MLRA 14                 | -         |                   | •                | 10)                     | 3Indicat   | ore of hy  | drophytic v   | enetation        | and              |
|                         | S, T, U)                            | ,           | Very Shallow             |           |                   | •                |                         |            | -          | ology must l  | -                |                  |
| (=::::                  | 5, ., 5,                            |             | (MLRA 13                 |           | •                 | ,                |                         |            | -          | ped or probl  |                  | •,               |
| Restrictive L           | _ayer (if observed):                |             | (                        | -,        | ,                 | ,                |                         |            |            |               |                  |                  |
| Type:                   | Non                                 | e           |                          |           |                   |                  |                         |            |            |               |                  |                  |
| Depth (ir               |                                     | 0           |                          |           |                   |                  | Hydric S                | Soil Prese | nt?        | Yes           | No               | X                |
| Remarks:                |                                     |             |                          |           |                   |                  | ,                       |            |            |               |                  |                  |
| Remarks.                |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |
|                         |                                     |             |                          |           |                   |                  |                         |            |            |               |                  |                  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                           |                                    | City/County: Ripley/Lau               | uderdale                | Sampling Date: 9/19/22    |
|--|------------------------------------|---------------------------------------|-------------------------|---------------------------|
| Applicant/Owner: Silicon Ranch Corpora               | ation                              |                                       | State: TN               | Sampling Point: W002-W    |
| Investigator(s): Benjamin Burdette and Jake          |                                    | tion, Township, Range:                |                         |                           |
| Landform (hillside, terrace, etc.): toe of slo       |                                    | relief (concave, convex, ı            | none): concave          | Slope (%): 0-2            |
| Subregion (LRR or MLRA): LRR P, MLRA 1               | •                                  | ,                                     | 9.515838                | Datum: NAD83              |
| Soil Map Unit Name: Loring silt loam, 6 to 1         |                                    |                                       | NWI classificat         |                           |
| Are climatic / hydrologic conditions on the sit      | e typical for this time of year?   | Yes X                                 | No (If no, e            | explain in Remarks.)      |
| Are Vegetation X , Soil, or Hydro                    |                                    |                                       | ircumstances" present?  | •                         |
| Are Vegetation , Soil , or Hydro                     | ·                                  |                                       | olain any answers in Re |                           |
| SUMMARY OF FINDINGS – Attach                         | <u> </u>                           |                                       | -                       | •                         |
| Hydrophytic Vocatation Present?                      | Yes X No                           | Is the Sampled Area                   |                         |                           |
| Hydrophytic Vegetation Present? Hydric Soil Present? |                                    | Is the Sampled Area within a Wetland? | Yes X                   | No                        |
| Wetland Hydrology Present?                           | Yes X No                           | Within a Froncisco                    | 100                     | <u> </u>                  |
| Remarks:   |                                    |                                       |                         |                           |
| PEM wetland  |                                    |                                       |                         |                           |
| DP25-W2  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
| HYDROLOGY  |                                    |                                       |                         |                           |
| Wetland Hydrology Indicators:                        |                                    |                                       |                         | (minimum of two required) |
| Primary Indicators (minimum of one is requi          |                                    |                                       | Surface Soil Crack      |                           |
| X Surface Water (A1)                                 | Aquatic Fauna (B13)                |                                       |                         | ed Concave Surface (B8)   |
| High Water Table (A2)                                | Marl Deposits (B15) (LRI           |                                       | X Drainage Patterns     |                           |
| Saturation (A3)                                      | Hydrogen Sulfide Odor (            | •                                     | Moss Trim Lines (       |                           |
| Water Marks (B1)                                     | Oxidized Rhizospheres of           |                                       | Dry-Season Water        |                           |
| Sediment Deposits (B2)                               | Presence of Reduced Iro            |                                       | Crayfish Burrows        |                           |
| Drift Deposits (B3)                                  | Recent Iron Reduction in           | Tilled Soils (C6)                     |                         | on Aerial Imagery (C9)    |
| X Algal Mat or Crust (B4)                            | Thin Muck Surface (C7)             |                                       | Geomorphic Posit        | , ,                       |
| Iron Deposits (B5)                                   | Other (Explain in Remark           | ks)                                   | Shallow Aquitard (      |                           |
| Inundation Visible on Aerial Imagery (B              | 7)                                 |                                       | FAC-Neutral Test        |                           |
| Water-Stained Leaves (B9)                            |                                    |                                       | Sphagnum Moss (         | (D8) <b>(LRR T, U)</b>    |
| Field Observations:                                  | 5 4 C 1 X                          |                                       |                         |                           |
| Surface Water Present? Yes X                         | No Depth (inches):                 |                                       |                         |                           |
| Water Table Present? Yes                             | No X Depth (inches):               |                                       |                         | V N                       |
| Saturation Present? Yes                              | No X Depth (inches):               | 0 Wetland H                           | Hydrology Present?      | Yes X No                  |
| (includes capillary fringe)                          | **                                 | : ' ''                                | ** * *                  |                           |
| Describe Recorded Data (stream gauge, m              | onitoring well, aerial photos, pre | evious inspections), it av            | /ailable:               |                           |
|  |                                    |                                       |                         |                           |
| Remarks:   |                                    |                                       |                         |                           |
| Nemarks.   |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |
|  |                                    |                                       |                         |                           |

|                                     | Absolute      | of plants.      | Indicator |   |
|-------------------------------------|---------------|-----------------|-----------|---|
| ee Stratum (Plot size:30)           | % Cover       | Species?        | Status    | Dominance Test worksheet:   |
|                                     |               |                 |           | Number of Dominant Species  |
|                                     |               |                 |           | That Are OBL, FACW, or FAC: 0 (A)   |
|                                     |               | <u> </u>        |           | Total Number of Dominant  |
|                                     |               | <u> </u>        |           | Species Across All Strata: 1 (B)  |
|                                     |               |                 |           | Percent of Dominant Species   |
|                                     |               | <u> </u>        |           | That Are OBL, FACW, or FAC: 0.0% (A/  |
|                                     |               | <u> </u>        |           | Prevalence Index worksheet:   |
|                                     |               | <u> </u>        |           | Total % Cover of: Multiply by:  |
|                                     |               | =Total Cover    |           | OBL species 25 x 1 = 25   |
| 50% of total cover:                 | 20%           | of total cover: |           | FACW species 0 x 2 = 0  |
| apling/Shrub Stratum (Plot size: 30 | )             |                 |           | FAC species 0 x 3 = 0   |
|                                     |               |                 |           | FACU species 0 x 4 = 0  |
|                                     |               |                 |           | UPL species 75 x 5 = 375  |
|                                     |               |                 |           | Column Totals: 100 (A) 400 (  |
|                                     |               |                 |           | Prevalence Index = B/A = 4.00   |
|                                     |               |                 |           | Hydrophytic Vegetation Indicators:  |
|                                     |               |                 |           | 1 - Rapid Test for Hydrophytic Vegetation   |
|                                     |               |                 |           | 2 - Dominance Test is >50%  |
|                                     |               |                 |           | 3 - Prevalence Index is ≤3.0 <sup>1</sup>   |
|                                     |               | =Total Cover    |           | X Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)   |
| 50% of total cover:                 |               | of total cover: |           |   |
| rb Stratum (Plot size: 30 )         |               |                 |           |   |
| Panicum miliaceum                   | 75            | Yes             | UPL       | 1   |
| Lindernia dubia                     | 15            | No              | OBL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology musi present, unless disturbed or problematic. |
| Ammannia coccinea                   | 10            | No              | OBL       | Definitions of Four Vegetation Strata:  |
| Anninamia coccinca                  |               | 140             | OBL       |   |
|                                     |               |                 |           | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) more in diameter at breast height (DBH), regardless    |
|                                     |               |                 |           | height.   |
|                                     |               |                 |           |   |
|                                     |               |                 |           | Sapling/Shrub – Woody plants, excluding vines, les  |
|                                     |               |                 |           | than 3 in. DBH and greater than 3.28 ft (1 m) tall.   |
|                                     |               |                 |           |   |
|                                     |               |                 |           | Herb – All herbaceous (non-woody) plants, regardle  |
| ·                                   |               |                 |           | of size, and woody plants less than 3.28 ft tall.   |
| ·                                   | 400           | T-4-1 0         |           | Was de Was Alleman de since and the whole of the  |
| 500/ 51 1 1                         |               | =Total Cover    | 00        | <b>Woody Vine</b> – All woody vines greater than 3.28 ft i height.  |
| <del></del>                         | <u>50</u> 20% | of total cover: | 20        | noight.   |
| Woody Vine Stratum (Plot size: 30 ) |               |                 |           |   |
|                                     |               |                 |           |   |
|                                     |               |                 |           |   |
|                                     |               |                 |           |   |
|                                     |               |                 |           |   |
|                                     |               |                 |           | Hydrophytic   |
|                                     |               | =Total Cover    |           | Vegetation  |
|                                     |               | of total cover: |           | Present? Yes X No   |

SOIL Sampling Point: W002-W

|                          | ription: (Describe to                                      | o the dept   |                            |            |                   | ator or c        | onfirm the absence  | of indicators.)                              |  |  |  |
|--------------------------|--|--------------|----------------------------|------------|-------------------|------------------|---|--|--|--|--|
| Depth<br>(inches)        | Matrix Calar (maint)                                       | 0/           |                            | ∢ Featur   |                   | 1002             | Toytura   | Domorko                                      |  |  |  |
| (inches)                 | Color (moist)  | <u>%</u> _   | Color (moist)              | <u>%</u>   | Type <sup>1</sup> | Loc <sup>2</sup> | Texture   | Remarks                                      |  |  |  |
| 0-2                      | 10YR 5/1   | 90           | 10YR 5/6                   | 10         | <u>C</u>          | m                | Loamy/Clayey  | Prominent redox concentrations               |  |  |  |
| 2-20                     | 10YR 5/2   | 90           | 10YR 5/6                   | 10         |                   | M                | Loamy/Clayey  | Prominent redox concentrations               |  |  |  |
| ¹Type: C=Co              | oncentration, D=Deple                                      |              | Reduced Matrix, N          | <br>IS=Mas | ked Sand          | d Grains.        | <sup>2</sup> Location:                                    | PL=Pore Lining, M=Matrix.                    |  |  |  |
| Hydric Soil I            | ndicators: (Applical                                       | ble to all L | RRs, unless othe           | rwise r    | oted.)            |                  | Indicators  | for Problematic Hydric Soils <sup>3</sup> :  |  |  |  |
| Histosol                 | (A1)   |              | Thin Dark Su               | ırface (S  | 9) <b>(LRR</b>    | S, T, U)         | 1 cm M  | luck (A9) (LRR O)                            |  |  |  |
| Histic Ep                | ipedon (A2)  |              | Barrier Island             | ds 1 cm    | Muck (S           | 12)              | 2 cm N  | luck (A10) <b>(LRR S)</b>                    |  |  |  |
| Black His                | stic (A3)  |              | (MLRA 15                   | 3B, 153    | D)                |                  | Coast   | Prairie Redox (A16)                          |  |  |  |
| Hydrogei                 | n Sulfide (A4)   |              | Loamy Muck                 | y Miner    | al (F1) <b>(L</b> | .RR O)           | (outs   | side MLRA 150A)                              |  |  |  |
| Stratified               | Layers (A5)  |              | Loamy Gleye                | ed Matri   | x (F2)            |                  | Reduc   | ed Vertic (F18)                              |  |  |  |
| Organic I                | Bodies (A6) (LRR P,  | T, U)        | X Depleted Ma              | trix (F3)  | )                 |                  | •   | side MLRA 150A, 150B)                        |  |  |  |
|                          | cky Mineral (A7) <b>(LR</b> I                              |              | Redox Dark                 |            | ` '               |                  |   | ont Floodplain Soils (F19) <b>(LRR P, T)</b> |  |  |  |
|                          | esence (A8) (LRR U)  |              | Depleted Dai               |            | ` '               |                  |   | alous Bright Floodplain Soils (F20)          |  |  |  |
|                          | ck (A9) (LRR P, T)   | (8.4.4)      | Redox Depre                |            | (F8)              |                  | •   | RA 153B)                                     |  |  |  |
|                          | Below Dark Surface   | (A11)        | Marl (F10) (L              |            | 4) (MI D          | . 454)           |   | arent Material (F21)                         |  |  |  |
|                          | rk Surface (A12)   | I DA 450A    | Depleted Ocl               |            |                   |                  |   | hallow Dark Surface (F22)                    |  |  |  |
|                          | airie Redox (A16) ( <b>M</b> lucky Mineral (S1) <b>(Li</b> |              | · <u> </u>                 |            |                   |                  |   | side MLRA 138, 152A in FL, 154)              |  |  |  |
|                          | leyed Matrix (S4)  | XX O, 3)     | Umbric Surfa  Delta Ochric | -          |                   |                  | Barrier Islands Low Chroma Matrix (TS7) (MLRA 153B, 153D) |  |  |  |  |
|                          | edox (S5)  |              | Reduced Ver                |            |                   |                  | •   | Explain in Remarks)                          |  |  |  |
|                          | Matrix (S6)  |              | Piedmont Flo               | •          | , ,               |                  | · —   | Explain in Remarks)                          |  |  |  |
|                          | face (S7) <b>(LRR P, S,</b>                                | T. U)        | Anomalous E                |            |                   |                  |   |  |  |  |  |
|                          | e Below Surface (S8)                                       |              | (MLRA 14                   | -          |                   |                  |   | tors of hydrophytic vegetation and           |  |  |  |
|                          | S, T, U)   |              | Very Shallow               |            |                   |                  |   | and hydrology must be present,               |  |  |  |
| •                        | ,  |              | (MLRA 13                   |            | ,                 | ,                |   | ss disturbed or problematic.                 |  |  |  |
| Restrictive L            | _ayer (if observed):                                       |              | <u> </u>                   |            |                   |                  |   | ·  |  |  |  |
| Type:                    | None   | е            |                            |            |                   |                  |   |  |  |  |  |
| Depth (in                | nches):  | 0            |                            |            |                   |                  | Hydric Soil Pres  | ent? Yes X No                                |  |  |  |
| Remarks:<br>Water perche | ed on clay layer   |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |
|                          |  |              |                            |            |                   |                  |   |  |  |  |  |

## WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II  |                                       | City/County: Ripley/Lau    | uderdale                | Sampling Date: <u>9/19/2022</u> |
|---|---------------------------------------|----------------------------|-------------------------|---------------------------------|
| Applicant/Owner: Silicon Ranch Corporat                                 | tion                                  |                            | State: TN               | Sampling Point: W002-UPL        |
| Investigator(s): Benjamin Burdette and Jake I                           | Irvin Sec                             | tion, Township, Range:     |                         |                                 |
| Landform (hillside, terrace, etc.): hillside                            |                                       | relief (concave, convex,   | none): convex           | Slope (%): 2-5                  |
| Subregion (LRR or MLRA): LRR P, MLRA 13                                 |                                       | •                          | 9.515670                | Datum: NAD83                    |
| Soil Map Unit Name: Loring silt loam, 5 to 8 p                          |                                       |                            | NWI classificat         |                                 |
| Are climatic / hydrologic conditions on the site                        |                                       | Yes X                      | No (If no, e            | explain in Remarks.)            |
| Are Vegetation, Soil, or Hydrole  | •                                     |                            | Circumstances" present  |                                 |
| Are Vegetation, Soil, or Hydrole  |                                       |                            | plain any answers in Re |                                 |
| SUMMARY OF FINDINGS – Attach  |                                       |                            | -                       | •                               |
| Hydrophytic Vegetation Present?   | Yes No X                              | Is the Sampled Area        |                         |                                 |
|   |                                       | within a Wetland?          | Yes                     | No X                            |
|   | Yes No X                              |                            |                         |                                 |
| Upland point corresponding to W2. In a cotto DP26-UP                    | n field.                              |                            |                         |                                 |
| HYDROLOGY   |                                       |                            |                         |                                 |
| Wetland Hydrology Indicators:   |                                       | _                          |                         | (minimum of two required)       |
| Primary Indicators (minimum of one is require                           |                                       |                            | Surface Soil Crac       |                                 |
| Surface Water (A1)  | Aquatic Fauna (B13)                   |                            |                         | ed Concave Surface (B8)         |
| High Water Table (A2)   | Marl Deposits (B15) (LR               |                            | Drainage Patterns       |                                 |
| Saturation (A3)   | Hydrogen Sulfide Odor (               | •                          | Moss Trim Lines (       |                                 |
| Water Marks (B1)  | Oxidized Rhizospheres of              |                            | Dry-Season Wate         | · ·                             |
| Sediment Deposits (B2)  | Presence of Reduced Iro               | ,                          | Crayfish Burrows        |                                 |
| Drift Deposits (B3)   | Recent Iron Reduction in              | 1 Tilled Soils (C6)        |                         | on Aerial Imagery (C9)          |
| Algal Mat or Crust (B4)   | Thin Muck Surface (C7)                |                            | Geomorphic Posit        |                                 |
| Iron Deposits (B5)  | Other (Explain in Remark              | ks)                        | Shallow Aquitard        |                                 |
| Inundation Visible on Aerial Imagery (B7                                | )                                     |                            | FAC-Neutral Test        |                                 |
| Water-Stained Leaves (B9)   |                                       |                            | Sphagnum Moss           | (D8) (LRR T, U)                 |
| Field Observations:   | · · · · · · · · · · · · · · · · · · · |                            |                         |                                 |
| Surface Water Present? Yes  | No X Depth (inches):                  |                            |                         |                                 |
| Water Table Present? Yes  | No X Depth (inches):                  |                            | U Seele ee Decembo      | V No V                          |
| Saturation Present? Yes   | No X Depth (inches):                  | 0 Wetland I                | Hydrology Present?      | Yes No _X                       |
| (includes capillary fringe)  Describe Recorded Data (stream gauge, more | nitaring wall carial photos pr        | reviews inspections), if a | veilable:               | _                               |
| Describe Necorded Data (Siteam gauge, moi                               | mitoring well, aerial photos, pr      | evious irispections), ii a | vallable.               |                                 |
| Remarks:  |                                       |                            |                         |                                 |
| Nellians.   |                                       |                            |                         |                                 |
|   |                                       |                            |                         |                                 |
|   |                                       |                            |                         |                                 |
|   |                                       |                            |                         |                                 |
|   |                                       |                            |                         |                                 |
|   |                                       |                            |                         |                                 |
|   |                                       |                            |                         |                                 |
|   |                                       |                            |                         |                                 |
|   |                                       |                            |                         |                                 |
|   |                                       |                            |                         |                                 |

| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )    |       | Species?  =Total Cover of total cover: | Status | Dominance Test worksheet:           Number of Dominant Species           That Are OBL, FACW, or FAC:         0         (A)           Total Number of Dominant Species Across All Strata:         1         (B)           Percent of Dominant Species         1         (A/B)           Prevalence Index worksheet:         0.0%         (A/B)           Prevalence Index worksheet:         Multiply by:           OBL species         0         x 1 =         0           FACW species         0         x 2 =         0           FAC species         0         x 3 =         0           FACU species         0         x 4 =         0           UPL species         100         x 5 =         500           Column Totals:         100         (A)         500         (B)           Prevalence Index = B/A =         5.00         (B) |
|--|-------|--|--------|---|
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )    |       |  |        | That Are OBL, FACW, or FAC:         0         (A)           Total Number of Dominant Species Across All Strata:         1         (B)           Percent of Dominant Species That Are OBL, FACW, or FAC:         0.0%         (A/B           Prevalence Index worksheet:           Total % Cover of:         Multiply by:           OBL species         0         x 1 =         0           FACW species         0         x 2 =         0           FAC species         0         x 3 =         0           FACU species         0         x 4 =         0           UPL species         100         x 5 =         500           Column Totals:         100         (A)         500         (B           Prevalence Index         = B/A =         5.00  |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )    |       |  |        | Total Number of Dominant         1         (B)           Percent of Dominant Species         1         (A/B)           That Are OBL, FACW, or FAC:         0.0%         (A/B)           Prevalence Index worksheet:           Total % Cover of:         Multiply by:           OBL species         0         x 1 =         0           FACW species         0         x 2 =         0           FAC species         0         x 3 =         0           FACU species         0         x 4 =         0           UPL species         100         x 5 =         500           Column Totals:         100         (A)         500         (B)           Prevalence Index         = B/A =         5.00   |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )    |       |  |        | Species Across All Strata:         1         (B)           Percent of Dominant Species         That Are OBL, FACW, or FAC:         0.0%         (A/B           Prevalence Index worksheet:           Total % Cover of:         Multiply by:           OBL species         0         x 1 = 0           FACW species         0         x 2 = 0           FAC species         0         x 3 = 0           FACU species         0         x 4 = 0           UPL species         100         x 5 = 500           Column Totals:         100         (A)         500         (B           Prevalence Index         = B/A =         5.00   |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )    |       |  |        | Percent of Dominant Species           That Are OBL, FACW, or FAC:         0.0%         (A/B)           Prevalence Index worksheet:           Total % Cover of:         Multiply by:           OBL species         0         x 1 = 0           FACW species         0         x 2 = 0           FAC species         0         x 3 = 0           FACU species         0         x 4 = 0           UPL species         100         x 5 = 500           Column Totals:         100         (A)         500         (B           Prevalence Index         = B/A =         5.00   |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )  . |       |  |        | That Are OBL, FACW, or FAC: 0.0% (A/B           Prevalence Index worksheet:           Total % Cover of:         Multiply by:           OBL species         0 x1 = 0           FACW species         0 x2 = 0           FAC species         0 x3 = 0           FACU species         0 x4 = 0           UPL species         100 x5 = 500           Column Totals:         100 (A) 500 (B           Prevalence Index = B/A = 5.00         5.00  |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )    |       |  |        | That Are OBL, FACW, or FAC: 0.0% (A/B           Prevalence Index worksheet:           Total % Cover of:         Multiply by:           OBL species         0 x1 = 0           FACW species         0 x2 = 0           FAC species         0 x3 = 0           FACU species         0 x4 = 0           UPL species         100 x5 = 500           Column Totals:         100 (A) 500 (B           Prevalence Index = B/A = 5.00         5.00  |
| Sapling/Shrub Stratum (Plot size: 30 )                         |       |  |        | Total % Cover of:         Multiply by:           OBL species         0         x 1 =         0           FACW species         0         x 2 =         0           FAC species         0         x 3 =         0           FACU species         0         x 4 =         0           UPL species         100         x 5 =         500           Column Totals:         100         (A)         500         (B           Prevalence Index = B/A =         5.00         (B   |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )    |       |  |        | OBL species         0         x 1 =         0           FACW species         0         x 2 =         0           FAC species         0         x 3 =         0           FACU species         0         x 4 =         0           UPL species         100         x 5 =         500           Column Totals:         100         (A)         500         (B           Prevalence Index = B/A =         5.00         (B  |
| Sapling/Shrub Stratum (Plot size: 30 )                         |       |  |        | FACW species       0       x 2 =       0         FAC species       0       x 3 =       0         FACU species       0       x 4 =       0         UPL species       100       x 5 =       500         Column Totals:       100       (A)       500       (B)         Prevalence Index       = B/A =       5.00  |
| Sapling/Shrub Stratum (Plot size: 30 )                         | 20%   | of total cover:                        |        | FAC species       0       x 3 =       0         FACU species       0       x 4 =       0         UPL species       100       x 5 =       500         Column Totals:       100       (A)       500       (B)         Prevalence Index = B/A =       5.00   |
| 3  |       |  |        | FAC species       0       x 3 =       0         FACU species       0       x 4 =       0         UPL species       100       x 5 =       500         Column Totals:       100       (A)       500       (B)         Prevalence Index = B/A =       5.00   |
| 3  |       |  |        | FACU species 0 x 4 = 0  UPL species 100 x 5 = 500  Column Totals: 100 (A) 500 (B  Prevalence Index = B/A = 5.00   |
| 2.<br>3.<br>4.<br>5.   |       |  |        | UPL species         100         x 5 =         500           Column Totals:         100         (A)         500         (B)           Prevalence Index = B/A =         5.00  |
| 3.   |       |  |        | Column Totals:         100         (A)         500         (B)           Prevalence Index = B/A =         5.00  |
| i.<br>5.<br>5.   |       |  |        | Prevalence Index = B/A = 5.00   |
| i  |       |  |        |   |
| i  |       |  |        | Lidranhigia Vagatatian inggasa  |
| ,  |       |  |        | Hydrophytic Vegetation Indicators:  |
|  |       |  |        | 1 - Rapid Test for Hydrophytic Vegetation   |
| 3  |       |  |        | 2 - Dominance Test is >50%  |
|  |       |  |        | 3 - Prevalence Index is ≤3.0 <sup>1</sup>   |
| <u>-</u>   | =     | =Total Cover                           |        | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)   |
| 50% of total cover:  | 20%   | of total cover:                        |        |   |
| Herb Stratum (Plot size: 30 )                                  |       |  |        |   |
| 1. Gossypium hirsutum  | 100   | Yes                                    | UPL    | <sup>1</sup> Indicators of hydric soil and wetland hydrology must   |
| 2.   |       |  |        | present, unless disturbed or problematic.   |
| 3.   |       |  |        | Definitions of Four Vegetation Strata:  |
| 4.   |       |  |        | _   |
| 5.   |       |  |        | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) more in diameter at breast height (DBH), regardless of   |
|  |       |  |        | height.   |
| S  |       |  |        | 1.5.5   |
| 7  |       |  |        | Sapling/Shrub – Woody plants, excluding vines, less   |
| 3  |       |  |        | than 3 in. DBH and greater than 3.28 ft (1 m) tall.   |
| )  |       |  |        | -   |
| 10   |       |  |        | Hart All harbaccous (non woody) plants regardles  |
| 11   |       |  |        | <b>Herb</b> – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall.  |
| 12.  |       |  |        | or size, and mood, plante isse men in   |
|  | 100 = | =Total Cover                           |        | Woody Vine – All woody vines greater than 3.28 ft in  |
| 50% of total cover: 50   |       | of total cover:                        | 20     | height.   |
| Woody Vine Stratum (Plot size: 30 )                            |       | Or total ==                            |        | -   |
| · · · · · · · · · · · · · · · · · · ·                          |       |  |        |   |
| l  |       |  |        |   |
| 2  |       |  |        |   |
| 3.   |       |  |        |   |
| 4  |       |  |        |   |
| 5  |       |  |        | Hydrophytic   |
| _  | =     | =Total Cover                           |        | Vegetation  |
| 50% of total cover:  | 20%   | of total cover:                        |        | Present? Yes No X   |
| Remarks: (If observed, list morphological adaptations          |       |  |        | <u> </u>  |

SOIL Sampling Point: W002-UPL

|                   | ription: (Describe t         | o the dept        |                       |               |                   | itor or co       | onfirm the absence      | of indica  | ators.)                       |                        |
|-------------------|------------------------------|-------------------|-----------------------|---------------|-------------------|------------------|-------------------------|------------|-------------------------------|------------------------|
| Depth (in a land) | Matrix                       |                   |                       | x Featur      |                   | 1 2              | T                       |            | D                             |                        |
| (inches)          | Color (moist)                |                   | Color (moist)         | <u>%</u>      | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                 | Remarks    |                               | arks                   |
| 0-20              | 10YR 6/4                     | 100               |                       |               |                   |                  | Loamy/Clayey            | oam        |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
| -                 |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               | _                      |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
| -                 |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
| 1Type: C=Co       | ncentration, D=Deple         | etion RM=I        | Reduced Matrix N      | <br>IS=Mas    | ked San           |                  | <sup>2</sup> l ocation: | PI =Pore   | Lining, M=N                   | Matrix                 |
|                   | ndicators: (Applical         |                   |                       |               |                   | oranio.          |                         |            |                               | dric Soils³:           |
| Histosol (        |                              | 5.0 to a <b>=</b> | Thin Dark Su          |               |                   | S. T. U)         |                         |            | (LRR O)                       |                        |
|                   | ipedon (A2)                  |                   | Barrier Island        |               |                   |                  |                         |            | (LRR S)                       |                        |
| Black His         |                              |                   | (MLRA 15              |               |                   | ,                |                         |            | edox (A16)                    |                        |
|                   | n Sulfide (A4)               |                   | Loamy Muck            |               |                   | RR O)            |                         |            | RA 150A)                      |                        |
|                   | Layers (A5)                  |                   | Loamy Gleye           | ,<br>ed Matri | x (F2)            | ,                | •                       | ed Vertic  | •                             |                        |
|                   | Bodies (A6) (LRR P,          | T, U)             | Depleted Ma           | trix (F3)     | )                 |                  |                         |            | RA 150A, 15                   | 0B)                    |
| 5 cm Mu           | cky Mineral (A7) <b>(LR</b>  | R P, T, U)        | Redox Dark            | Surface       | (F6)              |                  | Piedm                   | ont Flood  | plain Soils (                 | F19) <b>(LRR P, T)</b> |
| Muck Pre          | esence (A8) (LRR U)          |                   | Depleted Da           | rk Surfa      | ce (F7)           |                  | Anoma                   | alous Brig | ht Floodplai                  | n Soils (F20)          |
| 1 cm Mud          | ck (A9) (LRR P, T)           |                   | Redox Depre           | essions       | (F8)              |                  | (MLF                    | RA 153B)   | )                             |                        |
| Depleted          | Below Dark Surface           | (A11)             | Marl (F10) <b>(L</b>  | .RR U)        |                   |                  | Red P                   | arent Mat  | erial (F21)                   |                        |
| Thick Da          | rk Surface (A12)             |                   | Depleted Oc           | hric (F1      | 1) <b>(MLR</b> A  | 151)             | Very S                  | hallow D   | ark Surface                   | (F22)                  |
| Coast Pra         | airie Redox (A16) ( <b>M</b> | LRA 150A)         | Iron-Mangan           | ese Ma        | sses (F12         | 2) <b>(LRR (</b> | D, P, T) (out           | side MLF   | RA 138, 152                   | A in FL, 154)          |
|                   | ucky Mineral (S1) <b>(LI</b> | RR O, S)          | Umbric Surfa          | -             |                   |                  |                         |            |                               | Matrix (TS7)           |
|                   | eyed Matrix (S4)             |                   | Delta Ochric          |               |                   |                  |                         | RA 153B,   |                               |                        |
|                   | edox (S5)                    |                   | Reduced Ve            | •             | , ,               |                  |                         | (Explain i | n Remarks)                    |                        |
|                   | Matrix (S6)                  |                   | Piedmont Flo          |               |                   |                  |                         |            |                               |                        |
|                   | face (S7) <b>(LRR P, S,</b>  |                   | Anomalous E           | -             |                   |                  |                         |            |                               |                        |
|                   | e Below Surface (S8)         |                   | (MLRA 14              |               |                   |                  |                         | •          |                               | egetation and          |
| (LRR S            | s, I, U)                     |                   | Very Shallow (MLRA 13 |               |                   |                  |                         | -          | ology must b<br>oed or proble | •                      |
| <b>5</b>          |                              |                   | (WLKA 13              | 0, 15ZA       | III FL, I         | <del>34)</del>   | unie                    | รร นารเนา  | bed of proble                 | anauc.                 |
|                   | ayer (if observed):          | _                 |                       |               |                   |                  |                         |            |                               |                        |
| Type:             | None                         |                   |                       |               |                   |                  |                         |            |                               |                        |
| Depth (in         | ches):                       | 0                 |                       |               |                   |                  | Hydric Soil Pres        | ent?       | Yes                           | No <u>X</u>            |
| Remarks:          |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |
|                   |                              |                   |                       |               |                   |                  |                         |            |                               |                        |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II   |  | City/County: Ripley/Lau     | ıderdale                            | Sampling Date: 9/20/22    |
|--|--|-----------------------------|-------------------------------------|---------------------------|
| Applicant/Owner: Silicon Ranch Corporat                            | tion   | <u> </u>                    | State: TN                           | Sampling Point: W003-W    |
| Investigator(s): Benjamin Burdette and Jake I                      | Irven Sec                                      | ction, Township, Range:     |                                     |                           |
| Landform (hillside, terrace, etc.): terrace                        | _  | relief (concave, convex, r  | none): concave                      | Slope (%): 0-7            |
| Subregion (LRR or MLRA): LRR P, MLRA 13                            |  | •                           | 9.517745                            | Datum: NAD83              |
| Soil Map Unit Name: Loring silt loam, 2 to 5 p                     |  |                             | NWI classificat                     |                           |
| Are climatic / hydrologic conditions on the site                   | typical for this time of year?                 | Yes X                       | No (If no, e                        | explain in Remarks.)      |
| Are Vegetation X, Soil , or Hydrole                                | ogy significantly distur                       |                             | ircumstances" present?              |                           |
| Are Vegetation, Soil, or Hydrole                                   | <del></del>                                    |                             | olain any answers in Re             |                           |
| SUMMARY OF FINDINGS – Attach                                       |  |                             | -                                   | ·                         |
| Hydrophytic Vegetation Present?                                    | Yes X No                                       | Is the Sampled Area         |                                     |                           |
|  | Yes X No                                       | within a Wetland?           | Yes X                               | No                        |
|  | Yes X No                                       |                             |                                     |                           |
| Remarks: PEM wetland in cotton field DP3-W2                        |  |                             |                                     |                           |
| DF 3-442   |  |                             |                                     |                           |
|  |  |                             |                                     |                           |
|  |  |                             |                                     |                           |
| HYDROLOGY  |  |                             |                                     |                           |
| Wetland Hydrology Indicators:                                      |  |                             |                                     | (minimum of two required) |
| Primary Indicators (minimum of one is require                      |  |                             | X Surface Soil Crack                |                           |
| X Surface Water (A1)   | Aquatic Fauna (B13)                            |                             |                                     | ed Concave Surface (B8)   |
| High Water Table (A2)  | Marl Deposits (B15) (LR                        | •                           | X Drainage Patterns                 |                           |
| Saturation (A3)  | Hydrogen Sulfide Odor (                        | •                           | Moss Trim Lines (                   |                           |
| Water Marks (B1) Sediment Deposits (B2)                            | Oxidized Rhizospheres                          | - · · · · ·                 | Dry-Season Wate                     |                           |
| Sediment Deposits (B2)   | Presence of Reduced Iron                       | ` '                         | Crayfish Burrows                    |                           |
| Drift Deposits (B3)  | Recent Iron Reduction in                       | ` '                         |                                     | on Aerial Imagery (C9)    |
| X Algal Mat or Crust (B4) Iron Deposits (B5)                       | Thin Muck Surface (C7) Other (Explain in Remar |                             | Geomorphic Posit                    |                           |
| l ——   |  | KS)                         | Shallow Aquitard ( FAC-Neutral Test |                           |
| Inundation Visible on Aerial Imagery (B7 Water-Stained Leaves (B9) | )  |                             | Sphagnum Moss (                     | ` '                       |
| Field Observations:  |  | <u>-</u>                    | Opilagham wood                      | (DO) (LIXIX 1, O)         |
| Surface Water Present? Yes X                                       | No Depth (inches):                             | . 1                         |                                     |                           |
| Water Table Present? Yes   | No X Depth (inches):                           |                             |                                     |                           |
| Saturation Present? Yes  | No X Depth (inches):                           |                             | Hydrology Present?                  | Yes X No                  |
| (includes capillary fringe)  | Dopar (mon.ss).                                |                             | lydrology ( loosiic.                | 100_/.                    |
| Describe Recorded Data (stream gauge, mor                          | nitoring well, aerial photos, p                | revious inspections), if av | /ailable:                           |                           |
| , , ,  |  | , ,                         |                                     |                           |
| Remarks:   |  |                             |                                     |                           |
| Nemarks.   |  |                             |                                     |                           |
|  |  |                             |                                     |                           |
|  |  |                             |                                     |                           |
|  |  |                             |                                     |                           |
|  |  |                             |                                     |                           |
|  |  |                             |                                     |                           |
|  |  |                             |                                     |                           |
|  |  |                             |                                     |                           |
|  |  |                             |                                     |                           |
|  |  |                             |                                     |                           |

W003-W **VEGETATION** (Four Strata) – Use scientific names of plants. Sampling Point: Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: 30 ) % Cover Species? Status **Dominance Test worksheet:** 1. **Number of Dominant Species** 2. That Are OBL, FACW, or FAC: (A) 3. **Total Number of Dominant** Species Across All Strata: 1 (B) 5. Percent of Dominant Species 6. That Are OBL, FACW, or FAC: 0.0% (A/B) Prevalence Index worksheet: Total % Cover of: =Total Cover **OBL** species x 1 = 50% of total cover: 20% of total cover: **FACW** species x 2 = 0 x 3 = Sapling/Shrub Stratum (Plot size: 30 ) **FAC** species 0 x 4 = **FACU** species 1. x 5 = UPL species 0 2. 0 0 (A) 0 3. Column Totals: (B) Prevalence Index = B/A = 5. **Hydrophytic Vegetation Indicators:** 6. 1 - Rapid Test for Hydrophytic Vegetation 7. 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 X Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) =Total Cover 50% of total cover: 20% of total cover: Herb Stratum (Plot size: 30 ) 1. Panicum <sup>1</sup>Indicators of hydric soil and wetland hydrology must be 2. present, unless disturbed or problematic. 3. **Definitions of Four Vegetation Strata:** 4. Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of 5. height. 6. 7. Sapling/Shrub - Woody plants, excluding vines, less 8. than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 80 =Total Cover Woody Vine - All woody vines greater than 3.28 ft in height. 50% of total cover: 40 20% of total cover: Woody Vine Stratum (Plot size: 30 ) 2. 3. 4. **Hydrophytic** =Total Cover Vegetation 50% of total cover: 20% of total cover: Present? No Yes X Remarks: (If observed, list morphological adaptations below.)

Heavily disturbed vegetation

SOIL Sampling Point: W003-W

| Profile Desc            | ription: (Describe t         | o the dept   | h needed to docւ     | ment t                               | he indica         | ator or co                              | onfirm the a                                 | bsence c                       | of indicators.)                            |  |  |  |
|-------------------------|------------------------------|--------------|----------------------|--------------------------------------|-------------------|---|--|--------------------------------|--|--|--|--|
| Depth                   | Matrix                       |              | Redox                | ι Featur                             | es                |   |  |                                |  |  |  |  |
| (inches)                | Color (moist)                | %            | Color (moist)        | %                                    | Type <sup>1</sup> | Loc <sup>2</sup>                        | Textur                                       | re                             | Remarks                                    |  |  |  |
| 0-4                     | 10YR 4/1                     | 95           | 10YR 4/6             | 5                                    | <u>C</u>          | <u>M</u>                                | Loamy/Cl                                     | Prominent redox concentrations |  |  |  |  |
| 4-16                    | 10YR 5/1                     | 80           | 10YR 4/6             | 20                                   | С                 | <u>M</u>                                | Loamy/Cl                                     | Prominent redox concentrations |  |  |  |  |
| 16-20                   | 7.5YR 5/6                    | 100          |                      |                                      |                   |   | Loamy/Cl                                     | ayey                           | silt loam                                  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
| <sup>1</sup> Type: C=Co | ncentration, D=Deple         | etion, RM=   | Reduced Matrix, M    | 1S=Mas                               | ked San           | d Grains.                               | <sup>2</sup> Lo                              | cation: F                      | PL=Pore Lining, M=Matrix.                  |  |  |  |
| Hydric Soil I           | ndicators: (Applical         | ble to all L | RRs, unless othe     | rwise r                              | noted.)           |   | Ind  | licators f                     | or Problematic Hydric Soils <sup>3</sup> : |  |  |  |
| Histosol (              | (A1)                         |              | Thin Dark Su         | ırface (S                            | 69) <b>(LRR</b>   | S, T, U)                                |  | 1 cm Mu                        | uck (A9) <b>(LRR O)</b>                    |  |  |  |
| Histic Ep               | ipedon (A2)                  |              | Barrier Island       | ds 1 cm                              | Muck (S           | 12)                                     |  | 2 cm Mu                        | uck (A10) <b>(LRR S)</b>                   |  |  |  |
| Black His               | stic (A3)                    |              | (MLRA 15             | 3B, 153                              | D)                |   |  | Coast P                        | rairie Redox (A16)                         |  |  |  |
| Hydroger                | n Sulfide (A4)               |              | Loamy Muck           | y Miner                              | al (F1) <b>(L</b> | RR O)                                   |  | outsi (                        | de MLRA 150A)                              |  |  |  |
| Stratified              | Layers (A5)                  |              | Loamy Gleye          | ed Matri                             | x (F2)            |   |  | Reduce                         | d Vertic (F18)                             |  |  |  |
| Organic I               | Bodies (A6) (LRR P,          | T, U)        | X Depleted Ma        | trix (F3)                            | )                 |   |  | -<br>(outsi                    | de MLRA 150A, 150B)                        |  |  |  |
|                         | cky Mineral (A7) (LR         |              | Redox Dark           |                                      |                   |   |  | Piedmo                         | nt Floodplain Soils (F19) (LRR P, T)       |  |  |  |
|                         | esence (A8) (LRR U)          |              | Depleted Da          | ce (F7)                              |                   | Anomalous Bright Floodplain Soils (F20) |  |                                |  |  |  |  |
|                         | ck (A9) (LRR P, T)           |              | Redox Depre          | (F8)                                 |                   | (MLRA 153B)                             |  |                                |  |  |  |  |
|                         | Below Dark Surface           | (A11)        | Marl (F10) <b>(L</b> | .RR U)                               | ` ,               |   |  | Red Parent Material (F21)      |  |  |  |  |
|                         | rk Surface (A12)             | ,            | Depleted Oc          | 1) <b>(MLR</b>                       | A 151)            | Very Shallow Dark Surface (F22)         |  |                                |  |  |  |  |
|                         | airie Redox (A16) ( <b>M</b> | LRA 150A     |                      | , ·                                  | •                 | D. P. T)                                | o, P, T) (outside MLRA 138, 152A in FL, 154) |                                |  |  |  |  |
|                         | ucky Mineral (S1) <b>(LI</b> |              | ,<br>Umbric Surfa    |                                      |                   | Barrier Islands Low Chroma Matrix (TS7) |  |                                |  |  |  |  |
|                         | leyed Matrix (S4)            | -,-,         | Delta Ochric         |                                      |                   | (MLRA 153B, 153D)                       |  |                                |  |  |  |  |
|                         | edox (S5)                    |              |                      | Reduced Vertic (F18) (MLRA 150A, 150 |                   |   |  |                                | • • •                                      |  |  |  |
|                         | Matrix (S6)                  |              | Piedmont Flo         | •                                    | , •               |   |  | (=                             | ,  |  |  |  |
|                         | face (S7) <b>(LRR P, S,</b>  | T. U)        | Anomalous E          |                                      |                   |   |  |                                |  |  |  |  |
|                         | e Below Surface (S8)         |              | (MLRA 14             | -                                    |                   |   | ,  | 3Indicate                      | ors of hydrophytic vegetation and          |  |  |  |
| (LRR S                  | ` '                          |              | Very Shallow         |                                      |                   |   |  |                                | nd hydrology must be present,              |  |  |  |
| (2.1.1.                 | , , , ,                      |              | (MLRA 13             |                                      |                   |   | unless disturbed or problematic.             |                                |  |  |  |  |
| Restrictive L           | .ayer (if observed):         |              |                      | <u> </u>                             |                   | ,                                       |  |                                | '  |  |  |  |
| Type:                   | None                         | е            |                      |                                      |                   |   |  |                                |  |  |  |  |
| Depth (in               | ches):                       | 0            |                      |                                      |                   |   | Hydric So                                    | oil Prese                      | nt? Yes X No                               |  |  |  |
| Remarks:                |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
| vvater perche           | d on clay layer              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
|                         |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |
| Ī                       |                              |              |                      |                                      |                   |   |  |                                |  |  |  |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                       | City/Coı                                  | unty: Ripley/Lauderdale              | Sampling Date: 9/19/2022  |  |  |  |  |
|--|---|--------------------------------------|---------------------------|--|--|--|--|
| Applicant/Owner: Silicon Ranch Corporati         | ion                                       | State: TN                            | Sampling Point: W003-UPL  |  |  |  |  |
| Investigator(s): Benjamin Burdette and Jake I    | rvin Section, Tow                         | nship, Range:                        | <del>-</del> -            |  |  |  |  |
| Landform (hillside, terrace, etc.): terrace      |   | ncave, convex, none): convex         | Slope (%): 0-2            |  |  |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA 13          | · · · · · · · · · · · · · · · · · · ·     | Long: -89.517908                     | Datum: NAD83              |  |  |  |  |
| Soil Map Unit Name: Loring silt loam, 5 to 8 p   |   | NWI classifica                       |                           |  |  |  |  |
| Are climatic / hydrologic conditions on the site | typical for this time of year?            | Yes X No (If no,                     | explain in Remarks.)      |  |  |  |  |
| Are Vegetation, Soil, or Hydrold                 | *   | Are "Normal Circumstances" present   |                           |  |  |  |  |
| Are Vegetation, Soil, or Hydrold                 |   | (If needed, explain any answers in R |                           |  |  |  |  |
| SUMMARY OF FINDINGS – Attach                     |   |                                      |                           |  |  |  |  |
| Hydrophytic Vegetation Present?                  | Yes No X Is the Sa                        | ampled Area                          |                           |  |  |  |  |
|  |   | Wetland? Yes                         | No X                      |  |  |  |  |
|  | Yes No X                                  |                                      |                           |  |  |  |  |
| Remarks:   | <del></del>                               |                                      |                           |  |  |  |  |
| Upland point corresponding to W3. In a cotto     | n field.                                  |                                      |                           |  |  |  |  |
| DP4-UP   |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
| HYDROLOGY  |   |                                      |                           |  |  |  |  |
| Wetland Hydrology Indicators:                    |   |                                      | (minimum of two required) |  |  |  |  |
| Primary Indicators (minimum of one is require    |   | Surface Soil Crac                    |                           |  |  |  |  |
| Surface Water (A1)                               | Aquatic Fauna (B13)                       |                                      | ted Concave Surface (B8)  |  |  |  |  |
| High Water Table (A2)                            | Marl Deposits (B15) (LRR U)               | Drainage Pattern                     | · ·                       |  |  |  |  |
| Saturation (A3)                                  | Hydrogen Sulfide Odor (C1)                | Moss Trim Lines                      |                           |  |  |  |  |
| Water Marks (B1)                                 | Oxidized Rhizospheres on Living           |                                      |                           |  |  |  |  |
| Sediment Deposits (B2)                           | Presence of Reduced Iron (C4)             | <u> </u>                             |                           |  |  |  |  |
| Drift Deposits (B3)                              | Recent Iron Reduction in Tilled Se        |                                      |                           |  |  |  |  |
| Algal Mat or Crust (B4)                          | Thin Muck Surface (C7)                    |                                      |                           |  |  |  |  |
| Iron Deposits (B5)                               | Other (Explain in Remarks)                | Shallow Aquitard                     | ` '                       |  |  |  |  |
| Inundation Visible on Aerial Imagery (B7)        | )   | FAC-Neutral Tes                      | , ,                       |  |  |  |  |
| Water-Stained Leaves (B9)                        |   | Sphagnum Moss                        | (D8) (LRR T, U)           |  |  |  |  |
| Field Observations:                              | Y Double Completely 0                     |                                      |                           |  |  |  |  |
| Surface Water Present? Yes                       | No X Depth (inches): 0                    | .                                    |                           |  |  |  |  |
| Water Table Present? Yes                         | No X Depth (inches): 0                    | .                                    | N V                       |  |  |  |  |
| Saturation Present? Yes                          | No X Depth (inches): 0                    | Wetland Hydrology Present?           | Yes No _X_                |  |  |  |  |
| (includes capillary fringe)                      | W. A. Constant of the Laboratory in       | Const Secretaria                     |                           |  |  |  |  |
| Describe Recorded Data (stream gauge, mor        | nitoring well, aerial photos, previous in | spections), if available:            |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
| Remarks:   |   |                                      |                           |  |  |  |  |
| Remains.   |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |
|  |   |                                      |                           |  |  |  |  |

Sampling Point:

| Troo Stratum (Plat size: 20                           | Absolute  | Dominant        | Indicator | Dominanaa Taat waxkahaati  |
|---|-----------|-----------------|-----------|--|
| Tree Stratum (Plot size: 30 ) 1.                      | % Cover   | Species?        | Status    | Dominance Test worksheet:  |
| 2.  |           |                 |           | Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)         |
| 3.  |           |                 |           | Total Number of Dominant   |
| 4.  |           |                 |           | Species Across All Strata: 1 (B)                                     |
| 5.  |           |                 |           | Percent of Dominant Species  |
| 6.  |           |                 |           | That Are OBL, FACW, or FAC: 0.0% (A/B)                               |
| 7.  |           |                 |           | Prevalence Index worksheet:  |
| 8   |           |                 |           | Total % Cover of: Multiply by:                                       |
|   | :         | Total Cover     |           | OBL species 0 x 1 = 0  |
| 50% of total cover:                                   | 20%       | of total cover: |           | FACW species 0 x 2 = 0   |
| Sapling/Shrub Stratum (Plot size: 30 )                |           |                 |           | FAC species 0 x 3 = 0  |
| 1   |           |                 |           | FACU species 0 x 4 = 0   |
| 2   |           |                 |           | UPL species 100 x 5 = 500  |
| 3   |           |                 |           | Column Totals: 100 (A) 500 (B)                                       |
| 4   |           |                 |           | Prevalence Index = B/A = 5.00  |
| 5   |           |                 |           | Hydrophytic Vegetation Indicators:                                   |
| 6   |           |                 |           | 1 - Rapid Test for Hydrophytic Vegetation                            |
| 7   |           |                 |           | 2 - Dominance Test is >50%   |
| 8   |           |                 |           | 3 - Prevalence Index is ≤3.0 <sup>1</sup>                            |
|   |           | Total Cover     |           | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)            |
| 50% of total cover:                                   | 20%       | of total cover: |           |  |
| Herb Stratum (Plot size: 30 )                         |           |                 |           |  |
| 1. Gossypium hirsutum                                 | 100       | Yes             | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be |
| 2.  |           |                 |           | present, unless disturbed or problematic.                            |
| 3.  |           |                 |           | Definitions of Four Vegetation Strata:                               |
| 4   |           |                 |           | <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or       |
| 5   |           |                 |           | more in diameter at breast height (DBH), regardless of height.       |
| 6   |           |                 |           | neight.  |
| 7   |           |                 |           | Sapling/Shrub – Woody plants, excluding vines, less                  |
| 8   |           |                 |           | than 3 in. DBH and greater than 3.28 ft (1 m) tall.                  |
| 9   |           |                 |           |  |
| 10  |           |                 |           | <b>Herb</b> – All herbaceous (non-woody) plants, regardless          |
| 11  |           |                 |           | of size, and woody plants less than 3.28 ft tall.                    |
| 12  |           |                 |           |  |
|   |           | =Total Cover    |           | <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.  |
| 50% of total cover: 50                                | 20%       | of total cover: | 20        | noight.  |
| Woody Vine Stratum (Plot size: 30)                    |           |                 |           |  |
| 1   |           |                 |           |  |
| 2   |           |                 |           |  |
| 3   |           |                 |           |  |
| 4   |           |                 |           |  |
| 5   |           | <del></del>     |           | Hydrophytic  |
| F00/ of total across                                  |           | =Total Cover    |           | Vegetation   |
| 50% of total cover:                                   |           | of total cover: |           | Present?   |
| Remarks: (If observed, list morphological adaptations | s below.) |                 |           |  |
|   |           |                 |           |  |
|   |           |                 |           |  |
|   |           |                 |           |  |
|   |           |                 |           |  |

SOIL Sampling Point: W003-UPL

| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  1 cm Muck (Presence (A8) (LRR U)  Depleted Matrix (F3)  Coast Prairie Redox (A16) (MLRA 150A)  Endow Mucky Mineral (F11) (MLRA 151)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Stripped Matrix (S6)  Delta Ochric (F13) (LRR D, T, U)  Sandy Redox (S5)  Stripped Matrix (S6)  Delta Chric (F18) (MLRA 150A, 150B)  Polyvalue Below Surface (S8)  (MRRA 153B, 153D)  Coast Prairie Redox (A5)  (MLRA 153B, 153D)  Coast Prairie Redox (A5)  (MLRA 153B, 153D)  Coast Prairie Redox (A5)  (MERA 153C)  Pieddox Dark Surface (F6)  Pieddox Dark Surface (F6)  Pieddox Depressions (F8)  (Marl (F10) (LRR U)  Depleted Dark Surface (F7)  Coast Prairie Redox (A16) (MLRA 150A)  Iron-Manganese Masses (F12) (LRR O, P, T)  Sandy Gleyed Matrix (S4)  Delta Ochric (F17) (MLRA 151)  (MERA 153C, 153D)  Piedmont Floodplain Soils (F20)  Polyvalue Below Surface (S8)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  Wery Shallow Dark Surface (F22)  Wery Shallow Dark Surface (F22)  | <del></del>  |  |  |  |
|--|--|--|--|--|
| Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  Place Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histosol (A2)  Barrier Islands 1 cm Muck (S12)  Day Mucky Mineral (F1) (LRR O)  Organic Bodies (A6) (LRR P, T, U)  Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  5 cm Mucky Mineral (A7) (LRR P, T, U)  Depleted Matrix (F3)  Muck Presence (A8) (LRR U)  Depleted Dark Surface (F7)  Tom Muck (A9) (LRR P, T, U)  Depleted Dark Surface (F7)  Thick Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Iron-Manganese Masses (F12) (LRR O, P, T)  Sandy Mucky Mineral (S1) (LRR O, S)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, T, U)  Polyvalue Below Surface (S8)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  Urbic Sort Mucky Mineral (S1) (LRR P, S, T, U)  Very Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  | cation: PL=Pore Lining, M=Matrix.  cators for Problematic Hydric Soils <sup>3</sup> :  1 cm Muck (A9) (LRR O)  2 cm Muck (A10) (LRR S)  Coast Prairie Redox (A16)  (outside MLRA 150A)  Reduced Vertic (F18) |  |  |  |
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Histic Epipedon (A2) Barrier Islands 1 cm Muck (S12)  Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR O)  Organic Bodies (A6) (LRR P, T, U)  Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  Som Mucky Mineral (A7) (LRR P, T, U)  Pepleted Matrix (F3)  Depleted Dark Surface (F6)  Thick Dark Surface (A11)  Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Stripped Matrix (S6)  Deta Cohric (F17) (MLRA 150A, 150B)  Stripped Matrix (S6)  Piedmont Floodplain Soils (F20)  (MRA 149A, 153C, 153D)  Indicato  Thick Dark S, T, U)  Polyvalue Below Surface (S8)  (MLRA 138, 152A in FL, 154)  Indicato  Thick Dark S, T, U)  Indicato  Thick Dark Surface (A12) Depleted Matrix (F3)  Lamy Gleyed Matrix (F10) Loamy Mucky Mineral (F1) (LRR O, P, T)  Indicato  Thick Dark Surface (A15) Depleted Matrix (F10) Depleted Matrix (F2) Depleted Matrix (F2) Depleted Dark Surface (F11) (MLRA 151) Unbric Surface (F13) (LRR O, P, T)  Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 151) Other  Mark 149A, 153C, 153D)  Jandia (LRR P, T, U)  Polyvalue Below Surface (S8)  (MLRA 149A, 153C, 153D)  Jandia (LRR P, T, U)  Wery Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  | cators for Problematic Hydric Soils <sup>3</sup> :  1 cm Muck (A9) (LRR O)  2 cm Muck (A10) (LRR S)  Coast Prairie Redox (A16)  (outside MLRA 150A)  Reduced Vertic (F18)                                    |  |  |  |
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Corganic Bodies (A6) (LRR P, T, U)  Scam Mucky Mineral (A7) (LRR P, T, U) Depleted Matrix (F3) Depleted Dark Surface (F6) Histosol (A9) (LRR P, T) Depleted Dark Surface (F7) Anor 1 cm Muck (A9) (LRR P, T) Depleted Dark Surface (F8) Marl (F10) (LRR U) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A) Sandy Mucky Mineral (S1) (LRR O, S) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Derleted Ochric (F17) (MLRA 150A, 150B) Stripped Matrix (S6) Piedmont Floodplain Soils (F20) Polyvalue Below Surface (S8) (MLRA 138, 152A in FL, 154)  Indicato Thin Dark Surface (S9) (LRR S, T, U) Thin Dark Surface (S1) (LRR P, S, T, U) Thin Dark Surface (S1) Thin Dark S | cators for Problematic Hydric Soils <sup>3</sup> :  1 cm Muck (A9) (LRR O)  2 cm Muck (A10) (LRR S)  Coast Prairie Redox (A16)  (outside MLRA 150A)  Reduced Vertic (F18)                                    |  |  |  |
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Corganic Bodies (A6) (LRR P, T, U)  To Muck Presence (A8) (LRR U) Depleted Dark Surface (F6) Depleted Below Dark Surface (A11) Thin Dark Surface (F1) (LRR O)  To Muck (A9) (LRR P, T) Depleted Dark Surface (F7) Depleted Dark Surface (F8) Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A) Sandy Mucky Mineral (S1) (LRR O, S) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR P, S, T, U) Polyvalue Below Surface (S8) (MLRA 158, 153D)  To Muck (S12) Depleted Matrix (F3) Delta Ochric (F11) (MLRA 150A, 150B) Piedmont Floodplain Soils (F20)  Wery Shallow Dark Surface (F22)  Wery Shallow Dark Surface (F22)  Wery Shallow Dark Surface (F22)  Wery Shallow Dark Surface (F22)  Wery Shallow Dark Surface (F22)  Wery Shallow Dark Surface (F22)  Wery Shallow Dark Surface (F22)  Wery Shallow Dark Surface (F22)   | cators for Problematic Hydric Soils <sup>3</sup> :  1 cm Muck (A9) (LRR O)  2 cm Muck (A10) (LRR S)  Coast Prairie Redox (A16)  (outside MLRA 150A)  Reduced Vertic (F18)                                    |  |  |  |
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Corganic Bodies (A6) (LRR P, T, U)  Scam Mucky Mineral (A7) (LRR P, T, U) Depleted Matrix (F3) Depleted Dark Surface (F6) Histosol (A9) (LRR P, T) Depleted Dark Surface (F7) Anor 1 cm Muck (A9) (LRR P, T) Depleted Dark Surface (F8) Marl (F10) (LRR U) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A) Sandy Mucky Mineral (S1) (LRR O, S) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Derleted Ochric (F17) (MLRA 150A, 150B) Stripped Matrix (S6) Piedmont Floodplain Soils (F20) Polyvalue Below Surface (S8) (MLRA 138, 152A in FL, 154)  Indicato Thin Dark Surface (S9) (LRR S, T, U) Thin Dark Surface (S1) (LRR P, S, T, U) Thin Dark Surface (S1) Thin Dark S | cators for Problematic Hydric Soils <sup>3</sup> :  1 cm Muck (A9) (LRR O)  2 cm Muck (A10) (LRR S)  Coast Prairie Redox (A16)  (outside MLRA 150A)  Reduced Vertic (F18)                                    |  |  |  |
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histosol (A2)  Barrier Islands 1 cm Muck (S12)  Coast Prairie Redox (A16) (MLRA 150A)  Thin Dark Surface (S9) (LRR S, T, U)  Histic Epipedon (A2)  Barrier Islands 1 cm Muck (S12)  (MLRA 153B, 153D)  Coast Muck Histor (A3)  (MLRA 153B, 153D)  Loamy Mucky Mineral (F1) (LRR O)  (outle Stratified Layers (A5)  Corganic Bodies (A6) (LRR P, T, U)  Som Mucky Mineral (A7) (LRR P, T, U)  Depleted Matrix (F3)  Coast Muck Presence (A8) (LRR U)  Depleted Dark Surface (F6)  Pied Muck Presence (A8) (LRR U)  Depleted Dark Surface (F7)  Anore 1 cm Muck (A9) (LRR P, T)  Redox Depressions (F8)  (M)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Iron-Manganese Masses (F12) (LRR O, P, T)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Piedmont Floodplain Soils (F19) (MLRA 149A)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 138, 152A in FL, 154)  Indicator  Thin Dark Surface (S9) (LRR S, T, U)  Polyvalue Matrix (A2)  Iron-Manganese Masses (F12) (LRR O, P, T)  Anomalous Bright Floodplain Soils (F20)  (MLRA 149A, 153C, 153D)  Jandie (LRR S, T, U)  Very Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  | cators for Problematic Hydric Soils <sup>3</sup> :  1 cm Muck (A9) (LRR O)  2 cm Muck (A10) (LRR S)  Coast Prairie Redox (A16)  (outside MLRA 150A)  Reduced Vertic (F18)                                    |  |  |  |
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Histic Epipedon (A2) Barrier Islands 1 cm Muck (S12)  Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR O)  Organic Bodies (A6) (LRR P, T, U)  Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  Som Mucky Mineral (A7) (LRR P, T, U)  Pepleted Matrix (F3)  Depleted Dark Surface (F6)  Thick Dark Surface (A11)  Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Stripped Matrix (S6)  Deta Cohric (F17) (MLRA 150A, 150B)  Stripped Matrix (S6)  Piedmont Floodplain Soils (F20)  (MRA 149A, 153C, 153D)  Indicato  Thick Dark S, T, U)  Polyvalue Below Surface (S8)  (MLRA 138, 152A in FL, 154)  Indicato  Thick Dark S, T, U)  Indicato  Thick Dark Surface (A12) Depleted Matrix (F3)  Lamy Gleyed Matrix (F10) Loamy Mucky Mineral (F1) (LRR O, P, T)  Indicato  Thick Dark Surface (A15) Depleted Matrix (F10) Depleted Matrix (F2) Depleted Matrix (F2) Depleted Dark Surface (F11) (MLRA 151) Unbric Surface (F13) (LRR O, P, T)  Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 151) Other  Mark 149A, 153C, 153D)  Jandia (LRR P, T, U)  Polyvalue Below Surface (S8)  (MLRA 149A, 153C, 153D)  Jandia (LRR P, T, U)  Wery Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  | cators for Problematic Hydric Soils <sup>3</sup> :  1 cm Muck (A9) (LRR O)  2 cm Muck (A10) (LRR S)  Coast Prairie Redox (A16)  (outside MLRA 150A)  Reduced Vertic (F18)                                    |  |  |  |
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Barrier Islands 1 cm Muck (S12)  Coast Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR O) Coast Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR O) Coast Organic Bodies (A6) (LRR P, T, U) Corganic Bodies (A6) (LRR P, T, U) Coast Mucky Mineral (A7) (LRR P, T, U) Depleted Matrix (F3) Depleted Dark Surface (F6) Pied Muck Presence (A8) (LRR U) Depleted Dark Surface (F7) Anor  1 cm Muck (A9) (LRR P, T) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A) Iron-Manganese Masses (F12) (LRR O, P, T) Sandy Mucky Mineral (S1) (LRR O, S) Sandy Redox (S5) Stripped Matrix (S4) Dark Surface (S7) (LRR P, S, T, U) Polyvalue Below Surface (S8) (MLRA 138, 152A in FL, 154)  Indicato Thick Dark S, T, U)  Indicato Thick Dark Surface (A12) Depleted Matrix (F2) Depleted Matrix (F12) Depleted Matrix (F13) Depleted Dark Surface (F13) Depleted Dark Surface (F12) Depleted Ochric (F13) (LRR P, T, U) Barri Mari (F10) Depleted Ochric (F17) (MLRA 151) Depleted Ochric (F17) (MLRA 150A) Depleted Ochric (F17) (MLRA 151) Oche Sandy Redox (S5) Stripped Matrix (S4) Depleted Ochric (F17) (MLRA 150A) Dark Surface (S7) (LRR P, S, T, U) Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D)  Indicator  I cm Muck (S12) Depleted Selow Dark Surface (F22) Wery Shallow Dark Surface (F22) Under A 138, 152A in FL, 154) Under Coast  I cm Muck (S12) Depleted Matrix (F10) Depleted Matrix (F10) Depleted Matrix (F20) Depleted Matrix (F10) Depleted Dark Surface (F10) Depleted Dark Surfac | cators for Problematic Hydric Soils <sup>3</sup> :  1 cm Muck (A9) (LRR O)  2 cm Muck (A10) (LRR S)  Coast Prairie Redox (A16)  (outside MLRA 150A)  Reduced Vertic (F18)                                    |  |  |  |
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Barrier Islands 1 cm Muck (S12)  Coast Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR O) Coast Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR O) Coast Organic Bodies (A6) (LRR P, T, U) Corganic Bodies (A6) (LRR P, T, U) Coast Mucky Mineral (A7) (LRR P, T, U) Depleted Matrix (F3) Depleted Dark Surface (F6) Pied Muck Presence (A8) (LRR U) Depleted Dark Surface (F7) Anor  1 cm Muck (A9) (LRR P, T) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A) Iron-Manganese Masses (F12) (LRR O, P, T) Sandy Mucky Mineral (S1) (LRR O, S) Sandy Redox (S5) Stripped Matrix (S4) Dark Surface (S7) (LRR P, S, T, U) Polyvalue Below Surface (S8) (MLRA 138, 152A in FL, 154)  Indicato Thick Dark S, T, U)  Indicato Thick Dark Surface (A12) Depleted Matrix (F2) Depleted Matrix (F12) Depleted Matrix (F13) Depleted Dark Surface (F13) Depleted Dark Surface (F12) Depleted Ochric (F13) (LRR P, T, U) Barri Mari (F10) Depleted Ochric (F17) (MLRA 151) Depleted Ochric (F17) (MLRA 150A) Depleted Ochric (F17) (MLRA 151) Oche Sandy Redox (S5) Stripped Matrix (S4) Depleted Ochric (F17) (MLRA 150A) Dark Surface (S7) (LRR P, S, T, U) Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D)  Indicator  I cm Muck (S12) Depleted Selow Dark Surface (F22) Wery Shallow Dark Surface (F22) Under A 138, 152A in FL, 154) Under Coast  I cm Muck (S12) Depleted Matrix (F10) Depleted Matrix (F10) Depleted Matrix (F20) Depleted Matrix (F10) Depleted Dark Surface (F10) Depleted Dark Surfac | cators for Problematic Hydric Soils <sup>3</sup> :  1 cm Muck (A9) (LRR O)  2 cm Muck (A10) (LRR S)  Coast Prairie Redox (A16)  (outside MLRA 150A)  Reduced Vertic (F18)                                    |  |  |  |
| Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Barrier Islands 1 cm Muck (S12)  Coast Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR O) Coast Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR O) Coast Organic Bodies (A6) (LRR P, T, U) Corganic Bodies (A6) (LRR P, T, U) Coast Mucky Mineral (A7) (LRR P, T, U) Depleted Matrix (F3) Depleted Dark Surface (F6) Pied Muck Presence (A8) (LRR U) Depleted Dark Surface (F7) Anor  1 cm Muck (A9) (LRR P, T) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A) Iron-Manganese Masses (F12) (LRR O, P, T) Sandy Mucky Mineral (S1) (LRR O, S) Sandy Redox (S5) Stripped Matrix (S4) Dark Surface (S7) (LRR P, S, T, U) Polyvalue Below Surface (S8) (MLRA 138, 152A in FL, 154)  Indicato Thick Dark S, T, U)  Indicato Thick Dark Surface (A12) Depleted Matrix (F2) Depleted Matrix (F12) Depleted Matrix (F13) Depleted Dark Surface (F13) Depleted Dark Surface (F12) Depleted Ochric (F13) (LRR P, T, U) Barri Mari (F10) Depleted Ochric (F17) (MLRA 151) Depleted Ochric (F17) (MLRA 150A) Depleted Ochric (F17) (MLRA 151) Oche Sandy Redox (S5) Stripped Matrix (S4) Depleted Ochric (F17) (MLRA 150A) Dark Surface (S7) (LRR P, S, T, U) Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D)  Indicator  I cm Muck (S12) Depleted Selow Dark Surface (F22) Wery Shallow Dark Surface (F22) Under A 138, 152A in FL, 154) Under Coast  I cm Muck (S12) Depleted Matrix (F10) Depleted Matrix (F10) Depleted Matrix (F20) Depleted Matrix (F10) Depleted Dark Surface (F10) Depleted Dark Surfac | cators for Problematic Hydric Soils <sup>3</sup> :  1 cm Muck (A9) (LRR O)  2 cm Muck (A10) (LRR S)  Coast Prairie Redox (A16)  (outside MLRA 150A)  Reduced Vertic (F18)                                    |  |  |  |
| Histosol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  1 cm Mucky Mineral (A7) (LRR P, T, U)  Depleted Matrix (F2)  Coast Mucky Mineral (A7) (LRR P, T)  1 cm Muck (A9) (LRR P, T)  Depleted Dark Surface (F7)  Anor 1 cm Muck (A9) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 138, 152A in FL, 154)  Thick Dark Surface (F22)  Mari (F10) (MLRA 1504)  Dark Surface (F7)  Anor Mari (F10) (LRR U)  Depleted Dark Surface (F11) (MLRA 151)  Wery  Coast Prairie Redox (A16) (MLRA 150A)  Depleted Ochric (F11) (MLRA 151)  (MARA 150A)  Delta Ochric (F17) (MLRA 151)  (MARA 149A)  Anomalous Bright Floodplain Soils (F20)  (MLRA 138, 152A in FL, 154)  | 1 cm Muck (A9) (LRR O) 2 cm Muck (A10) (LRR S) Coast Prairie Redox (A16) (outside MLRA 150A) Reduced Vertic (F18)  |  |  |  |
| Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  5 cm Mucky Mineral (A7) (LRR P, T, U)  1 cm Muck (A9) (LRR P, T)  Depleted Dark Surface (F7)  Anor 1 cm Muck (A9) (LRR P, T)  Depleted Below Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S8)  (MLRA 153B, 153D)  Coast Prairie Redox (A16) (LRR P, T, U)  Depleted Matrix (F2)  Redox Dark Surface (F6)  Pied Matrix (F3)  Redox Dark Surface (F7)  Anor 1 cm Muck (A9) (LRR P, T)  Redox Depressions (F8)  (M  Marl (F10) (LRR U)  Depleted Ochric (F11) (MLRA 151)  Very  Coast Prairie Redox (A16) (MLRA 150A)  Iron-Manganese Masses (F12) (LRR O, P, T)  Sandy Gleyed Matrix (S4)  Delta Ochric (F17) (MLRA 151)  Sandy Redox (S5)  Reduced Vertic (F18) (MLRA 150A, 150B)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  ur  | 2 cm Muck (A10) (LRR S) Coast Prairie Redox (A16) (outside MLRA 150A) Reduced Vertic (F18)   |  |  |  |
| Black Histic (A3) (MLRA 153B, 153D) Coast Hydrogen Sulfide (A4) Loamy Mucky Mineral (F1) (LRR O) (or Stratified Layers (A5) Loamy Gleyed Matrix (F2) Reduction To companic Bodies (A6) (LRR P, T, U) Depleted Matrix (F3) (or 5 cm Mucky Mineral (A7) (LRR P, T, U) Redox Dark Surface (F6) Pied Muck Presence (A8) (LRR U) Depleted Dark Surface (F7) Anor 1 cm Muck (A9) (LRR P, T) Redox Depressions (F8) (M Depleted Below Dark Surface (A11) Marl (F10) (LRR U) Red Thick Dark Surface (A12) Depleted Ochric (F11) (MLRA 151) Very Coast Prairie Redox (A16) (MLRA 150A) Iron-Manganese Masses (F12) (LRR O, P, T) (or Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) Barri Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 151) (M Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) Othe Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Dark Surface (S7) (LRR P, S, T, U) Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D) 3 Indii (LRR S, T, U) (MLRA 138, 152A in FL, 154) ur  | Coast Prairie Redox (A16) (outside MLRA 150A) Reduced Vertic (F18)   |  |  |  |
| Hydrogen Sulfide (A4)  Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  5 cm Mucky Mineral (A7) (LRR P, T, U)  Muck Presence (A8) (LRR U)  1 cm Muck (A9) (LRR P, T)  Depleted Dark Surface (F7)  Anor  1 cm Muck (A9) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  We (MLRA 138, 152A in FL, 154)   | (outside MLRA 150A)<br>Reduced Vertic (F18)  |  |  |  |
| Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  5 cm Mucky Mineral (A7) (LRR P, T, U)  1 cm Muck (A9) (LRR P, T)  Depleted Dark Surface (F7)  Anor  1 cm Muck (A9) (LRR P, T)  Depleted Dark Surface (F7)  Anor  1 cm Muck (A9) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 138, 152A in FL, 154)  Pied  Matrix (F2)  Redix (F2)  Redix (F2)  (MR Redix (F2)  Pied  Matrix (F2)  (Anor  Depleted Matrix (F2)  (Anor  Depleted Matrix (F3)  (MRA 149A)  Pied  Matrix (F3)  (MRA 149A)  Pied  Matrix (F3)  (MLRA 149A)  Anomalous Bright Floodplain Soils (F20)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  Weight Stripped Matrix (F3)  (MLRA 138, 152A in FL, 154)  | Reduced Vertic (F18)   |  |  |  |
| Organic Bodies (A6) (LRR P, T, U)  5 cm Mucky Mineral (A7) (LRR P, T, U)  Bedox Dark Surface (F6)  Muck Presence (A8) (LRR U)  1 cm Muck (A9) (LRR P, T)  Depleted Dark Surface (F7)  Anor  1 cm Muck (A9) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 138, 152A in FL, 154)  Pied  Matrix (F3)  (Au  Redox Dark Surface (F7)  Anor  Anor  Anor  (MRA 150)  Pied  Matrix (F3)  (MRA 150)  Pied  Matrix (F3)  Pied  Matrix (F3)  (MACA 150)  Pied  Mucky Mineral (F7)  Marl (F10) (LRR U)  Red  Marl (F10) (LRR U)  Red  Marl (F10) (LRR U)  Red  Marl (F10) (MLRA 151)  (MILRA 151)  (MILRA 151)  (MILRA 150A, 150B)  Other  Marl (F10) (MLRA 150A, 150B)  Other  Marl (F10) (MLRA 149A)  Anomalous Bright Floodplain Soils (F20)  Marl (MLRA 138, 152A in FL, 154)  Marl (F3)  Marl (F3)  Marl (F3)  Marl (F10)  Marl (F10) (LRR U)  Red  Marl (F10) (MLRA 151)  (MILRA 151)  (MILRA 151)  (MILRA 150A, 150B)  Other  Marl (F10) (MLRA 149A)  Anomalous Bright Floodplain Soils (F20)  Marl (MLRA 149A, 153C, 153D)  Marl (MLRA 150A)  Marl ( |  |  |  |  |
| 5 cm Mucky Mineral (A7) (LRR P, T, U)  Muck Presence (A8) (LRR U)  1 cm Muck (A9) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Depleted Dark Surface (F7)  Redox Depressions (F8)  (M  Marl (F10) (LRR U)  Depleted Ochric (F11) (MLRA 151)  Iron-Manganese Masses (F12) (LRR O, P, T)  Output Coast Prairie Redox (A16) (MLRA 150A)  Umbric Surface (F13) (LRR P, T, U)  Barric Sandy Gleyed Matrix (S4)  Delta Ochric (F17) (MLRA 151)  Reduced Vertic (F18) (MLRA 150A, 150B)  Other Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  We (MLRA 138, 152A in FL, 154)   | (Outside MLRA 150A, 150B)  |  |  |  |
| Muck Presence (A8) (LRR U)  1 cm Muck (A9) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 138, 152A in FL, 154)  Marl (F10) (LRR U)  Redox Depressions (F8)  (MARA 151)  Redox Depressions (F8)  (MERA 151)  (MERA 151)  (MERA 151)  (MERA 151)  (MERA 150A, 150B)  Anomalous Bright Floodplain Soils (F19) (MLRA 149A)  Very Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  | •  |  |  |  |
| 1 cm Muck (A9) (LRR P, T)  Depleted Below Dark Surface (A11)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MARA 150) (LRR U)  Depleted Ochric (F11) (MLRA 151)  Umbric Surface (F12) (LRR O, P, T)  (MERA 151)  Reduced Vertic (F18) (MLRA 150A, 150B)  Piedmont Floodplain Soils (F19) (MLRA 149A)  Anomalous Bright Floodplain Soils (F20)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  We (MLRA 138, 152A in FL, 154)   | Piedmont Floodplain Soils (F19) (LRR P, T)   |  |  |  |
| Depleted Below Dark Surface (A11)  Marl (F10) (LRR U)  Depleted Ochric (F11) (MLRA 151)  Coast Prairie Redox (A16) (MLRA 150A)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 138, 152A in FL, 154)  Depleted Ochric (F11) (MLRA 151)  (MDLRA 151)  (MLRA 150A, 150B)  Other  Red  Very  Marl (F10) (LRR U)  Red  Very  (MLRA 151)  (MRA 151)  (MRA 151)  (MRA 150A, 150B)  Other  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 149A, 153C, 153D)  (MLRA 138, 152A in FL, 154)   | Anomalous Bright Floodplain Soils (F20) (MLRA 153B)  |  |  |  |
| Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Iron-Manganese Masses (F12) (LRR O, P, T)  Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (MLRA 149A, 153C, 153D)  (MLRA 138, 152A in FL, 154)  | Red Parent Material (F21)  |  |  |  |
| Coast Prairie Redox (A16) (MLRA 150A) Iron-Manganese Masses (F12) (LRR O, P, T) Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) Barri Sandy Gleyed Matrix (S4) Delta Ochric (F17) (MLRA 151) (M Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) Othe Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Floodplain Soils (F20) Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D) India (LRR S, T, U) Very Shallow Dark Surface (F22) we (MLRA 138, 152A in FL, 154)   | Very Shallow Dark Surface (F22)  |  |  |  |
| Sandy Mucky Mineral (S1) (LRR O, S)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (LRR S, T, U)  Delta Ochric (F13) (LRR P, T, U)  Reduced Vertic (F18) (MLRA 150A, 150B)  Piedmont Floodplain Soils (F19) (MLRA 149A)  Anomalous Bright Floodplain Soils (F20)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  Umbric Surface (F13) (LRR P, T, U)  Barri  (M. M. R. P, T, U)  M. Reduced Vertic (F18) (MLRA 150A, 150B)  Other  Othe |  |  |  |  |
| Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (LRR S, T, U)  Polyvalue Matrix (S6)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  (MLRA 151)  (MLRA 151)  (MLRA 151)  (MLRA 150A, 150B)  Other  Other | Barrier Islands Low Chroma Matrix (TS7)  |  |  |  |
| Sandy Redox (S5)  Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (LRR S, T, U)  Polyvalue Matrix (S6)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  Other  Ot | (MLRA 153B, 153D)  |  |  |  |
| Stripped Matrix (S6)  Dark Surface (S7) (LRR P, S, T, U)  Polyvalue Below Surface (S8)  (LRR S, T, U)  Polyvalue Matrix (S6)  Piedmont Floodplain Soils (F19) (MLRA 149A)  Anomalous Bright Floodplain Soils (F20)  (MLRA 149A, 153C, 153D)  Very Shallow Dark Surface (F22)  (MLRA 138, 152A in FL, 154)  ur  | <b>50B)</b> Other (Explain in Remarks)   |  |  |  |
| Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D) <sup>3</sup> Indi<br>(LRR S, T, U) Very Shallow Dark Surface (F22) we<br>(MLRA 138, 152A in FL, 154) ur   | ,  |  |  |  |
| (LRR S, T, U)       Very Shallow Dark Surface (F22)       we (MLRA 138, 152A in FL, 154)   |  |  |  |  |
| (MLRA 138, 152A in FL, 154) ur   | <sup>3</sup> Indicators of hydrophytic vegetation and  |  |  |  |
| · · · · · · · · · · · · · · · · · · ·  | wetland hydrology must be present,   |  |  |  |
| Destriction I was (if also were d).  | unless disturbed or problematic.   |  |  |  |
| Restrictive Layer (if observed):   |  |  |  |  |
| Type: None   |  |  |  |  |
| Depth (inches): 0 Hydric Soil Pre  | il Present?  |  |  |  |

## WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                            |                                    | City/County: Ripley/Lau               | uderdale                | Sampling Date: 9/20/22    |  |  |
|---|------------------------------------|---------------------------------------|-------------------------|---------------------------|--|--|
| Applicant/Owner: Silicon Ranch Corpora                | ation                              |                                       | State: TN               | Sampling Point: W004-W    |  |  |
| Investigator(s): Benjamin Burdette and Jake           |                                    | tion, Township, Range:                |                         |                           |  |  |
| Landform (hillside, terrace, etc.): terrace           |                                    | relief (concave, convex, r            | none): concave          | Slope (%): 2-5            |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA 1                | _                                  | •                                     | 9.511929                | Datum: NAD83              |  |  |
| Soil Map Unit Name: see remarks                       | <u> </u>                           |                                       | NWI classificat         |                           |  |  |
| Are climatic / hydrologic conditions on the site      | e typical for this time of year?   | Yes X                                 | No (If no, e            | explain in Remarks.)      |  |  |
| Are Vegetation, Soil, or Hydro                        |                                    |                                       | ircumstances" present?  |                           |  |  |
| Are Vegetation, Soil, or Hydro                        |                                    |                                       | blain any answers in Re |                           |  |  |
| SUMMARY OF FINDINGS – Attach                          |                                    |                                       | -                       | •                         |  |  |
| Lludraphytic Vagatation Present?                      | Yes X No                           | Is the Campled Area                   |                         |                           |  |  |
| Hydrophytic Vegetation Present? Hydric Soil Present?  |                                    | Is the Sampled Area within a Wetland? | Yes X                   | No                        |  |  |
| Wetland Hydrology Present?                            | Yes X No                           | Within a Froncisco                    | 100                     | NO                        |  |  |
| Remarks:  |                                    |                                       |                         |                           |  |  |
| PFO wetland   |                                    |                                       |                         |                           |  |  |
| O Was Astronomy language O to 2 paraget clange        | !                                  | 114 to area 40 to 20 more             | 4 -1                    | to decrease who are       |  |  |
| Soils: Adler silt loam, 0 to 2 percent slopes, DP5-W4 | occasionally flooded; interripring | s silt loam, 12 to 20 perc            | ent slopes, severely el | oded, northern phase      |  |  |
| DP5-VV4   |                                    |                                       |                         |                           |  |  |
| HYDROLOGY   |                                    |                                       |                         |                           |  |  |
| Wetland Hydrology Indicators:                         |                                    |                                       | Secondary Indicators    | (minimum of two required) |  |  |
| Primary Indicators (minimum of one is requi           | red: check all that apply)         |                                       | Surface Soil Crack      | •                         |  |  |
| Surface Water (A1)                                    | Aquatic Fauna (B13)                | <del></del> ,                         |                         | ed Concave Surface (B8)   |  |  |
| High Water Table (A2)                                 | Marl Deposits (B15) (LR            | R II)                                 | X Drainage Patterns     |                           |  |  |
| Saturation (A3)                                       | Hydrogen Sulfide Odor (            | -                                     | Moss Trim Lines (       |                           |  |  |
| Water Marks (B1)                                      | X Oxidized Rhizospheres            |                                       |                         |                           |  |  |
| Sediment Deposits (B2)                                | Presence of Reduced Iro            |                                       |                         |                           |  |  |
| X Drift Deposits (B3)                                 | Recent Iron Reduction in           |                                       |                         |                           |  |  |
| Algal Mat or Crust (B4)                               | Thin Muck Surface (C7)             |                                       |                         |                           |  |  |
| Iron Deposits (B5)                                    | Other (Explain in Remark           | •                                     | Shallow Aquitard (      | ` '                       |  |  |
| Inundation Visible on Aerial Imagery (B               |                                    | ,                                     | X FAC-Neutral Test      | ` '                       |  |  |
| Water-Stained Leaves (B9)                             | • ,                                | •                                     | Sphagnum Moss (         |                           |  |  |
| Field Observations:                                   |                                    |                                       | <del>_</del> · · ·      |                           |  |  |
| Surface Water Present? Yes                            | No X Depth (inches):               | 0                                     |                         |                           |  |  |
| Water Table Present? Yes                              | No X Depth (inches):               |                                       |                         |                           |  |  |
| Saturation Present? Yes                               | No X Depth (inches):               |                                       | Hydrology Present?      | Yes X No                  |  |  |
| (includes capillary fringe)                           |                                    |                                       | ,                       |                           |  |  |
| Describe Recorded Data (stream gauge, mo              | onitoring well, aerial photos, pr  | evious inspections), if av            | /ailable:               |                           |  |  |
|   |                                    | • •                                   |                         |                           |  |  |
|   |                                    |                                       |                         |                           |  |  |
| Remarks:  |                                    |                                       |                         |                           |  |  |
|   |                                    |                                       |                         |                           |  |  |
|   |                                    |                                       |                         |                           |  |  |
|   |                                    |                                       |                         |                           |  |  |
|   |                                    |                                       |                         |                           |  |  |
|   |                                    |                                       |                         |                           |  |  |
|   |                                    |                                       |                         |                           |  |  |
|   |                                    |                                       |                         |                           |  |  |
|   |                                    |                                       |                         |                           |  |  |
|   |                                    |                                       |                         |                           |  |  |

|   | Absolute  | Dominant        | Indicator |   |  |  |  |
|---|-----------|-----------------|-----------|---|--|--|--|
| Tree Stratum (Plot size:)                             | % Cover   | Species?        | Status    | Dominance Test worksheet:   |  |  |  |
| 1. Platanus occidentalis                              | 50        | Yes             | FACW      | Number of Dominant Species  |  |  |  |
| 2. Salix nigra  | 25        | Yes             | OBL       | That Are OBL, FACW, or FAC:5 (A)  |  |  |  |
| 3. Liquidambar styraciflua                            | 20        | Yes             | FAC       | Total Number of Dominant  |  |  |  |
| 4   |           |                 |           | Species Across All Strata: 6 (B)  |  |  |  |
| 5.  |           |                 |           | Percent of Dominant Species   |  |  |  |
| 6   |           |                 |           | That Are OBL, FACW, or FAC: 83.3% (A/B)   |  |  |  |
| 7   |           |                 |           | Prevalence Index worksheet:   |  |  |  |
| 8   |           |                 |           | Total % Cover of: Multiply by:  |  |  |  |
|   | 95        | =Total Cover    |           | OBL species 25 x 1 = 25   |  |  |  |
| 50% of total cover: 48                                | 20%       | of total cover: | 19        | FACW species 55 x 2 = 110   |  |  |  |
| Sapling/Shrub Stratum (Plot size: 30 )                |           |                 |           | FAC species100 x 3 =300   |  |  |  |
| Carya tomentosa                                       | 10        | Yes             | UPL       | FACU species 7 x 4 = 28   |  |  |  |
| 2. Platanus occidentalis                              | 5         | Yes             | FACW      | UPL species 15 x 5 = 75   |  |  |  |
| 3. Sassafras albidum                                  | 2         | No              | FACU      | Column Totals: 202 (A) 538 (B)  |  |  |  |
| 4.  |           |                 |           | Prevalence Index = B/A = 2.66   |  |  |  |
| 5.  |           |                 |           | Hydrophytic Vegetation Indicators:  |  |  |  |
| 6.  |           |                 |           | 1 - Rapid Test for Hydrophytic Vegetation   |  |  |  |
| 7.  |           |                 |           | X 2 - Dominance Test is >50%  |  |  |  |
| 8.  |           |                 |           | X 3 - Prevalence Index is ≤3.0 <sup>1</sup>   |  |  |  |
|   | 17 :      | Total Cover     |           | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)   |  |  |  |
| 50% of total cover: 9                                 |           | of total cover: | 4         |   |  |  |  |
| Herb Stratum (Plot size: 30 )                         |           | or total cover. |           |   |  |  |  |
| 1. Toxicodendron radicans                             | 5         | No              | FAC       | 1   |  |  |  |
| Microstegium vimineum                                 | 75        | Yes             | FAC       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.    |  |  |  |
|   | 5         | No              | UPL       | Definitions of Four Vegetation Strata:  |  |  |  |
|   | 5         | No              |           |   |  |  |  |
| 4. Parthenocissus quinquefolia                        | <u> </u>  | INO             | FACU      | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or<br>more in diameter at breast height (DBH), regardless of |  |  |  |
| 5   |           |                 |           | height.   |  |  |  |
| 6.  |           |                 |           | 3   |  |  |  |
| 7   |           |                 |           | Sapling/Shrub – Woody plants, excluding vines, less   |  |  |  |
| 8   |           |                 |           | than 3 in. DBH and greater than 3.28 ft (1 m) tall.   |  |  |  |
| 9.  |           |                 |           |   |  |  |  |
| 10  |           |                 |           | <b>Herb</b> – All herbaceous (non-woody) plants, regardless   |  |  |  |
| 11  |           |                 |           | of size, and woody plants less than 3.28 ft tall.   |  |  |  |
| 12  |           |                 |           |   |  |  |  |
| ,   |           | =Total Cover    |           | <b>Woody Vine</b> – All woody vines greater than 3.28 ft in   |  |  |  |
| 50% of total cover: 45                                | 20%       | of total cover: | 18        | height.   |  |  |  |
| Woody Vine Stratum (Plot size: 30 )                   |           |                 |           |   |  |  |  |
| 1   |           |                 |           |   |  |  |  |
| 2   |           |                 |           |   |  |  |  |
| 3   |           |                 |           |   |  |  |  |
| 4   |           |                 |           |   |  |  |  |
| 5.  |           |                 |           | Hydrophytic   |  |  |  |
|   | :         | =Total Cover    |           | Vegetation  |  |  |  |
| 50% of total cover:                                   | 20%       | of total cover: |           | Present? Yes X No No  |  |  |  |
| Remarks: (If observed, list morphological adaptations | s below ) |                 |           |   |  |  |  |
| remarks. (II observed, list morphological adaptations | o bolow.  |                 |           |   |  |  |  |
|   |           |                 |           |   |  |  |  |
|   |           |                 |           |   |  |  |  |
|   |           |                 |           |   |  |  |  |
|   |           |                 |           |   |  |  |  |

SOIL Sampling Point: W004-W

|                   | ription: (Describe                        | to the dept |                                   |            |                   | ator or co       | onfirm the absence                                  | of indicators.)                             |  |  |
|-------------------|---|-------------|-----------------------------------|------------|-------------------|------------------|---|---|--|--|
| Depth<br>(inches) | Matrix                                    | %           |                                   | r Featur   |                   | Loc <sup>2</sup> | Toyturo   | Domarka                                     |  |  |
| (inches)          | Color (moist)                             |             | Color (moist)                     |            | Type <sup>1</sup> |                  | Texture   | Remarks                                     |  |  |
| 0-2               | 10YR 5/2                                  | 98          | 10YR 4/6                          | 2          | <u>C</u>          | PL               | Loamy/Clayey  |   |  |  |
| 2-20              | 10YR 5/2                                  | 90          | 10YR 5/6                          | 10         | С                 | M                | Loamy/Clayey  | Prominent redox concentrations              |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
| 1Type: C=C        | oncentration, D=Depl                      | etion PM-   | Peduced Matrix M                  | <br>1S-Mae | ked San           | d Grains         | <sup>2</sup> l ocation:                             | PL=Pore Lining, M=Matrix.                   |  |  |
|                   | Indicators: (Applica                      |             |                                   |            |                   | u Oranis.        |   | for Problematic Hydric Soils <sup>3</sup> : |  |  |
| Histosol          |   | 5.0 to a =  | Thin Dark Su                      |            |                   | S, T, U)         |   | Muck (A9) (LRR O)                           |  |  |
|                   | oipedon (A2)                              |             | Barrier Island                    |            |                   |                  |   | Muck (A10) (LRR S)                          |  |  |
| Black Hi          | stic (A3)                                 |             | (MLRA 15                          |            | •                 | ,                |   | Prairie Redox (A16)                         |  |  |
| Hydroge           | n Sulfide (A4)                            |             | Loamy Muck                        | y Miner    | al (F1) <b>(L</b> | RR O)            | (out  | side MLRA 150A)                             |  |  |
| Stratified        | I Layers (A5)                             |             | Loamy Gleye                       | ed Matri   | x (F2)            |                  | Reduc   | ed Vertic (F18)                             |  |  |
|                   | Bodies (A6) (LRR P,                       |             | X Depleted Ma                     | trix (F3)  | )                 |                  | •   | side MLRA 150A, 150B)                       |  |  |
|                   | cky Mineral (A7) (LR                      |             | Redox Dark                        |            |                   |                  | Piedmont Floodplain Soils (F19) (LRR P, T)          |   |  |  |
|                   | esence (A8) (LRR U)                       |             | Depleted Dai                      |            |                   |                  | Anomalous Bright Floodplain Soils (F20) (MLRA 153B) |   |  |  |
|                   | ck (A9) (LRR P, T)                        | (411)       | Redox Depre                       |            | (F8)              |                  | Red Parent Material (F21)                           |   |  |  |
|                   | l Below Dark Surface<br>ark Surface (A12) | (A11)       | Marl (F10) <b>(L</b> Depleted Ocl |            | 1) (MI D          | ۸ 151)           | Very Shallow Dark Surface (F22)                     |   |  |  |
|                   | rairie Redox (A16) ( <b>M</b>             | ILRA 150A   |                                   |            |                   |                  | <del></del> ′                                       | side MLRA 138, 152A in FL, 154)             |  |  |
|                   | lucky Mineral (S1) <b>(L</b>              |             | Umbric Surfa                      |            |                   |                  | Barrier Islands Low Chroma Matrix (TS7)             |   |  |  |
|                   | ileyed Matrix (S4)                        | , ,         | Delta Ochric                      | -          |                   |                  | 1) (MLRA 153B, 153D)                                |   |  |  |
|                   | edox (S5)                                 |             | Reduced Ver                       |            |                   |                  | Other (Explain in Remarks)                          |   |  |  |
| Stripped          | Matrix (S6)                               |             | Piedmont Flo                      | odplain    | Soils (F          | 19) <b>(MLR</b>  | A 149A)   |   |  |  |
| Dark Sui          | face (S7) (LRR P, S                       | , T, U)     | Anomalous E                       | Bright FI  | oodplain          | Soils (F2        | 0)  |   |  |  |
|                   | e Below Surface (S8                       | )           | (MLRA 14                          |            |                   | •                |   | ators of hydrophytic vegetation and         |  |  |
| (LRR              | S, T, U)                                  |             | Very Shallow                      |            |                   |                  |   | and hydrology must be present,              |  |  |
|                   |   |             | (MLRA 13                          | 8, 152A    | in FL, 1          | 54)              | unle  | ess disturbed or problematic.               |  |  |
|                   | Layer (if observed):                      |             |                                   |            |                   |                  |   |   |  |  |
| Type:             | Non                                       |             |                                   |            |                   |                  |   |   |  |  |
| Depth (ir         | nches):                                   | 0           |                                   |            |                   |                  | Hydric Soil Pres                                    | ent? Yes <u>X</u> No                        |  |  |
| Remarks:          |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
|                   |   |             |                                   |            |                   |                  |   |   |  |  |
| Ī                 |   |             |                                   |            |                   |                  |   |   |  |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                                   | City/County: Ripley/La                                    | auderdale Sampling Date: 9/20/2022                   |  |  |  |  |  |
|--|---|--|--|--|--|--|--|
| Applicant/Owner: Silicon Ranch Corporati                     | on  | State: TN Sampling Point: W004-UPL                   |  |  |  |  |  |
| Investigator(s): Benjamin Burdette and Jake II               | rvin Section, Township, Range:                            |  |  |  |  |  |  |
| Landform (hillside, terrace, etc.): terrace                  | Local relief (concave, convex,                            |  |  |  |  |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA 13                      | · · · · · · · · · · · · · · · · · · ·                     | -89.511957 Datum: NAD83                              |  |  |  |  |  |
|  | o 20 percent slopes, severely eroded, northern phase      |  |  |  |  |  |  |
| Are climatic / hydrologic conditions on the site             | typical for this time of year? Yes X                      | No (If no, explain in Remarks.)                      |  |  |  |  |  |
| Are Vegetation, Soil, or Hydrold                             | ·· —  | Circumstances" present? Yes X No                     |  |  |  |  |  |
| Are Vegetation, Soil, or Hydrold                             |   | xplain any answers in Remarks.)                      |  |  |  |  |  |
| <u> </u>   | site map showing sampling point locati                    |  |  |  |  |  |  |
| Hydrophytic Vegetation Present?                              | Yes No X Is the Sampled Area                              |  |  |  |  |  |  |
|  | Yes No X within a Wetland?                                | Yes No _X_   |  |  |  |  |  |
|  | Yes No X  | <del></del>  |  |  |  |  |  |
| Upland point corresponding to W4. In forest a DP6-UP         | djacent to agricultuiral field.                           |  |  |  |  |  |  |
| HYDROLOGY  |   |  |  |  |  |  |  |
| Wetland Hydrology Indicators:                                |   | Secondary Indicators (minimum of two required)       |  |  |  |  |  |
| Primary Indicators (minimum of one is require                |   | Surface Soil Cracks (B6)                             |  |  |  |  |  |
| Surface Water (A1)   | Aquatic Fauna (B13)                                       | Sparsely Vegetated Concave Surface (B8)              |  |  |  |  |  |
| High Water Table (A2)  | Marl Deposits (B15) (LRR U)                               | Drainage Patterns (B10)                              |  |  |  |  |  |
| Saturation (A3)  | Hydrogen Sulfide Odor (C1)                                | Moss Trim Lines (B16)                                |  |  |  |  |  |
| Water Marks (B1)   | Oxidized Rhizospheres on Living Roots (C3)                | Dry-Season Water Table (C2)                          |  |  |  |  |  |
| Sediment Deposits (B2)                                       | Presence of Reduced Iron (C4)                             | Crayfish Burrows (C8)                                |  |  |  |  |  |
| Drift Deposits (B3)  | Recent Iron Reduction in Tilled Soils (C6)                | Saturation Visible on Aerial Imagery (C9)            |  |  |  |  |  |
| Algal Mat or Crust (B4)                                      | Thin Muck Surface (C7)                                    |  |  |  |  |  |  |
| Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) | Other (Explain in Remarks)                                | Remarks) Shallow Aquitard (D3) FAC-Neutral Test (D5) |  |  |  |  |  |
| Water-Stained Leaves (B9)                                    |   | Sphagnum Moss (D8) (LRR T, U)                        |  |  |  |  |  |
| Field Observations:  |   | Ophagham wood (DO) (Error 1, O)                      |  |  |  |  |  |
|  | No X Depth (inches): 0                                    |  |  |  |  |  |  |
|  | No X Depth (inches): 0                                    |  |  |  |  |  |  |
|  |   | Hydrology Present? Yes No X                          |  |  |  |  |  |
| (includes capillary fringe)                                  | <u> </u>  |  |  |  |  |  |  |
|  | nitoring well, aerial photos, previous inspections), if a | available:   |  |  |  |  |  |
|  |   |  |  |  |  |  |  |
| Remarks:   |   |  |  |  |  |  |  |
|  |   |  |  |  |  |  |  |
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|  |   |  |  |  |  |  |  |
|  |   |  |  |  |  |  |  |
|  |   |  |  |  |  |  |  |

|  | Absolute  | Dominant        | Indicator |  |
|--|-----------|-----------------|-----------|--|
| Tree Stratum (Plot size:)                            | % Cover   | Species?        | Status    | Dominance Test worksheet:  |
| Ulmus americana                                      | 75        | Yes             | FAC       | Number of Dominant Species   |
| 2. Carya tomentosa                                   | 10        | No              | UPL       | That Are OBL, FACW, or FAC: 2 (A)                                    |
| 3. Platanus occidentalis                             | 5         | No              | FACW      | Total Number of Dominant   |
| 4. Celtis spp.                                       | 5         | No              |           | Species Across All Strata: 5 (B)                                     |
| 5.   |           |                 |           | Percent of Dominant Species  |
| 6  |           |                 |           | That Are OBL, FACW, or FAC: 40.0% (A/B)                              |
| 7.   |           |                 |           | Prevalence Index worksheet:  |
| 8.   |           |                 |           | Total % Cover of: Multiply by:                                       |
|  | 95        | =Total Cover    |           | OBL species 0 x 1 = 0  |
| 50% of total cover: 48                               | 20%       | of total cover: | 19        | FACW species 5 x 2 = 10  |
| Sapling/Shrub Stratum (Plot size: 30 )               |           |                 |           | FAC species 87 x 3 = 261   |
| 1. Liquidambar styraciflua                           | 2         | No              | FAC       | FACU species 5 x 4 = 20  |
| 2. Ulmus americana                                   | 10        | Yes             | FAC       | UPL species 15 x 5 = 75  |
| 3. Carva tomentosa                                   | 5         | Yes             | UPL       | Column Totals: 112 (A) 366 (B)                                       |
| 4.   |           |                 |           | Prevalence Index = B/A = 3.27  |
| 5.   |           |                 |           | Hydrophytic Vegetation Indicators:                                   |
| 6.   |           |                 |           | 1 - Rapid Test for Hydrophytic Vegetation                            |
| 7  |           |                 |           | 2 - Dominance Test is >50%   |
| 8.   |           |                 |           | 3 - Prevalence Index is ≤3.0 <sup>1</sup>                            |
| o  | 17 :      | Total Cover     |           | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)            |
| EOO/ of total covery O                               |           |                 | 4         |  |
| 50% of total cover: 9 Herb Stratum (Plot size: 30 )  | 20%       | of total cover: | 4         |  |
| / 1010 01010111                                      | 40        | V               |           |  |
| 1. Persicaria virginiana                             | 10        | Yes             |           | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be |
| 2. Lonicera japonica                                 | 5         | Yes             | FACU      | present, unless disturbed or problematic.                            |
| 3.   |           |                 |           | Definitions of Four Vegetation Strata:                               |
| 4  |           |                 |           | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or              |
| 5.   |           |                 |           | more in diameter at breast height (DBH), regardless of height.       |
| 6.   |           |                 |           | neight.  |
| 7  |           |                 |           | Sapling/Shrub – Woody plants, excluding vines, less                  |
| 8  |           |                 |           | than 3 in. DBH and greater than 3.28 ft (1 m) tall.                  |
| 9  |           |                 |           |  |
| 10   |           |                 |           | Herb – All herbaceous (non-woody) plants, regardless                 |
| 11.  |           |                 |           | of size, and woody plants less than 3.28 ft tall.                    |
| 12   |           |                 |           | , , , , , , , , , , , , , , , , , , ,                                |
| -  | 15 :      | =Total Cover    |           | Woody Vine – All woody vines greater than 3.28 ft in                 |
| 50% of total cover: 8                                | 20%       | of total cover: | 3         | height.  |
| Woody Vine Stratum (Plot size: 30 )                  |           |                 |           |  |
| 1.   |           |                 |           |  |
| 2.   |           |                 |           |  |
| 3.   |           |                 |           |  |
| 1  |           |                 |           |  |
| 5.   |           |                 |           |  |
| J  |           | Total Cover     |           | Hydrophytic  |
| 50% of total cover:                                  |           | of total cover: |           | Vegetation Present? Yes No X   |
| 50% of total cover:                                  |           | oi total cover. |           | Present?         Yes         No         X                            |
| Remarks: (If observed, list morphological adaptation | s below.) |                 |           |  |
|  |           |                 |           |  |
|  |           |                 |           |  |

SOIL Sampling Point: W004-UPL

| Profile Desc              | ription: (Describe t         | o the depth   | needed to docu   | ıment t  | he indica         | ator or co       | onfirm the abs   | ence of indic   | cators.)     |                         |
|---------------------------|------------------------------|---------------|--|----------|-------------------|------------------|--|-----------------|--------------|-------------------------|
| Depth                     | Matrix                       |               |  | x Featur |                   |                  |  |                 | -            |                         |
| (inches)                  | Color (moist)                | %             | Color (moist)  | %        | Type <sup>1</sup> | Loc <sup>2</sup> | Texture  |                 | Ren          | narks                   |
| 0-16                      | 10YR 5/3                     | 100           |  |          |                   |                  | Loamy/Clay   | ey              | silty        | loam                    |
| 16-20                     | 10YR 5/3                     | 95            |  |          |                   |                  | Loamy/Clay   | ey              | silty        | loam                    |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              | _                       |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
| 17                        |                              |               | N. d d M. 4.d  | 10. 14   |                   | -1.0             | 21   | # DI D          |              | NA - 4-ti-              |
|                           | ncentration, D=Depl          |               |  |          |                   | d Grains.        |  | tion: PL=Por    |              | •                       |
| -                         | ndicators: (Applica          | DIE TO AII LI |  |          |                   | C T III          |  | ators for Pro   | -            | aric Solis":            |
| Histosol                  |                              | •             | Thin Dark Su   |          |                   |                  |  | cm Muck (As     |              |                         |
|                           | ipedon (A2)                  | •             | Barrier Island   |          | ,                 | 12)              |  | cm Muck (A      |              |                         |
| Black His                 | ` '                          |               | (MLRA 15   | •        | •                 | DD (0)           |  | Coast Prairie F | -            |                         |
|                           | n Sulfide (A4)               | •             | Loamy Muck   | -        |                   | .RR O)           | _  | (outside ML     | •            |                         |
|                           | Layers (A5)                  | <b>T</b>      | Loamy Gleye  |          |                   |                  | F  | Reduced Verti   | ` '          | -0D)                    |
|                           | Bodies (A6) (LRR P,          |               | Depleted Ma  | ٠,       |                   |                  | -  | (outside ML     |              |                         |
|                           | cky Mineral (A7) (LR         |               | Redox Dark   |          | ` '               |                  |  |                 | •            | (F19) <b>(LRR P, T)</b> |
|                           | esence (A8) (LRR U)          |               | Depleted Date  |          | ` '               |                  | <u> </u>   |                 | -            | in Soils (F20)          |
| 1 cm Muck (A9) (LRR P, T) |                              |               | Redox Depre  |          | (F0)              |                  | (MLRA 153B)<br>Red Parent Material (F21)   |                 |              |                         |
|                           | Below Dark Surface           | : (A11)       | Marl (F10) <b>(L</b>   |          | 1) (MLD.          | A 4E4\           | Very Shallow Dark Surface (F22)  |                 |              | (E22)                   |
|                           | rk Surface (A12)             | I DA 450A)    | Depleted Oc  | `        | , ·               | •                |  | •               |              | , ,                     |
|                           | airie Redox (A16) ( <b>M</b> |               | Iron-Manganese Masses (F12) (LRR C<br>Umbric Surface (F13) (LRR P, T, U) |          |                   |                  | O, P, T) (outside MLRA 138, 152A in FL, 154) Barrier Islands Low Chroma Matrix (TS7) |                 |              |                         |
|                           | ucky Mineral (S1) <b>(L</b>  | KK (), (3)    | Delta Ochric (F13) (LRR P, 1, U)   |          |                   |                  | (MLRA 153B, 153D)  |                 |              |                         |
|                           | leyed Matrix (S4)            | ,             |  |          |                   |                  | EOD)   |                 |              |                         |
|                           | edox (S5)                    | ,             | Reduced Ve   | •        | , •               |                  |  | ther (Explain   | in Remarks,  |                         |
|                           | Matrix (S6)                  | T 11          | Piedmont Flo   |          |                   |                  |  |                 |              |                         |
|                           | face (S7) (LRR P, S          |               | Anomalous E  | -        |                   |                  |  |                 |              |                         |
|                           | e Below Surface (S8          | )             | (MLRA 14   |          |                   |                  | 1  |                 |              | egetation and           |
| (LRR :                    | S, T, U)                     |               | Very Shallow<br>(MLRA 13   |          |                   |                  |  | -               | rology must  |                         |
| Poetrietive I             | .ayer (if observed):         |               | (WEICA 13  | 0, 1327  | , III I E, I      | J <del>4</del> ) |  | uriless distu   | ibed of prob | emano.                  |
| Type:                     | .ayer (ii observed).<br>Non  | e             |  |          |                   |                  |  |                 |              |                         |
|                           |                              | 0             |  |          |                   |                  | Hydric Soil  | Drocont?        | Voo          | No. Y                   |
| Depth (in Remarks:        | cries).                      | U             |  |          |                   |                  | Hydric Soil  | Present?        | Yes          | NoX                     |
|                           | il color: 10YR 5/2 5%        | silty loam    |  |          |                   |                  |  |                 |              |                         |
| 10 20 2114 00             | 11 00101. 10111 0/2 07       | o only rourn  |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
|                           |                              |               |  |          |                   |                  |  |                 |              |                         |
| Ī                         |                              |               |  |          |                   |                  |  |                 |              |                         |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II   |   | City/County: Ripley/Lau  | ıderdale                | Sampling Date: 9/20/22    |  |  |
|--|---|--|-------------------------|---------------------------|--|--|
| Applicant/Owner: Silicon Ranch Corpora                                     | tion  |  | State: TN               | Sampling Point: W005-W    |  |  |
| Investigator(s): Benjamin Burdette and Jake                                | Irven Sec                                     | ction, Township, Range:  |                         | -                         |  |  |
| Landform (hillside, terrace, etc.): hillside                               |   | relief (concave, convex, r   | none): concave          | Slope (%): 2-5            |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA 1                                     |   | •  | 9.512744                | Datum: NAD83              |  |  |
|  | 54 Lat. 55.714162                             | Long. <u>os</u>  |                         | <del></del>               |  |  |
| Soil Map Unit Name: see remarks  |   |  | NWI classificat         | -                         |  |  |
| Are climatic / hydrologic conditions on the site                           | •   |  | <del></del>             | explain in Remarks.)      |  |  |
| Are Vegetation, Soil, or Hydro   | logysignificantly distu                       | rbed? Are "Normal Ci   | ircumstances" present?  | ? Yes X No                |  |  |
| Are Vegetation, Soil, or Hydro   | logynaturally problem                         | atic? (If needed, exp  | olain any answers in Re | emarks.)                  |  |  |
| SUMMARY OF FINDINGS – Attach   | site map showing sai                          | mpling point location  | ons, transects, im      | portant features, etc.    |  |  |
| Hydrophytic Vegetation Present?  | Yes X No                                      | Is the Sampled Area  |                         |                           |  |  |
| Hydric Soil Present?   | Yes X No                                      | within a Wetland?  | Yes X                   | No                        |  |  |
| Wetland Hydrology Present?   | Yes X No                                      |  |                         | <del></del>               |  |  |
| Remarks: PFO wetland Soils: Adler silt loam, 0 to 2 percent slopes, DP7-W5 | occasionally flooded; Memph                   | is silt loam, 12 to 20 perc  | ent slopes, severely er | roded, northern phase     |  |  |
| HYDROLOGY  |   |  |                         |                           |  |  |
| Wetland Hydrology Indicators:  |   |  | Secondary Indicators    | (minimum of two required) |  |  |
| Primary Indicators (minimum of one is requi                                | red; check all that apply)                    |  | Surface Soil Cracl      | ks (B6)                   |  |  |
| Surface Water (A1)   | Aquatic Fauna (B13)                           |  | Sparsely Vegetate       | ed Concave Surface (B8)   |  |  |
| High Water Table (A2)  | Marl Deposits (B15) (LF                       | -  | Drainage Patterns       |                           |  |  |
| Saturation (A3)  | Hydrogen Sulfide Odor                         | · · · ·  | Moss Trim Lines (B16)   |                           |  |  |
| Water Marks (B1)   |   | izospheres on Living Roots (C3) Dry-Season Water Table (C2)  |                         |                           |  |  |
| X Sediment Deposits (B2)   | Presence of Reduced Ir                        |  | X Crayfish Burrows (C8) |                           |  |  |
| X Drift Deposits (B3)  |   | uction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) ce (C7) Geomorphic Position (D2) |                         |                           |  |  |
| Algal Mat or Crust (B4) Iron Deposits (B5)                                 | Thin Muck Surface (C7) Other (Explain in Rema |  | Shallow Aquitard (      |                           |  |  |
| Inundation Visible on Aerial Imagery (B                                    |   | iko)   | FAC-Neutral Test        |                           |  |  |
| X Water-Stained Leaves (B9)  | • )   |  | Sphagnum Moss (         |                           |  |  |
| Field Observations:  |   |  |                         | (, (, -,                  |  |  |
| Surface Water Present? Yes   | No X Depth (inches)                           | : 0  |                         |                           |  |  |
| Water Table Present? Yes   | No X Depth (inches)                           |  |                         |                           |  |  |
| Saturation Present? Yes  | No X Depth (inches)                           |  | Hydrology Present?      | Yes X No                  |  |  |
| (includes capillary fringe)  | <u> </u>                                      |  |                         |                           |  |  |
| Describe Recorded Data (stream gauge, mo                                   | onitoring well, aerial photos, p              | revious inspections), if av  | /ailable:               |                           |  |  |
|  |   |  |                         |                           |  |  |
| Remarks:   |   |  |                         |                           |  |  |
|  |   |  |                         |                           |  |  |
|  |   |  |                         |                           |  |  |
|  |   |  |                         |                           |  |  |
|  |   |  |                         |                           |  |  |
|  |   |  |                         |                           |  |  |
|  |   |  |                         |                           |  |  |
|  |   |  |                         |                           |  |  |
|  |   |  |                         |                           |  |  |
|  |   |  |                         |                           |  |  |

| Tree Stratum (Plot size: 30 )                       | Absolute   | Dominant          | Indicator | Dominance Test worksheet                                |                      |      |
|---|------------|-------------------|-----------|---|----------------------|------|
| /   | % Cover    | Species?          | Status    | Dominance Test worksheet:                               |                      |      |
| Liriodendron tulipifera     Ulmus americana         | 10<br>20   | No Yes            | FACU      | Number of Dominant Species                              | 6 (4)                | `    |
|   | 5          | No No             | FAC       | That Are OBL, FACW, or FAC:                             | 6 (A)                | )    |
|   | 5          | No                | FACU      | Total Number of Dominant<br>Species Across All Strata:  | 7 (B)                | `    |
|   | 10         | No                | FAC       | <u> </u>  | 7 (B)                | ,    |
| 5. Quercus nigra                                    | 15         | Yes               | OBL       | Percent of Dominant Species That Are OBL, FACW, or FAC: | 85.7% (A/            | /D)  |
| 6. Salix nigra                                      |            | 1 65              | OBL       | Prevalence Index worksheet:                             | 85.7% (A/            | D)   |
| 7.  |            |                   |           |   | Multiply by:         |      |
| 8   | 65         | =Total Cover      |           |   | Multiply by:         |      |
| 50% of total cover: 3                               |            | of total cover:   | 13        | OBL species   |                      |      |
| Sapling/Shrub Stratum (Plot size: 30                | 00 20%     | o or total cover. |           | FAC species 75 x 3 =                                    |                      |      |
|   | )          | Voc               | FAC       |   |                      |      |
| 1. Ulmus americana                                  | 20         | Yes               | FAC       | · —   |                      |      |
| 2. Catalpa speciosa                                 | 10         | Yes               | FACU      | UPL species 0 x 5 =                                     |                      | (D)  |
| 3.  |            | · -               |           | Column Totals: 115 (A)  Prevalence Index = B/A =        | ,                    | (B)  |
| 4   |            |                   |           |   | 2.96                 |      |
| 5.  | -          | ·                 |           | Hydrophytic Vegetation Indicators                       |                      |      |
| 6.  |            |                   |           | 1 - Rapid Test for Hydrophytic \                        | /egetation           |      |
| 7.  |            |                   |           | X 2 - Dominance Test is >50%                            |                      |      |
| 8   |            |                   |           | X 3 - Prevalence Index is ≤3.0 <sup>1</sup>             | 1                    |      |
|   | 30         | =Total Cover      |           | Problematic Hydrophytic Vegeta                          | ation (Explain)      |      |
| <del></del>   | 15 20%     | of total cover:   | 6         |   |                      |      |
| Herb Stratum (Plot size: 30 )                       |            |                   |           |   |                      |      |
| 1. Microstegium vimineum                            | 10         | Yes               | FAC       | <sup>1</sup> Indicators of hydric soil and wetland      |                      | t be |
| 2. Persicaria virginiana                            | 5          | Yes               | FAC       | present, unless disturbed or problem                    |                      |      |
| 3. Toxicodendron radicans                           | 10         | Yes               | FAC       | Definitions of Four Vegetation Str                      | rata:                |      |
| 4   |            |                   |           | Tree – Woody plants, excluding vine                     | . ,                  | ,    |
| 5.  |            |                   |           | more in diameter at breast height (Dieght.              | JBH), regardless     | Of   |
| 6   |            |                   |           | lioigin.  |                      |      |
| 7.  |            |                   |           | Sapling/Shrub – Woody plants, exc                       | cluding vines, les   | SS   |
| 8.  |            |                   |           | than 3 in. DBH and greater than 3.2                     | 8 ft (1 m) tall.     |      |
| 9.  |            |                   |           |   |                      |      |
| 10  |            | ·                 |           | Herb – All herbaceous (non-woody)                       | plants, regardles    | ss   |
| 11.   |            |                   |           | of size, and woody plants less than                     |                      |      |
| 12  |            |                   |           |   |                      |      |
|   | 25         | =Total Cover      |           | <b>Woody Vine</b> – All woody vines greatheight.        | iter than 3.28 ft ir | n    |
|   | 13 20%     | of total cover:   | 5         | neignt.   |                      |      |
| Woody Vine Stratum (Plot size: 30 )                 |            |                   |           |   |                      |      |
| 1   |            |                   |           |   |                      |      |
| 2   |            |                   |           |   |                      |      |
| 3   |            |                   |           |   |                      |      |
| 4   |            | <u> </u>          |           |   |                      |      |
| 5   |            |                   |           | Hydrophytic   |                      |      |
|   |            | =Total Cover      |           | Vegetation  |                      |      |
| 50% of total cover:                                 | 20%        | of total cover:   |           | Present? Yes X N  | o                    |      |
| Remarks: (If observed, list morphological adaptatio | ns below.) |                   |           |   |                      |      |
|   |            |                   |           |   |                      |      |

SOIL Sampling Point: W005-W

| Profile Desc<br>Depth | cription: (Describe to Matrix                      | to the dep |                               | <b>ıment tl</b><br>x Featur |                   | ator or c        | onfirm the absence   | of indicators.)                             |  |  |
|-----------------------|--|------------|-------------------------------|-----------------------------|-------------------|------------------|--|---|--|--|
| (inches)              | Color (moist)                                      | %          | Color (moist)                 | %                           | Type <sup>1</sup> | Loc <sup>2</sup> | Texture  | Remarks                                     |  |  |
| 0-6                   | 10YR 5/1   | 95         | 10YR 4/6                      | 5                           | С                 | M                | Loamy/Clayey   | silty loam                                  |  |  |
| 6-20                  | 10YR 5/2   | 90         | 10YR 4/6                      | 10                          | С                 | M                | Loamy/Clayey   | silty loam                                  |  |  |
| 0 20                  | 10111 0/2  |            | 1011(1)0                      |                             |                   |                  | <u> </u>   | only loan                                   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
| ¹Type: C=Co           | oncentration, D=Depl                               | etion. RM: | =Reduced Matrix. N            | <br>//S=Mas                 | ked San           | d Grains.        | <sup>2</sup> Location:                                     | PL=Pore Lining, M=Matrix.                   |  |  |
| • •                   | Indicators: (Applica                               |            |                               |                             |                   |                  |  | for Problematic Hydric Soils <sup>3</sup> : |  |  |
| Histosol              | (A1)   |            | Thin Dark Su                  | urface (S                   | 9) <b>(LRR</b>    | R S, T, U)       | 1 cm M   | luck (A9) <b>(LRR O)</b>                    |  |  |
| Histic Ep             | oipedon (A2)                                       |            | Barrier Island                | ds 1 cm                     | Muck (S           | 312)             | 2 cm N   | luck (A10) <b>(LRR S)</b>                   |  |  |
| Black His             | ` '  |            | (MLRA 15                      | 3B, 153                     | D)                |                  | Coast  | Prairie Redox (A16)                         |  |  |
| Hydroge               | n Sulfide (A4)                                     |            | Loamy Muck                    | •                           | , , ,             | LRR O)           | (outs  | side MLRA 150A)                             |  |  |
| Stratified            | d Layers (A5)                                      |            | Loamy Gleye                   | ed Matri                    | x (F2)            |                  | Reduc  | ed Vertic (F18)                             |  |  |
|                       | Bodies (A6) (LRR P,                                |            | X Depleted Ma                 | trix (F3)                   | )                 |                  | •  | side MLRA 150A, 150B)                       |  |  |
|                       | ıcky Mineral (A7) <b>(LR</b>                       |            |                               |                             | ` '               |                  |  | ont Floodplain Soils (F19) (LRR P, T)       |  |  |
|                       | esence (A8) (LRR U)                                |            | Depleted Da                   |                             |                   |                  | Anomalous Bright Floodplain Soils (F20)                    |   |  |  |
|                       | ick (A9) (LRR P, T)                                | (4.44)     | Redox Depre                   |                             | (F8)              |                  | (MLRA 153B)  |   |  |  |
|                       | d Below Dark Surface                               | e (A11)    | Marl (F10) <b>(L</b>          |                             | 4) <b>(84)</b> D  | A 454\           | Red Parent Material (F21)  Very Shallow Dark Surface (F22) |   |  |  |
|                       | ark Surface (A12)<br>rairie Redox (A16) ( <b>M</b> | II DA 4504 | Depleted Oc                   | -                           |                   |                  |  |   |  |  |
|                       | lucky Mineral (S1) <b>(L</b>                       |            | A)Iron-Mangan<br>Umbric Surfa |                             |                   |                  |  | Islands Low Chroma Matrix (TS7)             |  |  |
|                       | Gleyed Matrix (S4)                                 | itit 0, 0, | Delta Ochric                  |                             |                   |                  | (MLRA 153B, 153D)  |   |  |  |
|                       | dedox (S5)   |            | Reduced Ve                    |                             |                   |                  |  | Explain in Remarks)                         |  |  |
|                       | Matrix (S6)  |            | Piedmont Flo                  | •                           | , ,               |                  |  | xpiaiir iii riemane)                        |  |  |
|                       | rface (S7) <b>(LRR P, S</b>                        | . T. U)    | Anomalous E                   | •                           | `                 | , ,              | •  |   |  |  |
|                       | e Below Surface (S8                                |            | (MLRA 14                      | _                           |                   |                  |  | tors of hydrophytic vegetation and          |  |  |
|                       | S, T, U)   | ,          | Very Shallow                  |                             |                   |                  | wetland hydrology must be present,                         |   |  |  |
|                       |  |            | (MLRA 13                      | 8, 152A                     | in FL, 1          | 154)             | unless disturbed or problematic.                           |   |  |  |
|                       | Layer (if observed):                               |            |                               |                             |                   |                  |  |   |  |  |
| Type:                 | Non  |            |                               |                             |                   |                  |  |   |  |  |
| Depth (ir             | nches):  | 0          |                               |                             |                   |                  | Hydric Soil Pres   | ent? Yes X No                               |  |  |
| Remarks:              |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |
|                       |  |            |                               |                             |                   |                  |  |   |  |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II  | City/County: Ripley/L                                   | Lauderdale Sampling Date: 9/20/2022                                |  |  |  |
|---|---|--|--|--|--|
| Applicant/Owner: Silicon Ranch Corporati                            | on  | State: TN Sampling Point: W005-UPL                                 |  |  |  |
| Investigator(s): Benjamin Burdette and Jake II                      | rvin Section, Township, Range                           |  |  |  |  |
| Landform (hillside, terrace, etc.): hillside                        | Local relief (concave, conve                            | ex, none): convex Slope (%): 2-5                                   |  |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA 13                             |   | : -89.512629 Datum: NAD83  |  |  |  |
|   | o 20 percent slopes, severely eroded, northern pha      | ·  |  |  |  |
| Are climatic / hydrologic conditions on the site                    | typical for this time of year? Yes X                    | No (If no, explain in Remarks.)                                    |  |  |  |
| Are Vegetation, Soil, or Hydrold                                    | · —   | al Circumstances" present? Yes X No                                |  |  |  |
| Are Vegetation, Soil, or Hydrold                                    |   | explain any answers in Remarks.)                                   |  |  |  |
| <u> </u>  |   | ations, transects, important features, etc.                        |  |  |  |
| Hydrophytic Vegetation Present?                                     | Yes No X Is the Sampled Area                            | a  |  |  |  |
|   | Yes No X within a Wetland?                              | Yes No_X_  |  |  |  |
|   | Yes No X  |  |  |  |  |
| Remarks:  | -   |  |  |  |  |
| Upland point corresponding to W5. In forest a                       | adjacent to agricultuiral field.                        |  |  |  |  |
| DP8-UP  |   |  |  |  |  |
|   |   |  |  |  |  |
|   |   |  |  |  |  |
|   |   |  |  |  |  |
| HYDROLOGY   |   |  |  |  |  |
| Wetland Hydrology Indicators:                                       |   | Secondary Indicators (minimum of two required)                     |  |  |  |
| Primary Indicators (minimum of one is require                       |   | Surface Soil Cracks (B6)   |  |  |  |
| Surface Water (A1)  | Aquatic Fauna (B13)                                     | Sparsely Vegetated Concave Surface (B8)                            |  |  |  |
| High Water Table (A2)   | Marl Deposits (B15) (LRR U)                             | Drainage Patterns (B10)  |  |  |  |
| Saturation (A3)   | Hydrogen Sulfide Odor (C1)                              | Moss Trim Lines (B16)  |  |  |  |
| Water Marks (B1)  | Oxidized Rhizospheres on Living Roots (C3)              | Dry-Season Water Table (C2)  |  |  |  |
| Sediment Deposits (B2)  | Presence of Reduced Iron (C4)                           | Crayfish Burrows (C8)  |  |  |  |
| Drift Deposits (B3)   | Recent Iron Reduction in Tilled Soils (C6)              | Saturation Visible on Aerial Imagery (C9) Geomorphic Position (D2) |  |  |  |
| Algal Mat or Crust (B4)   | Thin Muck Surface (C7)                                  |  |  |  |  |
| Iron Deposits (B5)  | Other (Explain in Remarks)                              | Shallow Aquitard (D3)  |  |  |  |
| Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) |   | FAC-Neutral Test (D5) Sphagnum Moss (D8) (LRR T, U)                |  |  |  |
|   | <del></del>   | Spriagrium woss (Do) (Link 1, 0)                                   |  |  |  |
| Field Observations: Surface Water Present? Yes                      | No X Depth (inches): 0                                  |  |  |  |  |
| <del></del>   | No X Depth (inches): 0                                  |  |  |  |  |
|   |   | nd Hydrology Present? Yes No X                                     |  |  |  |
| (includes capillary fringe)   | TVO X Deput (money).                                    | 10 10 10 10 10 10 10 10 10 10                                      |  |  |  |
|   | nitoring well, aerial photos, previous inspections), if | <br>if available:  |  |  |  |
|   | ,                 | . 4.4.142.12   |  |  |  |
|   |   |  |  |  |  |
| Remarks:  |   |  |  |  |  |
| No hydrology  |   |  |  |  |  |
|   |   |  |  |  |  |
|   |   |  |  |  |  |
|   |   |  |  |  |  |
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|   |   |  |  |  |  |
|   |   |  |  |  |  |
|   |   |  |  |  |  |

| Ulmus americana Carya tomentosa Juglans nigra      |            | Yes Yes Yes                     | FAC<br>UPL<br>UPL | Number of Dominant Species That Are OBL, FACW, or FAC:  1 (A)  Total Number of Dominant Species Across All Strata: 7 (B)  Percent of Dominant Species |
|--|------------|---------------------------------|-------------------|---|
| Juglans nigra                                      | 10         |                                 |                   | That Are OBL, FACW, or FAC: 1 (A)  Total Number of Dominant Species Across All Strata: 7 (B)  Percent of Dominant Species                             |
|  | 45         | Yes                             | UPL               | Species Across All Strata: 7 (B)  Percent of Dominant Species   |
|  |            |                                 |                   | Percent of Dominant Species   |
|  |            | <u> </u>                        |                   | · ·   |
|  |            |                                 |                   | That Ama ODL EAGNAL EAGN 44 00/ /1/5  |
|  |            |                                 |                   | That Are OBL, FACW, or FAC: 14.3% (A/B  |
|  |            |                                 |                   | Prevalence Index worksheet:   |
| 50% of total account                               |            |                                 |                   | Total % Cover of: Multiply by:  |
| F00/ - f + - t - 1 0                               | 3 200/     | =Total Cover                    |                   | OBL species0 x 1 =0   |
| 50% of total cover: 2                              | 20%        | of total cover:                 | 9                 | FACW species 0 x 2 = 0  |
| apling/Shrub Stratum (Plot size: 30 )              |            |                                 |                   | FAC species 15 x 3 = 45   |
| Catalpa speciosa                                   | 5          | Yes                             | FACU              | FACU species 10 x 4 = 40  |
|  |            |                                 |                   | UPL species 30 x 5 = 150  |
|  |            |                                 |                   | Column Totals: 55 (A) 235 (B  |
|  |            |                                 |                   | Prevalence Index = B/A = 4.27   |
|  |            |                                 |                   | Hydrophytic Vegetation Indicators:  |
|  |            |                                 |                   | 1 - Rapid Test for Hydrophytic Vegetation   |
|  |            |                                 |                   | 2 - Dominance Test is >50%  |
|  |            |                                 |                   | 3 - Prevalence Index is ≤3.0 <sup>1</sup>   |
|  | 5 :        | =Total Cover                    |                   | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)   |
| Persicaria virginiana Smilax spp.                  | <u>5</u>   | Yes<br>Yes                      |                   | <sup>1</sup> Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.   |
| Parthenocissus quinquefolia                        | 5          | Yes                             | FACU              | Definitions of Four Vegetation Strata:  |
|  |            |                                 |                   | <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) of more in diameter at breast height (DBH), regardless of height.                         |
|  |            |                                 |                   | Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.   |
|  |            |                                 |                   | <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.   |
| 50% of total cover:                                |            | =Total Cover<br>of total cover: | 3                 | <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.   |
| Woody Vine Stratum (Plot size: 30 )                |            |                                 |                   |   |
|  |            |                                 |                   |   |
|  |            |                                 |                   |   |
|  |            |                                 |                   |   |
|  |            |                                 |                   | Hydrophytic   |
|  | :          | =Total Cover                    |                   | Vegetation  |
| 50% of total cover:                                | 20%        | of total cover:                 |                   | Present? Yes No X   |
| marks: (If observed, list morphological adaptation | ns below.) |                                 |                   |   |
|  |            |                                 |                   |   |

SOIL Sampling Point: W005-UPL

|                         | ription: (Describe t                                | o the depti  |                      |           |  | ator or co       | onfirm the a | absence o  | of indica  | itors.)       |                  |         |
|-------------------------|---|--------------|----------------------|-----------|--|------------------|--------------|------------|------------|---------------|------------------|---------|
| Depth                   | Matrix  |              |                      | Featu     |  | . 2              |              |            |            | _             |                  |         |
| (inches)                | Color (moist)                                       | %            | Color (moist)        | <u>%</u>  | Type <sup>1</sup>  | Loc <sup>2</sup> | Texture      |            | Remarks    |               |                  |         |
| 0-20                    | 10YR 6/3  | 100          |                      |           |  |                  | Loamy/C      | Clayey     |            | silty         | loam             |         |
|                         |   |              | <u> </u>             |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            | -          |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
| <sup>1</sup> Type: C=Co | oncentration, D=Depl                                | etion RM=    | Reduced Matrix M     |           | ked San  | d Grains         | 2            | ocation: F | PI =Pore   | Lining, M=I   | Matrix           |         |
| • •                     | ndicators: (Applica                                 |              |                      |           |  | u Grains.        |              |            |            | lematic Hy    |                  | 3.      |
| Histosol                |   | DIC to all E | Thin Dark Su         |           |  | S. T. U)         |              |            |            | (LRR O)       | uno com          |         |
|                         | ipedon (A2)   |              | Barrier Island       |           |  |                  | _            |            |            | (LRR S)       |                  |         |
| Black His               | . , ,   |              | (MLRA 15             |           | •  | ,                | _            |            |            | edox (A16)    |                  |         |
|                         | n Sulfide (A4)                                      |              | Loamy Muck           |           |  | RR O)            | _            | _          |            | RA 150A)      |                  |         |
|                         | Layers (A5)   |              | Loamy Gleye          |           |  | ,                |              | Reduce     | d Vertic   | (F18)         |                  |         |
| Organic                 | Bodies (A6) (LRR P,                                 | T, U)        | Depleted Mat         | trix (F3) | )  |                  |              | (outs      | ide MLR    | A 150A, 15    | 60B)             |         |
| 5 cm Mu                 | cky Mineral (A7) (LR                                | R P, T, U)   | Redox Dark S         | Surface   | (F6)   |                  |              | Piedmo     | nt Flood   | plain Soils ( | (F19) <b>(LR</b> | R P, T) |
| Muck Pre                | esence (A8) (LRR U)                                 |              | Depleted Dar         | k Surfa   | ice (F7)   |                  | _            | Anomal     | ous Brig   | ht Floodpla   | in Soils (F      | 20)     |
| 1 cm Mu                 | ck (A9) (LRR P, T)                                  |              | Redox Depre          | ssions    | (F8)   |                  |              | (MLR       | A 153B)    |               |                  |         |
| Depleted                | l Below Dark Surface                                | (A11)        | Marl (F10) <b>(L</b> | RR U)     |  |                  | _            | Red Pa     | rent Mat   | erial (F21)   |                  |         |
|                         | rk Surface (A12)                                    |              | Depleted Och         |           |  |                  | _            | _ ′        |            | ark Surface   | ` '              |         |
|                         | airie Redox (A16) ( <b>M</b>                        | •            |                      |           |  |                  | O, P, T)     |            |            | A 138, 152    |                  | •       |
|                         | ucky Mineral (S1) (L                                | RR O, S)     | Umbric Surfa         |           |  |                  | _            |            |            | ow Chroma     | a Matrix (       | ΓS7)    |
|                         | leyed Matrix (S4)                                   |              | Delta Ochric         |           |  |                  | 50D\         | •          | A 153B,    | ,             |                  |         |
|                         | edox (S5)   |              | Reduced Ver          | •         | , ,  |                  | · —          | _Other (I  | =xplain ii | n Remarks)    |                  |         |
|                         | Matrix (S6)   | T 11\        | Piedmont Flo         |           | -  |                  |              |            |            |               |                  |         |
|                         | face (S7) <b>(LRR P, S,</b><br>e Below Surface (S8) |              | Anomalous B          | -         |  |                  | 20)          | 3Indicate  | ore of hy  | drophytic v   | egetation        | and     |
|                         | e Below Surface (So <sub>)</sub><br>S, T, U)        | ,            | Very Shallow         |           | <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, |                  |              |            |            |               |                  |         |
| (=::::                  | 5, ., 5,  |              | (MLRA 138            | •         | unless disturbed or problematic.   |                  |              |            |            | •,            |                  |         |
| Restrictive L           | _aver (if observed):                                |              | •                    |           | ,  |                  |              |            |            | '             |                  |         |
| Type:                   | Non   | е            |                      |           |  |                  |              |            |            |               |                  |         |
| Depth (ir               | nches):   | 0            |                      |           |  |                  | Hydric S     | Soil Prese | nt?        | Yes           | No               | X       |
| Remarks:                |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         | il color: 10YR 5/2 5%                               | silty loam   |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
|                         |   |              |                      |           |  |                  |              |            |            |               |                  |         |
| l .                     |   |              |                      |           |  |                  |              |            |            |               |                  |         |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                       |                                       | City/County: Ripley/Lau     | ıderdale                | Sampling Date: 9/21/22    |
|--|---------------------------------------|-----------------------------|-------------------------|---------------------------|
| Applicant/Owner: Silicon Ranch Corpora           | ation                                 | <u> </u>                    | State: TN               | Sampling Point: W006-W    |
| Investigator(s): Benjamin Burdette and Jake      | Irven Sec                             | ction, Township, Range:     |                         |                           |
| Landform (hillside, terrace, etc.): terrace      |                                       | relief (concave, convex, r  | none): concave          | Slope (%): 0-2            |
| Subregion (LRR or MLRA): LRR P, MLRA 1           |                                       | •                           | 9.520187                | Datum: NAD83              |
| Soil Map Unit Name: Memphis silt loam, 8 to      | · · · · · · · · · · · · · · · · · · · |                             |                         |                           |
| Are climatic / hydrologic conditions on the site | e typical for this time of year?      | Yes X                       | No (If no, e            | explain in Remarks.)      |
| Are Vegetation X, Soil , or Hydro                | ology significantly distur            |                             | ircumstances" present?  |                           |
| Are Vegetation, Soil, or Hydro                   |                                       |                             | olain any answers in Re | <del></del>               |
| SUMMARY OF FINDINGS – Attach                     |                                       |                             | -                       |                           |
| Hydrophytic Vegetation Present?                  | Yes X No                              | Is the Sampled Area         |                         |                           |
| Hydric Soil Present?                             | Yes X No                              | within a Wetland?           | Yes X                   | No                        |
| Wetland Hydrology Present?                       | Yes X No                              |                             |                         |                           |
| Remarks:   |                                       |                             |                         |                           |
| PEM wetland in corn field; has riser             |                                       |                             |                         |                           |
| DP9-W6   |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |
| HYDROLOGY  |                                       |                             |                         |                           |
| Wetland Hydrology Indicators:                    |                                       |                             | Secondary Indicators    | (minimum of two required) |
| Primary Indicators (minimum of one is require    | red; check all that apply)            |                             | Surface Soil Crack      |                           |
| Surface Water (A1)                               | Aquatic Fauna (B13)                   |                             |                         | ed Concave Surface (B8)   |
| High Water Table (A2)                            | Marl Deposits (B15) (LR               | ≀R U)                       | X Drainage Patterns     |                           |
| Saturation (A3)                                  | Hydrogen Sulfide Odor (               | •                           | Moss Trim Lines (       |                           |
| Water Marks (B1)                                 | Oxidized Rhizospheres                 | •                           | Dry-Season Wate         |                           |
| X Sediment Deposits (B2)                         | Presence of Reduced Iro               | - · · · ·                   | Crayfish Burrows        |                           |
| Drift Deposits (B3)                              | Recent Iron Reduction in              | n Tilled Soils (C6)         |                         | on Aerial Imagery (C9)    |
| Algal Mat or Crust (B4)                          | Thin Muck Surface (C7)                | )                           | Geomorphic Posit        | tion (D2)                 |
| Iron Deposits (B5)                               | Other (Explain in Remar               | rks)                        | Shallow Aquitard (      | (D3)                      |
| Inundation Visible on Aerial Imagery (B7         | 7)                                    |                             | FAC-Neutral Test        | (D5)                      |
| Water-Stained Leaves (B9)                        |                                       |                             | Sphagnum Moss (         | (D8) <b>(LRR T, U)</b>    |
| Field Observations:                              |                                       |                             |                         |                           |
| Surface Water Present? Yes                       | No X Depth (inches):                  |                             |                         |                           |
| Water Table Present? Yes                         | No X Depth (inches):                  |                             |                         |                           |
| Saturation Present? Yes                          | No X Depth (inches):                  | : 0 Wetland H               | Hydrology Present?      | Yes X No                  |
| (includes capillary fringe)                      |                                       |                             |                         |                           |
| Describe Recorded Data (stream gauge, mo         | onitoring well, aerial photos, pr     | revious inspections), if av | /ailable:               |                           |
|  |                                       |                             |                         |                           |
| Remarks:   |                                       |                             |                         |                           |
| Nemarks.   |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |
|  |                                       |                             |                         |                           |

|  | Absolute      | Dominant        | Indicator | T   |
|--|---------------|-----------------|-----------|---|
| <u>Free Stratum</u> (Plot size:30)                   | % Cover       | Species?        | Status    | Dominance Test worksheet:   |
| 1  |               |                 |           | Number of Dominant Species  |
| 2  |               |                 |           | That Are OBL, FACW, or FAC:0 (A)  |
| 3  |               |                 |           | Total Number of Dominant  |
| 4  |               |                 |           | Species Across All Strata: 1 (B)  |
| 5  |               |                 |           | Percent of Dominant Species   |
| 6  |               |                 |           | That Are OBL, FACW, or FAC: 0.0% (A/B)  |
| 7  |               |                 |           | Prevalence Index worksheet:   |
| 8  |               |                 |           | Total % Cover of: Multiply by:  |
|  |               | =Total Cover    |           | OBL species 0 x 1 = 0   |
| 50% of total cover:                                  | 20%           | of total cover: |           | FACW species 0 x 2 = 0  |
| Sapling/Shrub Stratum (Plot size: 30 )               | <del></del> ) |                 |           | FAC species 0 x 3 = 0   |
| 1  |               |                 |           | FACU species 0 x 4 = 0  |
| 2.   |               |                 |           | UPL species 5 x 5 = 25  |
| 3.   |               |                 |           | Column Totals: 5 (A) 25 (B)   |
| 4.   |               |                 |           | Prevalence Index = B/A = 5.00   |
| 5.   |               |                 |           | Hydrophytic Vegetation Indicators:  |
| 6.   |               |                 |           | 1 - Rapid Test for Hydrophytic Vegetation   |
| 7.   |               |                 |           | 2 - Dominance Test is >50%  |
| 8.   |               |                 |           | 3 - Prevalence Index is ≤3.0¹   |
| o  |               | =Total Cover    |           | X Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)   |
| 50% of total cover:                                  |               | of total cover: |           | Problematic Hydrophytic vegetation (Explain)  |
|  |               | Of total cover. |           |   |
| Herb Stratum (Plot size: 30 )                        | _             | V- 5            | UDI       |   |
| 1. Panicum miliaceum                                 | 5             | Yes             | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be                                    |
| 2.   |               |                 |           | present, unless disturbed or problematic.   |
| 3  |               |                 |           | Definitions of Four Vegetation Strata:  |
| 4  |               |                 |           | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or   |
| 5  |               |                 |           | more in diameter at breast height (DBH), regardless of  |
| 6.   |               |                 |           | height.   |
| 7.   |               |                 |           | 2 Provide Washington overlyding vines less  |
| 8.   |               |                 |           | Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. |
| 9.   |               |                 | _         | than 5 m. DDirana greater than 5.25 m (1 m) tail.   |
| 10.  |               |                 |           |   |
| 11.  |               |                 |           | Herb – All herbaceous (non-woody) plants, regardless  |
| 12.  |               |                 |           | of size, and woody plants less than 3.28 ft tall.   |
|  | 5             | =Total Cover    |           | Woody Vine – All woody vines greater than 3.28 ft in  |
| 50% of total cover:                                  |               | of total cover: | 1         | height.   |
| Woody Vine Stratum (Plot size: 30 )                  | 20,0          | Oi total oover. |           | 3   |
|  |               |                 |           |   |
| 1  |               |                 |           |   |
| 2  |               |                 |           |   |
| 3.   |               |                 |           |   |
| 4  |               |                 |           |   |
| 5  |               |                 |           | Hydrophytic   |
|  | :             | =Total Cover    |           | Vegetation  |
| 50% of total cover:                                  | 20%           | of total cover: |           | Present? Yes X No No  |
| Remarks: (If observed, list morphological adaptation | ns below.)    |                 |           |   |
| Heavily disturbed vegetation                         |               |                 |           |   |
| , ,  |               |                 |           |   |

SOIL Sampling Point: W006-W

| Profile Desc            | ription: (Describe t          | o the dept   | h needed to docu     | ment tl         | he indica         | ator or co       | onfirm the abs  | ence of indicators.)                              |  |  |  |
|-------------------------|-------------------------------|--------------|----------------------|-----------------|-------------------|------------------|---|---|--|--|--|
| Depth                   | Matrix                        |              | Redox                | ι Featur        |                   |                  |   |   |  |  |  |
| (inches)                | Color (moist)                 | %            | Color (moist)        | %               | Type <sup>1</sup> | Loc <sup>2</sup> | Texture   | Remarks   |  |  |  |
| 0-2                     | 10YR 5/2                      | 90           | 10YR 4/6             | 10              | <u>C</u>          | M                | Loamy/Clay  | ey silty loam                                     |  |  |  |
| 2-18                    | 10YR 5/3                      | 90           | 10YR 4/4             | 10              | С                 | M                | Loamy/Clay  | ey silty loam                                     |  |  |  |
| 18-20                   | 10YR 5/1                      | 85           | 10YR 4/6             | 15              | <u>C</u>          | <u>M</u>         | Loamy/Clay  | ey silty loam                                     |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
| <sup>1</sup> Type: C=Co | ncentration, D=Deple          | etion, RM=   | Reduced Matrix, M    | 1S=Mas          | ked San           | d Grains.        | <sup>2</sup> Loca                                     | tion: PL=Pore Lining, M=Matrix.                   |  |  |  |
| -                       | ndicators: (Applical          | ole to all L |                      |                 |                   |                  |   | ators for Problematic Hydric Soils <sup>3</sup> : |  |  |  |
| Histosol                |                               |              | Thin Dark Su         | -               |                   |                  |   | cm Muck (A9) (LRR O)                              |  |  |  |
| Histic Ep               | ipedon (A2)                   |              | Barrier Island       | ds 1 cm         | Muck (S           | 12)              | 2   | cm Muck (A10) <b>(LRR S)</b>                      |  |  |  |
| Black His               |                               |              | (MLRA 15             | 3B, 153         | D)                |                  |   | Coast Prairie Redox (A16)                         |  |  |  |
| Hydrogei                | n Sulfide (A4)                |              | Loamy Muck           | y Miner         | al (F1) <b>(L</b> | RR O)            |   | (outside MLRA 150A)                               |  |  |  |
| Stratified              | Layers (A5)                   |              | Loamy Gleye          | ed Matri        | x (F2)            |                  | F   | Reduced Vertic (F18)                              |  |  |  |
| Organic I               | Bodies (A6) (LRR P,           | T, U)        | X Depleted Ma        | trix (F3)       | )                 |                  |   | (outside MLRA 150A, 150B)                         |  |  |  |
| 5 cm Mu                 | cky Mineral (A7) <b>(LR</b> I | R P, T, U)   | Redox Dark           | Surface         | (F6)              |                  | F   | Piedmont Floodplain Soils (F19) (LRR P, T)        |  |  |  |
| Muck Pre                | esence (A8) (LRR U)           |              | Depleted Dar         | rk Surfa        | ce (F7)           |                  | Anomalous Bright Floodplain Soils (F20)               |   |  |  |  |
| 1 cm Mu                 | ck (A9) (LRR P, T)            |              | Redox Depre          | essions         | (F8)              |                  | (MLRA 153B)   |   |  |  |  |
| Depleted                | Below Dark Surface            | (A11)        | Marl (F10) <b>(L</b> | .RR U)          |                   |                  | Red Parent Material (F21)                             |   |  |  |  |
| Thick Da                | rk Surface (A12)              |              | Depleted Ocl         | hric (F1        | 1) <b>(MLR</b>    | A 151)           | Very Shallow Dark Surface (F22)                       |   |  |  |  |
| Coast Pr                | airie Redox (A16) ( <b>M</b>  | LRA 150A)    | ) Iron-Mangan        | ese Ma          | sses (F1          | 2) <b>(LRR (</b> | O, P, T) (outside MLRA 138, 152A in FL, 154)          |   |  |  |  |
| Sandy M                 | ucky Mineral (S1) <b>(Lf</b>  | RR O, S)     | Umbric Surfa         | ice (F13        | 3) (LRR F         | P, T, U)         | Barrier Islands Low Chroma Matrix (TS7)               |   |  |  |  |
| Sandy G                 | leyed Matrix (S4)             |              | Delta Ochric         | (F17) <b>(I</b> | VILRA 15          | 51)              | (MLRA 153B, 153D)                                     |   |  |  |  |
| Sandy R                 | edox (S5)                     |              | Reduced Ver          | tic (F18        | ) (MLRA           | 150A, 1          | Other (Explain in Remarks)                            |   |  |  |  |
| Stripped                | Matrix (S6)                   |              | Piedmont Flo         | odplain         | Soils (F          | 19) <b>(MLR</b>  | A 149A)   |   |  |  |  |
| Dark Sur                | face (S7) (LRR P, S,          | T, U)        | Anomalous E          | Bright Fl       | oodplain          | Soils (F2        | (0)   |   |  |  |  |
| Polyvalue               | e Below Surface (S8)          |              | (MLRA 14             | 9A, 153         | C, 153D           | )                | <sup>3</sup> Indicators of hydrophytic vegetation and |   |  |  |  |
|                         | S, T, U)                      |              | Very Shallow         |                 |                   |                  | wetland hydrology must be present,                    |   |  |  |  |
| ,                       | ,                             |              | (MLRA 13             |                 |                   |                  | unless disturbed or problematic.                      |   |  |  |  |
| Restrictive L           | .ayer (if observed):          |              |                      |                 |                   |                  |   | ·   |  |  |  |
| Type:                   | None                          | Э            |                      |                 |                   |                  |   |   |  |  |  |
| Depth (in               | ches):                        | 0            |                      |                 |                   |                  | Hydric Soil   | Present?  |  |  |  |
| Remarks:                |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |
|                         |                               |              |                      |                 |                   |                  |   |   |  |  |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                   |                                    | City/County: Ripley/La        | uderdale                                      | Sampling Date: 9/21/2022  |  |  |  |
|--|------------------------------------|-------------------------------|---|---------------------------|--|--|--|
| Applicant/Owner: Silicon Ranch Corpo         | oration                            | _                             | State: TN                                     | Sampling Point: W006-UPL  |  |  |  |
| Investigator(s): Benjamin Burdette and Jal   | ke Irvin S                         | Section, Township, Range:     |   | _                         |  |  |  |
| Landform (hillside, terrace, etc.): hillside |                                    | al relief (concave, convex,   |   | Slope (%): 2-5            |  |  |  |
|  |                                    | •                             | •   |                           |  |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA         |                                    |                               | 89.520186                                     |                           |  |  |  |
| Soil Map Unit Name: Memphis silt loam, 8     | to 12 percent slopes, severe       |                               |   |                           |  |  |  |
| Are climatic / hydrologic conditions on the  | site typical for this time of year | r? Yes X                      | No (If no,                                    | explain in Remarks.)      |  |  |  |
| Are Vegetation X, Soil , or Hyd              | Irology significantly dist         | turbed? Are "Normal C         | Circumstances" present                        | t? Yes X No               |  |  |  |
| Are Vegetation, Soil, or Hyd                 | Irology naturally proble           | matic? (If needed, ex         | plain any answers in R                        | lemarks.)                 |  |  |  |
| SUMMARY OF FINDINGS - Attac                  | ch site map showing s              | ampling point locati          | ons, transects, in                            | nportant features, etc.   |  |  |  |
| Hydrophytic Vegetation Present?              | Yes No X                           | Is the Sampled Area           |   |                           |  |  |  |
| Hydric Soil Present?                         | Yes No X                           | within a Wetland?             | Yes   | No X                      |  |  |  |
| Wetland Hydrology Present?                   | Yes No X                           |                               |   |                           |  |  |  |
| DP10-UP                                      |                                    |                               |   |                           |  |  |  |
| HYDROLOGY                                    |                                    |                               |   |                           |  |  |  |
| Wetland Hydrology Indicators:                |                                    |                               |   | (minimum of two required) |  |  |  |
| Primary Indicators (minimum of one is req    |                                    |                               | Surface Soil Cracks (B6)                      |                           |  |  |  |
| Surface Water (A1)                           | Aquatic Fauna (B13)                | L DD 11)                      | Sparsely Vegetated Concave Surface (B8)       |                           |  |  |  |
| ——High Water Table (A2) Saturation (A3)      | Marl Deposits (B15) (I             |                               | Drainage Patterns (B10) Moss Trim Lines (B16) |                           |  |  |  |
| Water Marks (B1)                             | Hydrogen Sulfide Odd               | es on Living Roots (C3)       | Dry-Season Water Table (C2)                   |                           |  |  |  |
| Sediment Deposits (B2)                       | Presence of Reduced                | = : :                         | Crayfish Burrows (C8)                         |                           |  |  |  |
| Drift Deposits (B3)                          | Recent Iron Reduction              | ·                             | Saturation Visible on Aerial Imagery (C9)     |                           |  |  |  |
| Algal Mat or Crust (B4)                      | Thin Muck Surface (C               |                               | Geomorphic Position (D2)                      |                           |  |  |  |
| Iron Deposits (B5)                           | Other (Explain in Rem              |                               | Shallow Aquitard (D3)                         |                           |  |  |  |
| Inundation Visible on Aerial Imagery (       |                                    | ,                             | FAC-Neutral Test (D5)                         |                           |  |  |  |
| Water-Stained Leaves (B9)                    |                                    |                               | Sphagnum Moss                                 | (D8) <b>(LRR T, U)</b>    |  |  |  |
| Field Observations:                          |                                    |                               |   |                           |  |  |  |
| Surface Water Present? Yes                   | No X Depth (inches                 | s):0                          |   |                           |  |  |  |
| Water Table Present? Yes                     | No X Depth (inches                 | s): 0                         |   |                           |  |  |  |
| Saturation Present? Yes                      | No X Depth (inches                 | s): 0 Wetland                 | Hydrology Present?                            | Yes No _X                 |  |  |  |
| (includes capillary fringe)                  |                                    |                               |   |                           |  |  |  |
| Describe Recorded Data (stream gauge, I      | monitoring well, aerial photos,    | , previous inspections), if a | vailable:                                     |                           |  |  |  |
| Remarks:                                     |                                    |                               |   |                           |  |  |  |
| No hydrology                                 |                                    |                               |   |                           |  |  |  |
|  |                                    |                               |   |                           |  |  |  |
|  |                                    |                               |   |                           |  |  |  |
|  |                                    |                               |   |                           |  |  |  |
|  |                                    |                               |   |                           |  |  |  |
|  |                                    |                               |   |                           |  |  |  |
|  |                                    |                               |   |                           |  |  |  |
|  |                                    |                               |   |                           |  |  |  |
|  |                                    |                               |   |                           |  |  |  |

# **VEGETATION (Four Strata)** – Use scientific names of plants.

| Sampling Point:    | W006-UPL |
|--------------------|----------|
| diripining i onit. |          |
|                    |          |

| Tree Stratum (Plot size: 30 )                        |             | minant Indicator<br>ecies? Status | Dominance Test worksheet:  |
|--|-------------|-----------------------------------|--|
| 1.<br>2.   |             |                                   | Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)   |
| 3.<br>4.   |             |                                   | Total Number of Dominant Species Across All Strata: 1 (B)  |
| 5.   |             |                                   | Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)   |
| 7  |             |                                   | Prevalence Index worksheet:  |
| 8.   |             |                                   | Total % Cover of: Multiply by:   |
| ·  |             | al Cover                          | OBL species 0 x 1 = 0  |
| 50% of total cover:                                  | 20% of to   |                                   | FACW species 0 x 2 = 0   |
|  | 20 % 01 10  |                                   |  |
| Sapling/Shrub Stratum (Plot size: 30 )               |             |                                   |  |
| 1  |             |                                   | FACU species 0 x 4 = 0   |
| 2.   |             |                                   | UPL species0 x 5 =0  |
| 3.   |             |                                   | Column Totals: 0 (A) 0 (B)   |
| 4  |             |                                   | Prevalence Index = B/A =   |
| 5.   |             |                                   | Hydrophytic Vegetation Indicators:   |
| 6.   |             |                                   | 1 - Rapid Test for Hydrophytic Vegetation  |
| 7.   |             |                                   | 2 - Dominance Test is >50%   |
| 8.   |             |                                   | 3 - Prevalence Index is ≤3.0 <sup>1</sup>  |
|  | =Tota       | al Cover                          | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 50% of total cover:                                  | 20% of to   |                                   | resistant rydrophyno vogotation (Explain)  |
|  | 20 /0 01 10 | Lai covei.                        |  |
|  | 05          | V.                                |  |
| 1. Zea mays  | 95          | <u>Yes</u>                        | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be   |
| 2  |             |                                   | present, unless disturbed or problematic.  |
| 3.   |             |                                   | Definitions of Four Vegetation Strata:   |
| 4  |             |                                   | <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or   |
| 5  |             |                                   | more in diameter at breast height (DBH), regardless of   |
| 6  |             |                                   | height.  |
| 7.   |             |                                   | One the miles who will not a south after a size of the |
| 8.   |             |                                   | Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  |
| 9.   |             |                                   | than 3 in. DBH and greater than 3.20 it (1 in) tail.   |
| 10.  |             |                                   |  |
|  |             |                                   | Herb – All herbaceous (non-woody) plants, regardless   |
| 12.  |             |                                   | of size, and woody plants less than 3.28 ft tall.  |
| 12.  | 95 =Tota    | al Cover                          | Mandy Vine All woody vines greater than 2.29 ft in   |
| 500/ of total account 40                             |             |                                   | <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.  |
| 50% of total cover: 48                               | 20% of to   | tal cover:19                      | noight.  |
| Woody Vine Stratum (Plot size: 30 )                  |             |                                   |  |
| 1  |             |                                   |  |
| 2  |             |                                   |  |
| 3.   |             |                                   |  |
| 4.   |             |                                   |  |
| 5.   |             |                                   | Usalanahsain   |
|  | =Tota       | l Cover                           | Hydrophytic<br>Vegetation  |
| 50% of total cover:                                  | 20% of to   | tal cover:                        | Present? Yes No X  |
|  |             |                                   |  |
| Remarks: (If observed, list morphological adaptation | s pelow.)   |                                   |  |
|  |             |                                   |  |
|  |             |                                   |  |
|  |             |                                   |  |
|  |             |                                   |  |
|  |             |                                   |  |

SOIL Sampling Point: W006-UPL

| Profile Desc<br>Depth | cription: (Describe to<br>Matrix          | o the dep    |                                  | <b>ıment tl</b><br>k Featur |                   | ator or co       | onfirm the absenc | e of indic | ators.)                       |                         |
|-----------------------|---|--------------|----------------------------------|-----------------------------|-------------------|------------------|-------------------|------------|-------------------------------|-------------------------|
| (inches)              | Color (moist)                             | %            | Color (moist)                    | %                           | Type <sup>1</sup> | Loc <sup>2</sup> | Texture           |            | Ren                           | narks                   |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
| 0-20                  | 10YR 5/3                                  | 95           | 10YR 5/4                         | 5                           | <u>C</u>          | <u>M</u>         | Loamy/Clayey      |            | Siity                         | loam                    |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   | _          |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   | _          |                               |                         |
|                       |   |              | _                                |                             |                   |                  |                   |            |                               | _                       |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       | oncentration, D=Deple                     |              |                                  |                             |                   | d Grains.        |                   |            | e Lining, M=                  |                         |
| -                     | Indicators: (Applical                     | ble to all L |                                  |                             |                   |                  |                   |            | -                             | dric Soils³:            |
| Histosol              |   |              | Thin Dark Su                     | -                           |                   |                  |                   |            | ) (LRR O)                     |                         |
|                       | pipedon (A2)                              |              | Barrier Island                   |                             |                   | 12)              |                   |            | 0) <b>(LRR S)</b>             |                         |
| Black Hi              | ` '                                       |              | (MLRA 15                         |                             |                   |                  |                   |            | Redox (A16)                   |                         |
|                       | n Sulfide (A4)                            |              | Loamy Muck                       | -                           |                   | .RR O)           | •                 |            | RA 150A)                      |                         |
|                       | Layers (A5)                               |              | Loamy Gleye                      |                             |                   |                  |                   | ced Verti  | ` '                           |                         |
|                       | Bodies (A6) (LRR P,                       |              | Depleted Ma                      | , ,                         |                   |                  | `                 |            | RA 150A, 1                    | ,                       |
|                       | icky Mineral (A7) (LR                     |              | Redox Dark                       |                             | ` '               |                  |                   |            |                               | (F19) <b>(LRR P, T)</b> |
|                       | esence (A8) (LRR U)                       |              | Depleted Da                      |                             |                   |                  |                   |            | -                             | in Soils (F20)          |
|                       | ck (A9) (LRR P, T)                        | (111)        | Redox Depre                      |                             | (ГО)              |                  | •                 | RA 153E    | •                             |                         |
|                       | d Below Dark Surface<br>ark Surface (A12) | (A11)        | Marl (F10) <b>(L</b> Depleted Oc |                             | 1) /MI D          | ۸ ۱۶۱۱           |                   |            | aterial (F21)<br>Dark Surface | (E22)                   |
|                       | rairie Redox (A16) ( <b>M</b>             | I DA 150A    |                                  |                             |                   |                  |                   |            |                               | ?A in FL, 154)          |
|                       | lucky Mineral (S1) <b>(LI</b>             |              | Umbric Surfa                     |                             | -                 |                  |                   |            |                               | a Matrix (TS7)          |
|                       | Bleyed Matrix (S4)                        | (ii ( 0, 0)  | Delta Ochric                     | -                           |                   |                  |                   | -RA 153E   |                               | a Matrix (101)          |
|                       | ledox (S5)                                |              | Reduced Ver                      |                             |                   |                  | •                 |            | in Remarks                    | )                       |
|                       | Matrix (S6)                               |              | Piedmont Flo                     | •                           | , ,               |                  | · —               | (Explain   | iii rtomanto,                 | ,                       |
|                       | rface (S7) <b>(LRR P, S,</b>              | T. U)        | Anomalous E                      | •                           | `                 | , ,              | •                 |            |                               |                         |
|                       | e Below Surface (S8)                      |              | (MLRA 14                         | -                           |                   |                  |                   | ators of h | vdrophytic v                  | egetation and           |
|                       | S, T, U)                                  |              | Very Shallow                     |                             |                   |                  |                   |            | rology must                   | J                       |
| `                     |   |              | (MLRA 13                         | 8, 152A                     | in FL, 1          | 54)              |                   | •          | rbed or prob                  | •                       |
| Restrictive           | Layer (if observed):                      |              |                                  |                             |                   |                  |                   |            |                               |                         |
| Type:                 | None                                      | е            |                                  |                             |                   |                  |                   |            |                               |                         |
| Depth (ii             | nches).                                   | 0            |                                  |                             |                   |                  | Hydric Soil Pre   | sent?      | Yes                           | No X                    |
| Remarks:              |   |              |                                  |                             |                   |                  | 11,411.0 0011110  |            |                               | <u> </u>                |
| ixemaiks.             |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |
|                       |   |              |                                  |                             |                   |                  |                   |            |                               |                         |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                                     |  | City/County: Ripley/La    | uderdale Sa                                 | mpling Date: 9/21/22  |
|--|--|---------------------------|---|-----------------------|
| Applicant/Owner: Silicon Ranch Corpora                         | tion   |                           | State: TN Sai                               | mpling Point: W007-W  |
| Investigator(s): Benjamin Burdette and Jake                    | Irven Sec  | tion, Township, Range:    |   |                       |
| Landform (hillside, terrace, etc.): terrace                    |  | relief (concave, convex,  | none). concave                              | Slope (%): 0-2        |
| Subregion (LRR or MLRA): LRR P, MLRA 1                         |  |                           | 89.525137                                   | Datum: NAD83          |
| Soil Map Unit Name: Adler silt loam, 0 to 2 p                  |  |                           | NWI classification:                         |                       |
|  |  |                           |   | -                     |
| Are climatic / hydrologic conditions on the site               |  | Yes X                     |   | in in Remarks.)       |
| Are Vegetation X, Soil , or Hydro                              |  |                           | Circumstances" present?                     | Yes X No              |
| Are Vegetation, Soil, or Hydro                                 | logy naturally problema                          | tic? (If needed, ex       | plain any answers in Remar                  | rks.)                 |
| SUMMARY OF FINDINGS – Attach                                   | site map showing san                             | npling point locati       | ons, transects, impo                        | rtant features, etc.  |
| Hydrophytic Vegetation Present?                                | Yes X No   | Is the Sampled Area       |   |                       |
| Hydric Soil Present?   |  | within a Wetland?         | Yes X No                                    | )                     |
| Wetland Hydrology Present?                                     | Yes X No   |                           |   |                       |
| Remarks: PEM portion of Wetland 7; in agricultural cot DP13-W7 | ton field  |                           |   |                       |
| HYDROLOGY  |  |                           |   |                       |
| Wetland Hydrology Indicators:                                  |  |                           | Secondary Indicators (min                   | imum of two required) |
| Primary Indicators (minimum of one is required                 |  |                           | X Surface Soil Cracks (E                    |                       |
| Surface Water (A1)   | Aquatic Fauna (B13)                              |                           | Sparsely Vegetated C                        |                       |
| High Water Table (A2)  | Marl Deposits (B15) (LR                          |                           | X Drainage Patterns (B1                     | •                     |
| Saturation (A3)  | Hydrogen Sulfide Odor (                          | •                         | Moss Trim Lines (B16)                       |                       |
| Water Marks (B1) Sediment Deposits (B2)                        | Oxidized Rhizospheres of Presence of Reduced Iro |                           | Dry-Season Water Tall Crayfish Burrows (C8) |                       |
| Drift Deposits (B3)  | Recent Iron Reduction in                         |                           | Saturation Visible on A                     |                       |
| X Algal Mat or Crust (B4)                                      | Thin Muck Surface (C7)                           | r rined delle (de)        | Geomorphic Position (                       |                       |
| Iron Deposits (B5)   | Other (Explain in Remark                         | ks)                       | Shallow Aquitard (D3)                       |                       |
| Inundation Visible on Aerial Imagery (B7                       |  | ,                         | FAC-Neutral Test (D5)                       |                       |
| Water-Stained Leaves (B9)                                      |  |                           | Sphagnum Moss (D8)                          | (LRR T, U)            |
| Field Observations:  |  |                           |   |                       |
| Surface Water Present? Yes                                     | No X Depth (inches):                             | 0                         |   |                       |
|  | No X Depth (inches):                             | 0                         |   |                       |
| Saturation Present? Yes  | No X Depth (inches):                             | 0 Wetland                 | Hydrology Present?                          | Yes X No              |
| (includes capillary fringe)                                    |  |                           |   |                       |
| Describe Recorded Data (stream gauge, mo                       | nitoring well, aerial photos, pr                 | evious inspections), if a | vailable:                                   |                       |
| Remarks:   |  |                           |   |                       |
|  |  |                           |   |                       |
|  |  |                           |   |                       |
|  |  |                           |   |                       |
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|  |  |                           |   |                       |
|  |  |                           |   |                       |

Sampling Point: W007-W
orksheet:

| Tree Stratum (Plot size                              | :)                           | % Cover   | Species?        | Status | Dominance Test worksheet:   |
|--|------------------------------|-----------|-----------------|--------|---|
| 1  |                              |           |                 |        | Number of Dominant Species  |
| \ <u>-</u>   |                              |           |                 |        | That Are OBL, FACW, or FAC:0 (A)  |
| 3.<br>4.   |                              |           |                 |        | Total Number of Dominant Species Across All Strata: 1 (B)   |
| 6  |                              |           |                 |        | Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)  |
| 7  |                              |           |                 |        | Prevalence Index worksheet:   |
| 8.   | _                            |           |                 |        | Total % Cover of: Multiply by:  |
|  |                              |           | Total Cover     |        | OBL species 0 x 1 = 0   |
|  | 50% of total cover:          | 20%       | of total cover: |        | FACW species 0 x 2 = 0  |
| Sapling/Shrub Stratum                                |                              |           |                 |        | FAC species 0 x 3 = 0   |
| 1.   |                              |           |                 |        | FACU species 0 x 4 = 0  |
| 2  |                              |           |                 |        | UPL species 0 x 5 = 0   |
| 0  |                              |           |                 |        | Column Totals: 0 (A) 0 (B)  |
| 4  |                              |           |                 |        | Prevalence Index = B/A =  |
| E  |                              |           |                 |        | Hydrophytic Vegetation Indicators:  |
| 6  |                              |           |                 |        | 1 - Rapid Test for Hydrophytic Vegetation   |
|  |                              |           |                 |        | 2 - Dominance Test is >50%  |
| 8.   |                              |           |                 |        | 3 - Prevalence Index is ≤3.0 <sup>1</sup>   |
|  |                              |           | Total Cover     |        | X Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)   |
|  | 50% of total cover:          |           | of total cover: |        | <u> </u>  |
| <u>Herb Stratum</u> (Plot size                       |                              |           | or total cover. |        |   |
| 1. Panicum   |                              | 80        | Yes             |        | 1   |
| 2  |                              |           | 103             |        | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.        |
| 3.   |                              |           |                 |        | Definitions of Four Vegetation Strata:  |
| 4.   |                              |           |                 |        |   |
|  |                              |           |                 |        | <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of |
| -  |                              |           |                 |        | height.   |
|  |                              |           |                 |        |   |
|  |                              |           |                 |        | Sapling/Shrub – Woody plants, excluding vines, less   |
| _  |                              |           |                 |        | than 3 in. DBH and greater than 3.28 ft (1 m) tall.   |
|  |                              |           |                 |        |   |
| 10.  |                              |           |                 |        | <b>Herb</b> – All herbaceous (non-woody) plants, regardless   |
| 11.  |                              |           |                 |        | of size, and woody plants less than 3.28 ft tall.   |
| 12   |                              |           | T-4-1 0         |        | Was da Visas Allega da dia ang ang atau da ang ang ang  |
|  | 500/ 51 1 1                  |           | =Total Cover    | 40     | <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.   |
|  | 50% of total cover: 40       | 20%       | of total cover: | 16     | rioigni.  |
| Woody Vine Stratum                                   | (Plot size: 30 )             |           |                 |        |   |
| 1.   |                              |           |                 |        |   |
|  |                              |           |                 |        |   |
| 3.   |                              |           |                 |        |   |
| 4  |                              |           |                 |        |   |
| 5.   |                              |           |                 |        | Hydrophytic   |
|  |                              |           | =Total Cover    |        | Vegetation  |
|  | 50% of total cover:          | 20%       | of total cover: |        | Present? Yes X No No  |
| Remarks: (If observed, I<br>Heavily disturbed vegeta | ist morphological adaptation | s below.) |                 |        |   |
|  |                              |           |                 |        |   |

SOIL Sampling Point: W007-W

| Profile Desc            | cription: (Describe t         | o the dept | h needed to docu     | ıment th        | ne indica         | ator or c        | onfirm the absence     | of indicators.)                              |
|-------------------------|-------------------------------|------------|----------------------|-----------------|-------------------|------------------|------------------------|--|
| Depth                   | Matrix                        |            | Redox                | c Featur        | es                |                  |                        |  |
| (inches)                | Color (moist)                 | %          | Color (moist)        | %               | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                | Remarks                                      |
| 0-4                     | 10YR 4/1                      | 95         | 10YR 4/6             | 5               | <u>C</u>          | <u>M</u>         | Loamy/Clayey           | Prominent redox concentrations               |
| 4-16                    | 10YR 5/1                      | 80         | 10YR 4/6             | 20              | <u>C</u>          | <u>M</u>         | Loamy/Clayey           | Prominent redox concentrations               |
| 16-20                   | 7.5YR 5/6                     | 100        |                      |                 |                   |                  | Loamy/Clayey           | silt loam                                    |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
| <sup>1</sup> Type: C=Ce | oncentration, D=Deple         | etion. RM= | Reduced Matrix. M    | IS=Mas          | ked Sand          | d Grains.        | <sup>2</sup> Location: | PL=Pore Lining, M=Matrix.                    |
|                         | Indicators: (Applical         |            |                      |                 |                   |                  |                        | for Problematic Hydric Soils <sup>3</sup> :  |
| Histosol                |                               |            | Thin Dark Su         |                 |                   | S, T, U)         |                        | uck (A9) <b>(LRR O)</b>                      |
|                         | pipedon (A2)                  |            | Barrier Island       |                 |                   |                  |                        | uck (A10) (LRR S)                            |
|                         | stic (A3)                     |            | (MLRA 15             | 3B, 153         | D) .              | ·                |                        | Prairie Redox (A16)                          |
| Hydroge                 | n Sulfide (A4)                |            | Loamy Muck           | y Minera        | al (F1) <b>(L</b> | RR O)            | (outs                  | ide MLRA 150A)                               |
| Stratified              | d Layers (A5)                 |            | Loamy Gleye          | ed Matrix       | k (F2)            |                  | Reduce                 | ed Vertic (F18)                              |
| Organic                 | Bodies (A6) (LRR P,           | T, U)      | X Depleted Ma        | trix (F3)       |                   |                  | (outs                  | ide MLRA 150A, 150B)                         |
| 5 cm Mu                 | ıcky Mineral (A7) <b>(LR</b>  | R P, T, U) | Redox Dark           | Surface         | (F6)              |                  | Piedmo                 | ont Floodplain Soils (F19) <b>(LRR P, T)</b> |
| Muck Pr                 | esence (A8) (LRR U)           |            | Depleted Dar         | rk Surfa        | ce (F7)           |                  | Anoma                  | lous Bright Floodplain Soils (F20)           |
| 1 cm Mu                 | ıck (A9) (LRR P, T)           |            | Redox Depre          | essions (       | (F8)              |                  | (MLR                   | A 153B)                                      |
| Depleted                | d Below Dark Surface          | (A11)      | Marl (F10) <b>(L</b> | .RR U)          |                   |                  | Red Pa                 | rent Material (F21)                          |
| Thick Da                | ark Surface (A12)             |            | Depleted Ocl         | hric (F1        | 1) <b>(MLR</b> /  | A 151)           | Very SI                | nallow Dark Surface (F22)                    |
| Coast P                 | rairie Redox (A16) ( <b>M</b> | LRA 150A   | ) Iron-Mangan        | ese Mas         | sses (F12         | 2) <b>(LRR</b> ( | O, P, T) (outs         | ide MLRA 138, 152A in FL, 154)               |
| Sandy M                 | lucky Mineral (S1) <b>(Ll</b> | RR O, S)   | Umbric Surfa         | ice (F13        | ) (LRR F          | P, T, U)         | Barrier                | Islands Low Chroma Matrix (TS7)              |
| Sandy G                 | Gleyed Matrix (S4)            |            | Delta Ochric         | (F17) <b>(N</b> | /ILRA 15          | 51)              | (MLR                   | A 153B, 153D)                                |
| Sandy R                 | ledox (S5)                    |            | Reduced Ver          | rtic (F18       | ) (MLRA           | 150A, 1          | <b>50B)</b> Other (    | Explain in Remarks)                          |
| Stripped                | Matrix (S6)                   |            | Piedmont Flo         | odplain         | Soils (F          | 19) <b>(MLF</b>  | RA 149A)               |  |
| Dark Su                 | rface (S7) (LRR P, S,         | T, U)      | Anomalous E          | Bright Flo      | oodplain          | Soils (F2        | 20)                    |  |
| Polyvalu                | e Below Surface (S8)          |            | (MLRA 14             | 9A, 153         | C, 153D)          | )                | <sup>3</sup> Indicat   | ors of hydrophytic vegetation and            |
| (LRR                    | S, T, U)                      |            | Very Shallow         | Dark S          | urface (F         | 22)              | wetla                  | and hydrology must be present,               |
|                         |                               |            | (MLRA 13             | 8, 152A         | in FL, 1          | 54)              | unles                  | ss disturbed or problematic.                 |
| Restrictive             | Layer (if observed):          |            |                      |                 |                   |                  |                        |  |
| Type:                   | None                          | 9          |                      |                 |                   |                  |                        |  |
| Depth (ii               | nches):                       | 0          |                      |                 |                   |                  | Hydric Soil Prese      | ent? Yes <u>X</u> No                         |
| Remarks:                | ad an alay layar              |            |                      |                 |                   |                  |                        |  |
| vvater perch            | ed on clay layer              |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |
|                         |                               |            |                      |                 |                   |                  |                        |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                       |   | City/County: Ripley/La      | uderdale               | Sampling Date: 9/21/2022  |
|--|---|-----------------------------|------------------------|---------------------------|
| Applicant/Owner: Silicon Ranch Corpo             | ration                                    | _                           | State: TN              | Sampling Point: W007-UPL  |
| Investigator(s): Benjamin Burdette and Jak       | e Irvin S                                 | Section, Township, Range:   |                        | _                         |
| Landform (hillside, terrace, etc.): terrace      |   | al relief (concave, convex, |                        | Slope (%): 0-2            |
| Subregion (LRR or MLRA): LRR P, MLRA             |   | ·                           | 89.525023              | Datum: NAD83              |
| · · · · · · · · · · · · · · · · · · ·            |   |                             |                        |                           |
| Soil Map Unit Name: Adler silt loam, 0 to 2      |   |                             | NWI classifica         |                           |
| Are climatic / hydrologic conditions on the s    | •   |                             |                        | explain in Remarks.)      |
| Are Vegetation, Soil, or Hyd                     | rologysignificantly dist                  | turbed? Are "Normal C       | Circumstances" present | t? Yes X No               |
| Are Vegetation, Soil, or Hyd                     | rologynaturally proble                    | matic? (If needed, ex       | plain any answers in R | lemarks.)                 |
| SUMMARY OF FINDINGS - Attac                      | h site map showing s                      | ampling point locati        | ons, transects, in     | nportant features, etc.   |
| Hydrophytic Vegetation Present?                  | Yes No X                                  | Is the Sampled Area         |                        |                           |
| Hydric Soil Present?                             | Yes No X                                  | within a Wetland?           | Yes                    | No X                      |
| Wetland Hydrology Present?                       | Yes No X                                  |                             |                        |                           |
| Upland point corresponding to PEM portio UP14-UP | n of W7. In a cotton field.               |                             |                        |                           |
| HYDROLOGY  |   |                             |                        |                           |
| Wetland Hydrology Indicators:                    |   |                             | Secondary Indicators   | (minimum of two required) |
| Primary Indicators (minimum of one is req        | uired; check all that apply)              |                             | Surface Soil Crac      |                           |
| Surface Water (A1)                               | Aquatic Fauna (B13)                       |                             |                        | ted Concave Surface (B8)  |
| High Water Table (A2)                            | Marl Deposits (B15) (I                    |                             | Drainage Pattern       |                           |
| Saturation (A3)                                  | Hydrogen Sulfide Odd                      |                             | Moss Trim Lines        |                           |
| Water Marks (B1)                                 |   | es on Living Roots (C3)     | Dry-Season Wate        |                           |
| Sediment Deposits (B2) Drift Deposits (B3)       | Presence of Reduced Recent Iron Reduction |                             | Crayfish Burrows       | e on Aerial Imagery (C9)  |
| Algal Mat or Crust (B4)                          | Thin Muck Surface (C                      |                             | Geomorphic Pos         | • • • •                   |
| Iron Deposits (B5)                               | Other (Explain in Rem                     | •                           | Shallow Aquitard       | ` '                       |
| Inundation Visible on Aerial Imagery (           |   |                             | FAC-Neutral Tes        |                           |
| Water-Stained Leaves (B9)                        | ,   |                             | Sphagnum Moss          |                           |
| Field Observations:                              |   |                             |                        |                           |
| Surface Water Present? Yes                       | No X Depth (inches                        | s): 0                       |                        |                           |
| Water Table Present? Yes                         | No X Depth (inches                        | ·                           |                        |                           |
| Saturation Present? Yes                          | No X Depth (inches                        | s): 0 Wetland               | Hydrology Present?     | Yes No _X_                |
| (includes capillary fringe)                      |   |                             |                        |                           |
| Describe Recorded Data (stream gauge, r          | nonitoring well, aerial photos,           | previous inspections), if a | vailable:              |                           |
| Remarks:   |   |                             |                        |                           |
|  |   |                             |                        |                           |
|  |   |                             |                        |                           |
|  |   |                             |                        |                           |
|  |   |                             |                        |                           |
|  |   |                             |                        |                           |
|  |   |                             |                        |                           |
|  |   |                             |                        |                           |
|  |   |                             |                        |                           |
|  |   |                             |                        |                           |

#### VEGETATION (Four Strata) - Use scientific names of plants.

50% of total cover:

50% of total cover:

50% of total cover: \_\_\_

50% of total cover:

Tree Stratum (Plot size: \_\_\_\_\_30 )

Sapling/Shrub Stratum (Plot size: 30

Herb Stratum (Plot size: 30 )

1. Gossypium hirsutum

2. 3.

5. 6.

2. 3.

5. 6.

3.4.5.6.

3.

| Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status | Dominance Test worksheet:  |
|---------------------|----------------------|---------------------|--|
| % Cover             | Species?             | Status              |  |
|                     |                      |                     | Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)   |
|                     |                      |                     | Total Number of Dominant Species Across All Strata: 1 (B)  |
|                     |                      |                     | Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)   |
|                     |                      |                     | Prevalence Index worksheet:  |
|                     |                      |                     | Total % Cover of: Multiply by:   |
|                     | =Total Cover         |                     | OBL species 0 x 1 = 0  |
| 20%                 | of total cover:      |                     | FACW species 0 x 2 = 0   |
|                     |                      |                     | FAC species 0 x 3 = 0  |
|                     |                      |                     | FACU species 0 x 4 = 0   |
|                     |                      |                     | UPL species 100 x 5 = 500  |
|                     |                      |                     | Column Totals: 100 (A) 500 (B)   |
|                     |                      |                     | Prevalence Index = B/A = 5.00  |
|                     |                      |                     | Hydrophytic Vegetation Indicators:   |
|                     |                      |                     | 1 - Rapid Test for Hydrophytic Vegetation  |
|                     |                      |                     | 2 - Dominance Test is >50%   |
|                     |                      |                     | - I  |
|                     |                      |                     | 2 Description of Index 1: <2.01  |
|                     |                      |                     | 3 - Prevalence Index is ≤3.0 <sup>1</sup>  |
| 20%                 | =Total Cover         |                     | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
|                     |                      | UPL                 | I ——   |
| 20%                 | of total cover:      | UPL                 | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) of more in diameter at breast height (DBH), regardless of   |
| 20%                 | of total cover:      | UPL                 | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) of more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub – Woody plants, excluding vines, less  |
| 100                 | of total cover:      | UPL                 | Problematic Hydrophytic Vegetation¹ (Explain)  ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) of more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless |

Remarks: (If observed, list morphological adaptations below.

Woody Vine Stratum (Plot size: 30 )

SOIL Sampling Point: W007-UPL

|                        | cription: (Describe                                 | to the depth |                         |            |                   | ator or co       | onfirm the absence     | of indic        | cators.)           |                       |      |
|------------------------|---|--------------|-------------------------|------------|-------------------|------------------|------------------------|-----------------|--------------------|-----------------------|------|
| Depth                  | Matrix  | 0/           |                         | K Featur   |                   | 12               | Taretrusa              |                 | Dam                |                       |      |
| (inches)               | Color (moist)                                       | <u>%</u>     | Color (moist)           | <u>%</u>   | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                |                 | Rem                | narks                 |      |
| 0-20                   | 10YR 5/4  | 100          |                         |            |                   |                  | Loamy/Clayey           |                 | silty              | loam                  |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
| -                      |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
| <sup>1</sup> Type: C=C | oncentration, D=Depl                                | letion. RM=R | educed Matrix. N        | <br>1S=Mas | ked San           | d Grains.        | <sup>2</sup> Location: | PL=Por          | e Lining, M=l      | Matrix.               |      |
|                        | Indicators: (Applica                                |              |                         |            |                   |                  |                        |                 | blematic Hy        |                       |      |
| Histosol               |   |              | Thin Dark Su            |            |                   | S, T, U)         |                        |                 | 9) (LRR O)         |                       |      |
|                        | oipedon (A2)  | =            | Barrier Island          |            |                   |                  |                        | -               | 10) <b>(LRR S)</b> |                       |      |
| Black Hi               | istic (A3)  | <del>-</del> | (MLRA 15                | 3B, 153    | D)                | •                |                        |                 | Redox (A16)        |                       |      |
| Hydroge                | en Sulfide (A4)                                     |              | Loamy Muck              | y Miner    | al (F1) <b>(L</b> | RR O)            | (ou                    | tside ML        | RA 150A)           |                       |      |
| Stratified             | d Layers (A5)                                       | <u>=</u> _   | Loamy Gleye             | ed Matri   | x (F2)            |                  | Redu                   | ced Verti       | c (F18)            |                       |      |
| Organic                | Bodies (A6) (LRR P,                                 | T, U)        | Depleted Ma             | trix (F3)  | )                 |                  | (ou                    | tside ML        | RA 150A, 15        | i0B)                  |      |
| 5 cm Mu                | ucky Mineral (A7) <b>(LR</b>                        | R P, T, U)   | Redox Dark              | Surface    | (F6)              |                  | Piedn                  | nont Floo       | dplain Soils (     | (F19) <b>(LRR P</b> , | , T) |
| Muck Pr                | resence (A8) (LRR U)                                | _            | Depleted Da             | rk Surfa   | ce (F7)           |                  | Anom                   | alous Bri       | ight Floodpla      | in Soils (F20)        |      |
| 1 cm Mu                | ıck (A9) <b>(LRR P, T)</b>                          | -            | Redox Depre             | essions    | (F8)              |                  | (ML                    | .RA 153E        | 3)                 |                       |      |
|                        | d Below Dark Surface                                | e (A11)      | Marl (F10) <b>(L</b>    |            |                   |                  |                        |                 | aterial (F21)      |                       |      |
|                        | ark Surface (A12)                                   | _            | Depleted Oc             |            |                   |                  |                        |                 | Dark Surface       | ` '                   |      |
|                        | rairie Redox (A16) (M                               | · -          | Iron-Mangan             |            | -                 |                  |                        |                 |                    | A in FL, 154)         |      |
|                        | Mucky Mineral (S1) (L                               | .RR O, S)    | Umbric Surfa            | -          |                   |                  |                        |                 |                    | a Matrix (TS7)        | )    |
|                        | Gleyed Matrix (S4)                                  | -            | Delta Ochric            |            |                   |                  | •                      | .RA 153E        |                    |                       |      |
|                        | Redox (S5)  | -            | Reduced Ver             |            |                   |                  |                        | (Explain        | in Remarks)        |                       |      |
|                        | Matrix (S6)   | T II) -      | Piedmont Flo            |            | -                 |                  |                        |                 |                    |                       |      |
|                        | rface (S7) <b>(LRR P, S</b><br>le Below Surface (S8 | _            | Anomalous E<br>(MLRA 14 | -          |                   | -                |                        | ators of h      | ydronhytic y       | egetation and         |      |
|                        | S, T, U)  | ')           | Very Shallow            |            |                   |                  |                        |                 | rology must l      | •                     |      |
| (=::::                 | o, ., o,  | -            | (MLRA 13                |            |                   |                  |                        | -               | rbed or probl      |                       |      |
| Restrictive            | Laver (if observed):                                |              | (                       | -,         |                   | ,                |                        |                 |                    |                       |      |
| Type:                  | Non   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
| Depth (i               |   | 0            |                         |            |                   |                  | Hydric Soil Pre        | sont?           | Yes                | No X                  |      |
|                        |   | 0            |                         |            |                   |                  | Tryunc 3011 File.      | 5 <b>6</b> 111: | 163                | NOX                   | _    |
| Remarks:               |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |
|                        |   |              |                         |            |                   |                  |                        |                 |                    |                       |      |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                       |                                 | City/County: Ripley/Lau    | uderdale                | Sampling Date: 9/21/22                |
|--|---------------------------------|----------------------------|-------------------------|---------------------------------------|
| Applicant/Owner: Silicon Ranch Corpora           | tion                            |                            | State: TN               | Sampling Point: W007-W                |
| Investigator(s): Benjamin Burdette and Jake      | Irven Sec                       | ction, Township, Range:    |                         | - · · · -                             |
| Landform (hillside, terrace, etc.): depression   |                                 | relief (concave, convex,   | none). concave          | Slope (%): 0-2                        |
|  |                                 | •                          |                         |                                       |
| Subregion (LRR or MLRA): LRR P, MLRA 1:          |                                 |                            | 39.525196               |                                       |
| Soil Map Unit Name: Adler silt loam, 0 to 2 p    |                                 |                            | NWI classificat         | ion: PUBHN                            |
| Are climatic / hydrologic conditions on the site | typical for this time of year?  | Yes X                      | No (If no, e            | xplain in Remarks.)                   |
| Are Vegetation, Soil, or Hydro                   | ogysignificantly distur         | bed? Are "Normal C         | ircumstances" present?  | Yes X No                              |
| Are Vegetation, Soil, or Hydrol                  | logy naturally problema         | atic? (If needed, exp      | olain any answers in Re | emarks.)                              |
| SUMMARY OF FINDINGS – Attach                     | site map showing sar            | mpling point location      | ons, transects, im      | portant features, etc.                |
| Hydrophytic Vegetation Present?                  | Yes X No                        | Is the Sampled Area        |                         |                                       |
|  | Yes X No                        | within a Wetland?          | Yes X                   | No                                    |
|  | Yes X No                        |                            |                         |                                       |
| Remarks:   |                                 |                            |                         |                                       |
| PFO part of wetland 7; adjacent to agricultur    | al field                        |                            |                         |                                       |
| DP11-W7  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
| HYDROLOGY  |                                 |                            |                         |                                       |
| Wetland Hydrology Indicators:                    |                                 |                            | Secondary Indicators (  | minimum of two required)              |
| Primary Indicators (minimum of one is requir     | ed; check all that apply)       |                            | Surface Soil Crack      | · · · · · · · · · · · · · · · · · · · |
| Surface Water (A1)                               | Aquatic Fauna (B13)             |                            | Sparsely Vegetate       | ed Concave Surface (B8)               |
| High Water Table (A2)                            | Marl Deposits (B15) (LR         | RR U)                      | X Drainage Patterns     | (B10)                                 |
| Saturation (A3)                                  | Hydrogen Sulfide Odor           | (C1)                       | X Moss Trim Lines (     | B16)                                  |
| X Water Marks (B1)                               | Oxidized Rhizospheres           | on Living Roots (C3)       | Dry-Season Water        | r Table (C2)                          |
| Sediment Deposits (B2)                           | Presence of Reduced In          | on (C4)                    | Crayfish Burrows        | (C8)                                  |
| Drift Deposits (B3)                              | Recent Iron Reduction is        | n Tilled Soils (C6)        | Saturation Visible      | on Aerial Imagery (C9)                |
| Algal Mat or Crust (B4)                          | Thin Muck Surface (C7)          |                            | Geomorphic Posit        | ion (D2)                              |
| Iron Deposits (B5)                               | Other (Explain in Remai         | rks)                       | Shallow Aquitard (      | (D3)                                  |
| Inundation Visible on Aerial Imagery (B7         | <b>'</b> )                      |                            | FAC-Neutral Test        |                                       |
| X Water-Stained Leaves (B9)                      |                                 |                            | Sphagnum Moss (         | [D8) <b>(LRR T, U)</b>                |
| Field Observations:                              |                                 |                            |                         |                                       |
| Surface Water Present? Yes                       | No X Depth (inches):            |                            |                         |                                       |
|  | No X Depth (inches):            |                            |                         |                                       |
| Saturation Present? Yes                          | No X Depth (inches):            | 0 Wetland I                | Hydrology Present?      | Yes X No                              |
| (includes capillary fringe)                      |                                 |                            |                         |                                       |
| Describe Recorded Data (stream gauge, mo         | nitoring well, aerial photos, p | revious inspections), if a | /ailable:               |                                       |
|  |                                 |                            |                         |                                       |
| Demonto  |                                 |                            |                         |                                       |
| Remarks:   |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |
|  |                                 |                            |                         |                                       |

Sampling Point:

| <u>Tree Stratum</u> (Plot size: 30 )  | Absolute<br>% Cover                      | Dominant<br>Species?                       | Status     | Dominance Test worksheet:  |  |
|---|--|--|------------|--|--|
| 1. Liquidambar styraciflua  | 65                                       | Yes  | FAC        | Number of Dominant Species   |  |
| Ulmus americana   | 10                                       | No   | FAC        | That Are OBL, FACW, or FAC: 3  | (A)                                      |
| 3. Celtis spp.  | 5  | No   |            | Total Number of Dominant   |  |
| 4.  |  |  |            | Species Across All Strata: 4   | (B)                                      |
| 5.  |  |  |            | Percent of Dominant Species  |  |
| 6.  |  |  |            | That Are OBL, FACW, or FAC: 75.0%  | (A/B)                                    |
| 7.  |  |  |            | Prevalence Index worksheet:  |  |
| 8.  |  |  |            | Total % Cover of: Multiply by:   |  |
|   | 80                                       | =Total Cover                               |            | OBL species 0 x 1 = 0  |  |
| 50% of total cover:   | 40 20%                                   | of total cover:                            | 16         | FACW species 2 x 2 = 4   |  |
| Sapling/Shrub Stratum (Plot size: 30  | )  |  |            | FAC species 135 x 3 = 405  |  |
| 1. Liquidambar styraciflua  | 35                                       | Yes  | FAC        | FACU species 0 x 4 = 0   |  |
| 2. Ulmus americana  | 5  | No   | FAC        | UPL species 2 x 5 = 10   | ,  |
| 3. Quercus velutina   | 2  | No   | UPL        | Column Totals: 139 (A) 419   | (B)                                      |
| 4. Quercus laurifolia   | 2  | No   | FACW       | Prevalence Index = B/A = 3.01  |  |
| 5.  |  |  |            | Hydrophytic Vegetation Indicators:   |  |
| 6.  |  |  |            | 1 - Rapid Test for Hydrophytic Vegetation  |  |
| 7.  |  |  |            | X 2 - Dominance Test is >50%   |  |
| 8.  |  |  |            | 3 - Prevalence Index is ≤3.0 <sup>1</sup>  |  |
|   | 44                                       | =Total Cover                               |            | Problematic Hydrophytic Vegetation <sup>1</sup> (Explanation)  | ain)                                     |
|   |  | of total cover:                            | 9          |  |  |
| 50% of total cover:   | 22 20%                                   | oi total cover.                            | 9          |  |  |
|   | 22 20%                                   | or total cover.                            | 9          |  |  |
|   | 22 20%<br>5                              | No   | FAC        | <sup>1</sup> Indicators of hydric soil and wetland hydrology   | muet he                                  |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans  |  |  |            | <sup>1</sup> Indicators of hydric soil and wetland hydrology present, unless disturbed or problematic.   | must be                                  |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans  2. Campsis radicans   | 5  | No   | FAC        | <sup>1</sup> Indicators of hydric soil and wetland hydrology present, unless disturbed or problematic. <b>Definitions of Four Vegetation Strata:</b>   | must be                                  |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum   | 5 5                                      | No<br>No                                   | FAC<br>FAC | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  |  |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp.   | 5<br>5<br>10                             | No<br>No<br>Yes                            | FAC<br>FAC | present, unless disturbed or problematic.  | 6 cm) or                                 |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp. 5.  | 5<br>5<br>10                             | No<br>No<br>Yes                            | FAC<br>FAC | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6)   | 6 cm) or                                 |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp. 5.  | 5<br>5<br>10                             | No<br>No<br>Yes                            | FAC<br>FAC | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  | 6 cm) or<br>dless of                     |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp. 5. 6. 7.  | 5<br>5<br>10                             | No<br>No<br>Yes                            | FAC<br>FAC | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vine  | 6 cm) or<br>dless of<br>es, less         |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp. 5. 6. 7. 8.                                       | 5<br>5<br>10                             | No<br>No<br>Yes                            | FAC<br>FAC | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  | 6 cm) or<br>dless of<br>es, less         |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp. 5. 6. 7. 8.                                       | 5<br>5<br>10                             | No<br>No<br>Yes                            | FAC<br>FAC | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than 3.28 ft (1 m) ta  | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp. 5. 6. 7. 8. 9. 110.                               | 5<br>5<br>10<br>10                       | No<br>No<br>Yes                            | FAC<br>FAC | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than 3.28 ft (1 m) tall Herb – All herbaceous (non-woody) plants, regard.  | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp. 5. 6. 7. 8. 9. 10. 11.                            | 5<br>5<br>10<br>10                       | No<br>No<br>Yes                            | FAC<br>FAC | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than 3.28 ft (1 m) ta  | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp. 5. 6. 7. 8. 9. 10. 11.                            | 5<br>5<br>10<br>10                       | No No Yes Yes                              | FAC<br>FAC | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vine than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, reg. of size, and woody plants less than 3.28 ft tall.  | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp. 5. 6. 7. 8. 9. 10. 11. 12.                        | 5<br>5<br>10<br>10                       | No No Yes Yes  Total Cover                 | FAC FAC    | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than 3.28 ft (1 m) tall Herb – All herbaceous (non-woody) plants, regard.  | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum (Plot size: 30 )  1. Toxicodendron radicans 2. Campsis radicans 3. Microstegium vimineum 4. Setaria spp. 5. 6. 7. 8. 9. 110. 111. 112. 50% of total cover: | 5<br>5<br>10<br>10                       | No No Yes Yes                              | FAC<br>FAC | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vine than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regord size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.2          | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum  | 5<br>5<br>10<br>10<br>10<br>30<br>15 20% | No No Yes Yes  Total Cover                 | FAC FAC    | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vine than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regord size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.2          | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum  | 5<br>5<br>10<br>10<br>10<br>30<br>15 20% | No No Yes Yes  Total Cover                 | FAC FAC    | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vine than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regord size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.2          | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum (Plot size:  | 5<br>5<br>10<br>10<br>10<br>30<br>15 20% | No No Yes Yes  Total Cover                 | FAC FAC    | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vine than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regord size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.2          | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum (Plot size:  | 5<br>5<br>10<br>10<br>10<br>30<br>15 20% | No No Yes Yes  Total Cover                 | FAC FAC    | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vine than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regord size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.2          | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum  | 5<br>5<br>10<br>10<br>10                 | No No Yes Yes  Total Cover                 | FAC FAC    | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regord size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.2 height. | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum (Plot size:  | 5<br>5<br>10<br>10<br>10                 | No No Yes Yes  Total Cover of total cover: | FAC FAC    | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regord size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.2 height. | 6 cm) or<br>dless of<br>es, less<br>all. |
| Herb Stratum  | 5<br>5<br>10<br>10<br>10<br>30<br>15 20% | No No Yes Yes  Total Cover                 | FAC FAC    | present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 more in diameter at breast height (DBH), regard height.  Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regord size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.2 height. | 6 cm) or<br>dless of<br>es, less<br>all. |

SOIL Sampling Point: W007-W

| Profile Desc  | ription: (Describe to                                      | the dept     | th needed to docu        | ıment t    | he indica         | ator or co       | onfirm th | e absence              | of indicators.)   |
|---------------|--|--------------|--------------------------|------------|-------------------|------------------|-----------|------------------------|---|
| Depth         | Matrix   |              |                          | k Featur   |                   |                  |           |                        |   |
| (inches)      | Color (moist)  | <u>%</u>     | Color (moist)            | %          | Type <sup>1</sup> | Loc <sup>2</sup> | Te        | xture                  | Remarks   |
| 0-6           | 10YR 5/2   | 90           | 10YR 5/6                 | 10         | С                 | <u>M</u>         | Loam      | y/Clayey               | silty loam  |
| 6-20          | 10YR 6/2   | 90           | 10YR 5/6                 | 10         | С                 | М                | Loam      | y/Clayey               | silty loam  |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
| ¹Type: C=Co   | oncentration, D=Deple                                      | etion, RM=   | Reduced Matrix, M        | <br>1S=Mas | ked San           | d Grains.        |           | <sup>2</sup> Location: | PL=Pore Lining, M=Matrix.   |
|               | ndicators: (Applicat                                       |              |                          |            |                   |                  |           |                        | for Problematic Hydric Soils <sup>3</sup> :   |
| Histosol (    | (A1)   |              | Thin Dark Su             | ırface (S  | 9) <b>(LRR</b>    | S, T, U)         |           | 1 cm M                 | luck (A9) <b>(LRR O)</b>  |
| Histic Ep     | ipedon (A2)  |              | Barrier Island           | ds 1 cm    | Muck (S           | 12)              |           | 2 cm N                 | luck (A10) <b>(LRR S)</b>   |
| Black His     |  |              | (MLRA 15                 |            |                   |                  |           |                        | Prairie Redox (A16)   |
|               | n Sulfide (A4)   |              | Loamy Muck               | •          | . , .             | .RR O)           |           | •                      | side MLRA 150A)   |
|               | Layers (A5)  | <del>-</del> | Loamy Gleye              |            |                   |                  |           |                        | ed Vertic (F18)   |
|               | Bodies (A6) (LRR P,  |              | X Depleted Ma            |            |                   |                  |           |                        | side MLRA 150A, 150B)   |
|               | cky Mineral (A7) <b>(LRF</b><br>esence (A8) <b>(LRR U)</b> | ( P, 1, U)   | Depleted Dai             |            | ` '               |                  |           |                        | ont Floodplain Soils (F19) <b>(LRR P, T)</b><br>llous Bright Floodplain Soils (F20) |
|               | ck (A9) (LRR P, T)   |              | Redox Depre              |            | ` '               |                  |           |                        | RA 153B)  |
|               | Below Dark Surface   | (A11)        | Marl (F10) <b>(L</b>     |            | ()                |                  |           |                        | arent Material (F21)  |
|               | rk Surface (A12)   | ,            | Depleted Oc              |            | 1) <b>(MLR</b>    | A 151)           |           | Very S                 | hallow Dark Surface (F22)   |
| Coast Pra     | airie Redox (A16) ( <b>MI</b>                              | LRA 150A     | .) Iron-Mangan           | ese Ma     | sses (F1          | 2) <b>(LRR (</b> | O, P, T)  | (outs                  | side MLRA 138, 152A in FL, 154)   |
|               | ucky Mineral (S1) <b>(LF</b>                               | RR O, S)     | Umbric Surfa             | ice (F13   | 3) <b>(LRR F</b>  | P, T, U)         |           | Barrier                | Islands Low Chroma Matrix (TS7)   |
|               | leyed Matrix (S4)  |              | Delta Ochric             |            |                   |                  |           |                        | RA 153B, 153D)  |
|               | edox (S5)  |              | Reduced Ver              | ,          | , •               |                  | •         | Other (                | Explain in Remarks)   |
|               | Matrix (S6)  | <b>T</b>     | Piedmont Flo             |            |                   |                  |           |                        |   |
|               | face (S7) <b>(LRR P, S,</b><br>e Below Surface (S8)        |              | Anomalous E              | -          |                   |                  | 20)       | 3Indioo                | tors of hydrophytic vegetation and  |
|               | е веюж зипасе (36 <i>)</i><br><b>3, T, U)</b>              |              | (MLRA 14<br>Very Shallow |            |                   |                  |           |                        | and hydrology must be present,  |
| (2            | z, ., c,   |              | (MLRA 13                 |            |                   |                  |           |                        | ss disturbed or problematic.  |
| Restrictive L | ayer (if observed):  |              | •                        | <u> </u>   |                   |                  |           |                        | ·   |
| Type:         | None   | Э            |                          |            |                   |                  |           |                        |   |
| Depth (in     | iches):  | 0            |                          |            |                   |                  | Hydri     | c Soil Pres            | ent? Yes X No   |
| Remarks:      |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |
|               |  |              |                          |            |                   |                  |           |                        |   |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                       |   | City/County: Ripley/Lau                 | derdale                | Sampling Date: 9/21/2022  |
|--|---|---|------------------------|---------------------------|
| Applicant/Owner: Silicon Ranch Corporati         | ion   |   | State: TN              | Sampling Point: W007-UPL  |
| Investigator(s): Benjamin Burdette and Jake I    | rvin Sect                                       | ion, Township, Range:                   |                        | -                         |
| Landform (hillside, terrace, etc.): hillside     |   | elief (concave, convex, n               | ione). convex          | Slope (%): 0-2            |
| Subregion (LRR or MLRA): LRR P, MLRA 13          |   | •                                       | 9.525050               |                           |
| ,  |   |   |                        | <del></del>               |
| Soil Map Unit Name: Memphis silt loam, 8 to      |   |   | NWI classificat        | -                         |
| Are climatic / hydrologic conditions on the site | · ·   | Yes X                                   | No (If no, e           | explain in Remarks.)      |
| Are Vegetation, Soil, or Hydrolo                 | ogysignificantly disturb                        | ed? Are "Normal Ci                      | rcumstances" present   | ? Yes X No                |
| Are Vegetation, Soil, or Hydrole                 | ogynaturally problema                           | tic? (If needed, exp                    | lain any answers in Re | emarks.)                  |
| SUMMARY OF FINDINGS – Attach                     | site map showing sam                            | pling point location                    | ons, transects, im     | portant features, etc.    |
| Hydrophytic Vegetation Present?                  | Yes No X  | Is the Sampled Area                     |                        |                           |
| Hydric Soil Present?                             | Yes No X  | within a Wetland?                       | Yes                    | No X                      |
| Wetland Hydrology Present?                       | Yes No X  |   |                        |                           |
| Upland point corresponding to W7 PFO DP12-UP     |   |   |                        |                           |
| HYDROLOGY  |   |   |                        |                           |
| Wetland Hydrology Indicators:                    |   |   | Secondary Indicators   | (minimum of two required) |
| Primary Indicators (minimum of one is require    | ed; check all that apply)                       |   | Surface Soil Cracl     | ks (B6)                   |
| Surface Water (A1)                               | Aquatic Fauna (B13)                             | -                                       | Sparsely Vegetate      | ed Concave Surface (B8)   |
| High Water Table (A2)                            | Marl Deposits (B15) (LRI                        | -                                       | Drainage Patterns      |                           |
| Saturation (A3)                                  | Hydrogen Sulfide Odor (0                        | · ·                                     | Moss Trim Lines (      |                           |
| Water Marks (B1)                                 | Oxidized Rhizospheres o                         | - · · · · -                             | Dry-Season Wate        |                           |
| Sediment Deposits (B2)                           | Presence of Reduced Iro                         | - · · · · · · · · · · · · · · · · · · · | Crayfish Burrows       |                           |
| Drift Deposits (B3) Algal Mat or Crust (B4)      | Recent Iron Reduction in                        | Tilled Solls (Cb)                       | Geomorphic Posit       | on Aerial Imagery (C9)    |
| Iron Deposits (B5)                               | Thin Muck Surface (C7) Other (Explain in Remark | -<br>-                                  | Shallow Aquitard       | ` '                       |
| Inundation Visible on Aerial Imagery (B7         |   | _                                       | FAC-Neutral Test       | ` '                       |
| Water-Stained Leaves (B9)                        | ,   | -                                       | Sphagnum Moss          |                           |
| Field Observations:                              |   | <u> </u>                                |                        | (, (, -,                  |
| Surface Water Present? Yes                       | No X Depth (inches):                            | 0                                       |                        |                           |
|  | No X Depth (inches):                            |   |                        |                           |
| Saturation Present? Yes                          | No X Depth (inches):                            |   | lydrology Present?     | Yes No X                  |
| (includes capillary fringe)                      | <u> </u>  |   |                        |                           |
| Describe Recorded Data (stream gauge, mor        | nitoring well, aerial photos, pre               | evious inspections), if av              | ailable:               |                           |
|  |   |   |                        |                           |
| Remarks:   |   |   |                        |                           |
| No hydrology                                     |   |   |                        |                           |
|  |   |   |                        |                           |
|  |   |   |                        |                           |
|  |   |   |                        |                           |
|  |   |   |                        |                           |
|  |   |   |                        |                           |
|  |   |   |                        |                           |
|  |   |   |                        |                           |
|  |   |   |                        |                           |

|   |              | Absolute | Dominant             | Indicator |  |
|---|--------------|----------|----------------------|-----------|--|
| Tree Stratum (Plot size:)   | _            | % Cover  | Species?             | Status    | Dominance Test worksheet:  |
| 1. Celtis spp.  |              | 75       | Yes                  | UPL       | Number of Dominant Species   |
| 2. <u>Liquidambar styraciflua</u>   |              | 20       | Yes                  | FAC       | That Are OBL, FACW, or FAC: 5 (A)  |
| 3. Fraxinus americana   |              | 5        | No                   | FACU      | Total Number of Dominant   |
| 4   |              |          |                      |           | Species Across All Strata: 10 (B)  |
| 5   |              |          |                      |           | Percent of Dominant Species  |
| 6.  |              |          |                      |           | That Are OBL, FACW, or FAC: 50.0% (A/B)  |
| 7.  |              |          |                      |           | Prevalence Index worksheet:  |
| 8.  |              |          |                      |           | Total % Cover of: Multiply by:   |
|   |              | 100      | =Total Cover         |           | OBL species 0 x 1 = 0  |
| 50% of total cover:   | 50           | 20%      | of total cover:      | 20        | FACW species 0 x 2 = 0   |
| Sapling/Shrub Stratum (Plot size: 30  | )            |          |                      |           | FAC species 45 x 3 = 135   |
| 1. Celtis spp.  |              | 5        | Yes                  | UPL       | FACU species 15 x 4 = 60   |
| 2. Ulmus americana  |              | 5        | Yes                  | FAC       | UPL species 87 x 5 = 435   |
| 3. Liquidambar styraciflua  |              | 5        | Yes                  | FAC       | Column Totals: 147 (A) 630 (B)   |
| 4. Carya tomentosa  |              | 5        | Yes                  | UPL       | Prevalence Index = B/A = 4.29  |
| Quercus muehlenbergii   |              | 2        | No                   | UPL       | Hydrophytic Vegetation Indicators:   |
|   |              |          | INO                  | UPL       |  |
| 6.  |              |          | -                    |           | 1 - Rapid Test for Hydrophytic Vegetation  |
| 7.  |              |          |                      |           | 2 - Dominance Test is >50%   |
| 8.  |              |          |                      |           | 3 - Prevalence Index is ≤3.0 <sup>1</sup>  |
|   | _            |          | =Total Cover         |           | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 50% of total cover:   | 11           | 20%      | of total cover:      | 5         |  |
| Herb Stratum (Plot size: 30 )   |              |          |                      |           |  |
| 1. Toxicodendron radicans   |              | 20       | Yes                  |           | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be   |
| 2. Campsis radicans   |              | 10       | Yes                  | FAC       | present, unless disturbed or problematic.  |
| 3. Lonicera japonica  |              | 10       | Yes                  | FACU      | Definitions of Four Vegetation Strata:   |
| 4.  |              |          | <u> </u>             |           | <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or   |
| 5.  |              |          |                      |           | more in diameter at breast height (DBH), regardless of   |
|   |              |          |                      |           |  |
| 6.  |              |          |                      |           | height.  |
| ·   |              |          |                      |           | height.  |
| 6.<br>7.  | <br>         |          | <u> </u>             |           | height.  Sapling/Shrub – Woody plants, excluding vines, less   |
| 6.<br>7.<br>8.  | <br>         |          |                      |           | height.  |
| 6. 7. 8. 9.   | <br>         |          |                      |           | height.  Sapling/Shrub – Woody plants, excluding vines, less   |
| 6. 7. 8. 9. 10.   |              |          |                      |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless   |
| 6. 7. 8. 9. 10.   |              |          |                      |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.   |
| 6. 7. 8. 9. 10.   | <br><br><br> |          |                      |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.   |
| 6.  |              |          | =Total Cover         |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 6. 7. 8. 9. 10. 11. 12. 50% of total cover:   | 20           |          | =Total Cover         | 8         | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.   |
| 6.  |              |          |                      | 8         | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 6. 7. 8. 9. 10. 11. 12. 50% of total cover:   |              |          |                      |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 6.  | 20           | 20%      | of total cover:      |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 6.  | 20           | 20%      | of total cover:      |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 6.  | 20           | 20%      | of total cover:      |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 6.  | 20           | 20%      | of total cover:      |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in height.                         |
| 6.  | 20           | 5        | of total cover:  Yes |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in height.                         |
| 6. 7. 8. 9. 10. 11. 12.  50% of total cover:  Woody Vine Stratum (Plot size: 30  1. Vitis rotundifolia  2. 3. 4. 5. |              | 5        | Yes Yes Total Cover  |           | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |
| 6.  |              | 5 20%    | of total cover:  Yes | FAC       | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in height.                         |
| 6. 7. 8. 9. 10. 11. 12.  50% of total cover:  Woody Vine Stratum (Plot size: 30  1. Vitis rotundifolia  2. 3. 4. 5. |              | 5 20%    | Yes Yes Total Cover  | FAC       | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |
| 6.  |              | 5 20%    | Yes Yes Total Cover  | FAC       | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |
| 6.  |              | 5 20%    | Yes Yes Total Cover  | FAC       | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |
| 6.  |              | 5 20%    | Yes Yes Total Cover  | FAC       | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |
| 6.  |              | 5 20%    | Yes Yes Total Cover  | FAC       | height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |

SOIL Sampling Point: W007-UPL

|               | ription: (Describe t   | o the depti |                          |           |                   | ator or co       | onfirm the absence     | e of indic  | ators.)           |  |
|---------------|--|-------------|--------------------------|-----------|-------------------|------------------|------------------------|-------------|-------------------|--|
| Depth         | Matrix   |             |                          | K Featu   |                   | 12               | Tandona                |             | D                 |  |
| (inches)      | Color (moist)  | <u>%</u>    | Color (moist)            | <u>%</u>  | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                |             | Rem               | arks                                   |
| 0-20          | 10YR 5/3   | 95          | 10YR 5/4                 | 5         | С                 | M                | Loamy/Clayey           |             | silty             | oam                                    |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        | _           |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
| ¹Type: C=Co   | ncentration, D=Deple   | etion, RM=I | Reduced Matrix, N        | 1S=Mas    | ked San           | d Grains.        | <sup>2</sup> Location: | : PL=Pore   | e Lining, M=I     | Matrix.                                |
|               | ndicators: (Applical   |             |                          |           |                   |                  |                        |             | blematic Hy       |  |
| Histosol (    |  |             | Thin Dark Su             |           |                   | S, T, U)         | 1 cm                   | Muck (A9    | ) (LRR O)         |  |
| Histic Epi    | ipedon (A2)  |             | Barrier Island           | ds 1 cm   | Muck (S           | 12)              | 2 cm                   | Muck (A1    | 0) <b>(LRR S)</b> |  |
| Black His     | tic (A3)   |             | (MLRA 15                 | 3B, 153   | BD)               |                  | Coas                   | t Prairie R | Redox (A16)       |  |
| Hydroger      | n Sulfide (A4)   |             | Loamy Muck               | y Miner   | al (F1) <b>(L</b> | .RR O)           | (ou                    | tside MLI   | RA 150A)          |  |
| Stratified    | Layers (A5)  |             | Loamy Gleye              | ed Matri  | x (F2)            |                  | Redu                   | ced Vertic  | (F18)             |  |
| Organic E     | Bodies (A6) (LRR P,  | T, U)       | Depleted Ma              | trix (F3) | )                 |                  | (ou                    | tside MLI   | RA 150A, 15       | 0B)                                    |
|               | cky Mineral (A7) <b>(LR</b>                                  |             | Redox Dark               |           | ` '               |                  |                        |             |                   | F19) <b>(LRR P, T)</b>                 |
|               | esence (A8) (LRR U)  |             | Depleted Da              |           | ` '               |                  |                        |             | -                 | in Soils (F20)                         |
|               | ck (A9) (LRR P, T)   | (8.4.4)     | Redox Depre              |           | (F8)              |                  | •                      | RA 153B     | •                 |  |
|               | Below Dark Surface   | (A11)       | Marl (F10) <b>(L</b>     |           | 4) (MI D          | . 454)           |                        |             | iterial (F21)     | (500)                                  |
|               | rk Surface (A12)   | I DA 150A'  | Depleted Oc              | -         |                   |                  |                        |             | ark Surface       | ` '                                    |
|               | airie Redox (A16) ( <b>M</b><br>ucky Mineral (S1) <b>(LI</b> |             | Iron-Mangan Umbric Surfa |           |                   |                  |                        |             |                   | <b>A in FL, 154)</b><br>a Matrix (TS7) |
|               | eyed Matrix (S4)   | (i( 0, 3)   | Delta Ochric             |           |                   |                  |                        | -RA 153B    |                   | r Matrix (137)                         |
| Sandy Re      |  |             | Reduced Ve               |           |                   |                  |                        |             | in Remarks)       |  |
|               | Matrix (S6)  |             | Piedmont Flo             | -         |                   |                  |                        | (Ехріані    | iii r tomanto,    |  |
|               | face (S7) <b>(LRR P, S,</b>                                  | T, U)       | Anomalous E              |           |                   |                  |                        |             |                   |  |
|               | e Below Surface (S8)   |             | (MLRA 14                 | -         |                   | •                |                        | ators of h  | ydrophytic ve     | egetation and                          |
| (LRR S        |  |             | Very Shallow             | Dark S    | Surface (F        | -22)             | we                     | tland hydi  | rology must b     | pe present,                            |
|               |  |             | (MLRA 13                 | 8, 152A   | in FL, 1          | 54)              | unl                    | less distur | bed or probl      | ematic.                                |
| Restrictive L | ayer (if observed):  |             |                          |           |                   |                  |                        |             |                   |  |
| Type:         | None   | Э           |                          |           |                   |                  |                        |             |                   |  |
| Depth (in     | ches):   | 0           |                          |           |                   |                  | Hydric Soil Pre        | sent?       | Yes               | No X                                   |
| Remarks:      |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |
|               |  |             |                          |           |                   |                  |                        |             |                   |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                                  |                                  | City/County: Ripley/Lau               | uderdale                              | Sampling Date: 9/21/22    |
|---|----------------------------------|---------------------------------------|---------------------------------------|---------------------------|
| Applicant/Owner: Silicon Ranch Corporat                     | tion                             |                                       | State: TN                             | Sampling Point: W008-W    |
| Investigator(s): Benjamin Burdette and Jake                 | Irven Sec                        | tion, Township, Range:                |                                       |                           |
| Landform (hillside, terrace, etc.): toe of slop             |                                  | relief (concave, convex, ı            | none): concave                        | Slope (%): 2-5            |
| Subregion (LRR or MLRA): LRR P, MLRA 13                     |                                  | ,                                     |                                       | ,                         |
| ,   |                                  |                                       | 39.519715                             |                           |
| Soil Map Unit Name: Memphis silt loam, 12 t                 |                                  |                                       | NWI classificat                       | ion: N/A                  |
| Are climatic / hydrologic conditions on the site            | typical for this time of year?   | Yes X                                 | No (If no, e                          | explain in Remarks.)      |
| Are Vegetation, Soil, or Hydrol                             | ogysignificantly distur          | bed? Are "Normal C                    | ircumstances" present?                | Yes X No                  |
| Are Vegetation, Soil, or Hydrol                             | ogy naturally problema           | atic? (If needed, exp                 | olain any answers in Re               | emarks.)                  |
| SUMMARY OF FINDINGS – Attach                                | site map showing san             | npling point location                 | ons, transects, im                    | portant features, etc.    |
| Hydric Soil Present?  | Yes X No Yes X No Yes X No       | Is the Sampled Area within a Wetland? | Yes_X_                                | No                        |
| Remarks: PFO wetland; fringe to pond (OW1) DP15-W8          |                                  |                                       |                                       |                           |
| HYDROLOGY   |                                  |                                       |                                       |                           |
| Wetland Hydrology Indicators:                               |                                  |                                       | Secondary Indicators (                | (minimum of two required) |
| Primary Indicators (minimum of one is require               | ed; check all that apply)        |                                       | Surface Soil Crack                    |                           |
| Surface Water (A1)  | Aquatic Fauna (B13)              |                                       |                                       | ed Concave Surface (B8)   |
| High Water Table (A2)                                       | Marl Deposits (B15) (LR          |                                       | X Drainage Patterns                   |                           |
| Saturation (A3)   | Hydrogen Sulfide Odor (          | •                                     | Moss Trim Lines (                     | ·                         |
| Water Marks (B1)  | Oxidized Rhizospheres            | = : :                                 | Dry-Season Water                      |                           |
| Sediment Deposits (B2)                                      | Presence of Reduced Iro          |                                       | Crayfish Burrows                      |                           |
| Drift Deposits (B3)   | Recent Iron Reduction in         | 1 Tilled Soils (C6)                   |                                       | on Aerial Imagery (C9)    |
| Algal Mat or Crust (B4)                                     | Thin Muck Surface (C7)           | 1>                                    | X Geomorphic Posit                    |                           |
| Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7 | Other (Explain in Remar          | KS)                                   | Shallow Aquitard ( X FAC-Neutral Test |                           |
| X Water-Stained Leaves (B9)                                 | )                                |                                       | Sphagnum Moss (                       |                           |
| Field Observations:   |                                  |                                       | Opilagilalii Wooo (                   | (ERRY 1, <b>0</b> )       |
| Surface Water Present? Yes                                  | No X Depth (inches):             | 0                                     |                                       |                           |
|   | No X Depth (inches):             |                                       |                                       |                           |
| Saturation Present? Yes                                     | No X Depth (inches):             |                                       | Hydrology Present?                    | Yes X No                  |
| (includes capillary fringe)                                 | Dopur (monos).                   |                                       | lydrology i resent.                   | 100_χ_110                 |
| Describe Recorded Data (stream gauge, mo                    | nitoring well, aerial photos, pr | revious inspections), if a            | /ailable:                             |                           |
| ( 0   |                                  | , ,                                   |                                       |                           |
| Remarks:  |                                  |                                       |                                       |                           |
|   |                                  |                                       |                                       |                           |
|   |                                  |                                       |                                       |                           |
|   |                                  |                                       |                                       |                           |
|   |                                  |                                       |                                       |                           |
|   |                                  |                                       |                                       |                           |
|   |                                  |                                       |                                       |                           |
|   |                                  |                                       |                                       |                           |
|   |                                  |                                       |                                       |                           |
|   |                                  |                                       |                                       |                           |

| Salix nigra  Liquidambar styraciflua  50% of total cover: 30  sapling/Shrub Stratum (Plot size: 30 )  Salix nigra  Ulmus americana |           | Dominant Species? Yes No  =Total Cover | Indicator<br>Status<br>OBL<br>FAC | Dominance Test worksheet:  Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)  Total Number of Dominant Species Across All Strata: 4 (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/E) |
|--|-----------|--|-----------------------------------|--|
| Salix nigra  Liquidambar styraciflua  50% of total cover: 30  sapling/Shrub Stratum (Plot size: 30 )  Salix nigra                  | 50 10 60  | Yes<br>No                              | OBL                               | Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A) Total Number of Dominant Species Across All Strata: 4 (B) Percent of Dominant Species   |
| Liquidambar styraciflua  50% of total cover: 30  sapling/Shrub Stratum (Plot size: 30 )  Salix nigra                               | 10        | No                                     |                                   | That Are OBL, FACW, or FAC: 4 (A)  Total Number of Dominant Species Across All Strata: 4 (B)  Percent of Dominant Species  |
| 50% of total cover: 30 sapling/Shrub Stratum (Plot size: 30 )  | 60        |  |                                   | Total Number of Dominant Species Across All Strata:  Percent of Dominant Species  (B)  |
| sapling/Shrub Stratum (Plot size: 30 ) Salix nigra   |           | =Total Cover                           |                                   | Species Across All Strata: 4 (B)  Percent of Dominant Species  |
| sapling/Shrub Stratum (Plot size: 30 ) Salix nigra   |           | =Total Cover                           |                                   | Percent of Dominant Species  |
| sapling/Shrub Stratum (Plot size: 30 ) Salix nigra   |           | =Total Cover                           |                                   |  |
| sapling/Shrub Stratum (Plot size: 30 ) Salix nigra   |           | =Total Cover                           |                                   | I That Are ORL EACIN or EAC: 100.0% (A)  |
| sapling/Shrub Stratum (Plot size: 30 ) Salix nigra   |           | =Total Cover                           |                                   |  |
| sapling/Shrub Stratum (Plot size: 30 ) Salix nigra   |           | =Total Cover                           |                                   | Prevalence Index worksheet:  |
| apling/Shrub Stratum (Plot size: 30 ) Salix nigra  |           | =Total Cover                           |                                   | Total % Cover of: Multiply by:   |
| apling/Shrub Stratum (Plot size: 30 ) Salix nigra  | 20%       |  |                                   | OBL species 55 x 1 = 55  |
| Salix nigra  |           | of total cover:                        | 12                                | FACW species 0 x 2 = 0   |
| •  |           |  |                                   | FAC species 32 x 3 = 96  |
|  | 5         | Yes                                    | OBL                               | FACU species 5 x 4 = 20  |
| Ullius americana   | 5         | Yes                                    | FAC                               | UPL species 0 x 5 = 0  |
|  |           |  |                                   | Column Totals: 92 (A) 171 (I   |
|  |           |  |                                   | Prevalence Index = B/A = 1.86  |
|  |           |  |                                   | Hydrophytic Vegetation Indicators:   |
|  |           |  |                                   |  |
|  |           |  |                                   | 1 - Rapid Test for Hydrophytic Vegetation  |
|  |           |  |                                   | X 2 - Dominance Test is >50%   |
|  |           |  |                                   | X 3 - Prevalence Index is ≤3.0 <sup>1</sup>  |
|  |           | =Total Cover                           |                                   | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 50% of total cover: 5  | 20%       | of total cover:                        | 2                                 |  |
| erb Stratum (Plot size: 30 )   |           |  |                                   |  |
| Bignonia capreolata  | 15        | Yes                                    | FAC                               | <sup>1</sup> Indicators of hydric soil and wetland hydrology must  |
| Parthenocissus quinquefolia  | 5         | No                                     | FACU                              | present, unless disturbed or problematic.  |
| Panicum spp.   | 5         | No                                     |                                   | Definitions of Four Vegetation Strata:   |
| Toxicodendron radicans   | 2         | No                                     | FAC                               | Tree – Woody plants, excluding vines, 3 in. (7.6 cm)   |
|  |           |  |                                   | more in diameter at breast height (DBH), regardless  |
|  |           |  |                                   | height.  |
| <u> </u>   |           |  |                                   |  |
|  |           |  |                                   | Sapling/Shrub – Woody plants, excluding vines, les   |
|  |           |  |                                   | than 3 in. DBH and greater than 3.28 ft (1 m) tall.  |
|  |           |  |                                   |  |
| ·  |           |  |                                   | Herb – All herbaceous (non-woody) plants, regardles  |
| ·  |           |  |                                   | of size, and woody plants less than 3.28 ft tall.  |
| ·  |           |  |                                   |  |
|  | 27        | =Total Cover                           |                                   | Woody Vine - All woody vines greater than 3.28 ft in   |
| 50% of total cover: 14   | 20%       | of total cover:                        | 6                                 | height.  |
| Woody Vine Stratum (Plot size: 30 )  |           | •                                      |                                   |  |
|  |           |  |                                   |  |
|  |           |  |                                   |  |
|  |           |  |                                   |  |
|  |           |  |                                   |  |
|  |           |  |                                   |  |
|  |           |  |                                   | Hydrophytic  |
|  |           | =Total Cover                           |                                   | Vegetation   |
| 50% of total cover:  | 20%       | of total cover:                        |                                   | Present? Yes X No  |
| emarks: (If observed, list morphological adaptations   | a balaw ) |  |                                   | <u> </u>   |

SOIL Sampling Point: W008-W

| Depth                   | cription: (Describe<br>Matrix                      | to the dept   |                              | <b>ıment ti</b><br>x Featur |                   | ator or co       | onfirm the absence     | of indicators.)  |
|-------------------------|--|---------------|------------------------------|-----------------------------|-------------------|------------------|------------------------|--|
| (inches)                | Color (moist)                                      | %             | Color (moist)                | %                           | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                | Remarks  |
| 0-14                    | 10YR 5/3   | 70            | 10YR 6/2                     | 5                           | D                 | М                |                        | silt   |
| 14-20                   | 10YR 5/3   | 50            | 10YR 6/2                     | 30                          |                   | M                |                        | silt   |
| 14-20                   | 10113/3  |               | 10111 0/2                    | 30                          |                   | IVI              |                        | SIII   |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
| <sup>1</sup> Type: C=Co | oncentration, D=Dep                                | letion, RM=   | Reduced Matrix, N            | /IS=Mas                     | ked San           | d Grains.        | <sup>2</sup> Location: | PL=Pore Lining, M=Matrix.                                    |
| Hydric Soil             | Indicators: (Applica                               | able to all L | RRs, unless other            | rwise n                     | oted.)            |                  | Indicators             | for Problematic Hydric Soils <sup>3</sup> :                  |
| Histosol                | (A1)   |               | Thin Dark Su                 |                             |                   |                  |                        | luck (A9) <b>(LRR O)</b>                                     |
|                         | pipedon (A2)                                       |               | Barrier Island               |                             |                   | 312)             | 2 cm N                 | luck (A10) <b>(LRR S)</b>                                    |
| Black His               | ` '  |               | (MLRA 15                     | 3B, 153                     | D)                |                  | Coast                  | Prairie Redox (A16)  |
|                         | n Sulfide (A4)                                     |               | Loamy Muck                   | •                           | . , .             | LRR O)           | •                      | side MLRA 150A)  |
|                         | d Layers (A5)                                      |               | Loamy Gleye                  |                             | ` '               |                  |                        | ed Vertic (F18)  |
|                         | Bodies (A6) (LRR P                                 |               | Depleted Ma                  | ` '                         |                   |                  | •                      | side MLRA 150A, 150B)  |
|                         | icky Mineral (A7) <b>(LF</b>                       |               | Redox Dark                   |                             | ` '               |                  |                        | ont Floodplain Soils (F19) (LRR P, T)                        |
|                         | esence (A8) (LRR U                                 | )             | Depleted Da                  |                             | ` ,               |                  |                        | alous Bright Floodplain Soils (F20)                          |
|                         | ick (A9) (LRR P, T)                                | - (Δ44)       | Redox Depre                  |                             | (F8)              |                  | •                      | RA 153B)   |
|                         | d Below Dark Surface                               | e (ATT)       | Marl (F10) (L<br>Depleted Oc |                             | 1) (MI D          | A 454\           |                        | arent Material (F21)   |
|                         | ark Surface (A12)<br>rairie Redox (A16) ( <b>N</b> | AI DA 150A    |                              |                             |                   |                  |                        | hallow Dark Surface (F22)<br>side MLRA 138, 152A in FL, 154) |
|                         | lucky Mineral (S1) <b>(L</b>                       |               | Umbric Surfa                 |                             |                   |                  |                        | Islands Low Chroma Matrix (TS7)                              |
|                         | Gleyed Matrix (S4)                                 | .itit 0, 0)   | Delta Ochric                 |                             |                   |                  |                        | RA 153B, 153D)   |
|                         | ledox (S5)   |               | Reduced Ve                   |                             |                   |                  | •                      | Explain in Remarks)  |
|                         | Matrix (S6)  |               | Piedmont Flo                 | •                           | , ,               |                  |                        | xpiaiir iii r Ginarito)                                      |
|                         | rface (S7) <b>(LRR P, S</b>                        | s. T. U)      | Anomalous E                  | •                           | `                 | , ,              | •                      |  |
|                         | e Below Surface (S8                                |               | (MLRA 14                     | _                           |                   | •                |                        | tors of hydrophytic vegetation and                           |
|                         | S, T, U)   | ,             | Very Shallow                 |                             |                   |                  | wetl                   | and hydrology must be present,                               |
|                         |  |               | (MLRA 13                     | 8, 152A                     | in FL, 1          | 154)             | unle                   | ss disturbed or problematic.                                 |
| Restrictive I           | Layer (if observed):                               |               |                              |                             |                   |                  |                        |  |
| Type:                   | Nor  | ne            |                              |                             |                   |                  |                        |  |
| Depth (ir               | nches):  | 0             |                              |                             |                   |                  | Hydric Soil Pres       | ent? Yes <u>X</u> No   |
| Remarks:                |  |               |                              |                             |                   |                  |                        |  |
| 0-14 addition           | nal redox layer: 10YF                              | R 5/8 20% D   | ), L                         |                             |                   |                  |                        |  |
| 14-20 additio           | onal redox layer: 10Y                              | 'R 6/8 20%,   | C, M                         |                             |                   |                  |                        |  |
|                         | ·  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |
|                         |  |               |                              |                             |                   |                  |                        |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                                   | City/County: _F                                 | Ripley/Lauderdale Sampling Date: 9/21/2022       |
|--|---|--|
| Applicant/Owner: Silicon Ranch Corporati                     | on  | State: TN Sampling Point: W008-UPL               |
| Investigator(s): Benjamin Burdette and Jake II               | rvin Section, Township,                         |  |
| Landform (hillside, terrace, etc.): hillside                 |   | convex, none): convex Slope (%): 2-5             |
| Subregion (LRR or MLRA): LRR P, MLRA 13                      |   | Long: -89.519722 Datum: NAD83                    |
| Soil Map Unit Name: Memphis silt loam, 12 to                 |   |  |
| Are climatic / hydrologic conditions on the site             | typical for this time of year? Yes              | s X No (If no, explain in Remarks.)              |
| Are Vegetation, Soil, or Hydrold                             |   | Normal Circumstances" present? Yes X No          |
| Are Vegetation, Soil, or Hydrold                             |   | eded, explain any answers in Remarks.)           |
| <u> </u>   |   | t locations, transects, important features, etc. |
| Hydrophytic Vegetation Present?                              | Yes No X Is the Sample                          | ed Area  |
|  | Yes No X within a Wetla                         |  |
| Wetland Hydrology Present?                                   | Yes No X  |  |
| Upland point corresponding to W8; In cornfiel DP16-UP        | d<br>   |  |
| HYDROLOGY  |   |  |
| Wetland Hydrology Indicators:                                |   | Secondary Indicators (minimum of two required)   |
| Primary Indicators (minimum of one is require                |   | Surface Soil Cracks (B6)                         |
| Surface Water (A1)   | Aquatic Fauna (B13)                             | Sparsely Vegetated Concave Surface (B8)          |
| High Water Table (A2)  | Marl Deposits (B15) (LRR U)                     | Drainage Patterns (B10)                          |
| Saturation (A3)  | Hydrogen Sulfide Odor (C1)                      | Moss Trim Lines (B16)                            |
| Water Marks (B1)   | Oxidized Rhizospheres on Living Roots           |  |
| Sediment Deposits (B2)                                       | Presence of Reduced Iron (C4)                   | Crayfish Burrows (C8)                            |
| Drift Deposits (B3)  | Recent Iron Reduction in Tilled Soils (C        |  |
| Algal Mat or Crust (B4)                                      | Thin Muck Surface (C7)                          | Geomorphic Position (D2)                         |
| Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) | Other (Explain in Remarks)                      | Shallow Aquitard (D3) FAC-Neutral Test (D5)      |
| Water-Stained Leaves (B9)                                    |   | Sphagnum Moss (D8) (LRR T, U)                    |
| Field Observations:  |   | Opilagilalii Moss (20) (Elik 1, 0)               |
|  | No X Depth (inches): 0                          |  |
|  | No X Depth (inches): 0                          |  |
|  | <del></del> · · · <del></del>                   | Wetland Hydrology Present? Yes No X              |
| (includes capillary fringe)                                  |   |  |
| Describe Recorded Data (stream gauge, mor                    | nitoring well, aerial photos, previous inspecti | ions), if available:                             |
|  |   | ,  |
| Remarks:   |   |  |
| Tromac.  |   |  |
|  |   |  |
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|  |   |  |
|  |   |  |

|  | Absolute                           | Dominant                            | Indicator |  |
|--|------------------------------------|-------------------------------------|-----------|--|
| ee Stratum (Plot size: 30 )  | % Cover                            | Species?                            | Status    | Dominance Test worksheet:  |
|  |                                    |                                     |           | Number of Dominant Species   |
|  |                                    |                                     |           | That Are OBL, FACW, or FAC: 0 (A)  |
|  |                                    |                                     |           | Total Number of Dominant   |
|  |                                    |                                     |           | Species Across All Strata: 1 (B)   |
|  |                                    |                                     |           | ``   |
|  |                                    |                                     |           | Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/   |
| -  |                                    |                                     |           | Prevalence Index worksheet:  |
|  |                                    |                                     |           | Total % Cover of: Multiply by:   |
|  |                                    | =Total Cover                        |           | OBL species 0 x 1 = 0  |
| 50% of total cover:  |                                    | of total cover:                     |           | FACW species 0 x 2 = 0   |
| apling/Shrub Stratum (Plot size: 30  |                                    | or total cover.                     |           | FAC species 0 x3 = 0   |
| pilitg/Stillub Stiatuili (Flot Size  | _'                                 |                                     |           |  |
|  |                                    |                                     |           | <u> </u>   |
|  |                                    |                                     |           | UPL species 100 x 5 = 500  |
|  |                                    |                                     |           | Column Totals: 100 (A) 500 (   |
|  |                                    |                                     |           | Prevalence Index = B/A = 5.00  |
|  |                                    |                                     |           | Hydrophytic Vegetation Indicators:   |
|  |                                    |                                     |           | 1 - Rapid Test for Hydrophytic Vegetation  |
|  |                                    |                                     |           | 2 - Dominance Test is >50%   |
|  |                                    |                                     |           | 3 - Prevalence Index is ≤3.0 <sup>1</sup>  |
|  |                                    |                                     |           |  |
|  | 20%                                | =Total Cover<br>of total cover:     | LIDI      | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
|  |                                    |                                     | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  |
| b Stratum (Plot size: 30 )   | 20%                                | of total cover:                     | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  |
| b Stratum (Plot size: 30 )   | 20%                                | of total cover:                     | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm)  |
| b Stratum (Plot size: 30 )   | 20%                                | of total cover:                     | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  |
| b Stratum (Plot size:30 )  | 20%                                | of total cover:                     | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, less   |
| b Stratum (Plot size: 30 )   | 20%                                | of total cover:                     | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) more in diameter at breast height (DBH), regardless height.  |
| b Stratum (Plot size:30 )  | 20%                                | of total cover:                     | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, lest than 3 in. DBH and greater than 3.28 ft (1 m) tall.   |
| b Stratum (Plot size:30 )  Zea mays  | 100                                | of total cover:                     | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, less   |
| b Stratum (Plot size: 30 )  Zea mays   | 100                                | of total cover:                     | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology mus present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  |
| b Stratum (Plot size:30 )  Zea mays  | 100                                | Yes Yes                             |           | <sup>1</sup> Indicators of hydric soil and wetland hydrology mus present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm; more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall.   |
| Stratum (Plot size:  | 100                                | Yes Yes                             | UPL       | Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in the present than 3.28 ft |
| Stratum (Plot size:  | 100<br>100<br>100<br>50 20%        | Yes Yes                             |           | Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in the present than 3.28 ft |
| Stratum (Plot size:  | 100<br>100<br>100<br>50 20%        | Yes Yes                             |           | <sup>1</sup> Indicators of hydric soil and wetland hydrology mus present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, lest than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in   |
| Stratum (Plot size:  | 100<br>100<br>100<br>50 20%        | Yes Yes                             |           | Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in the present than 3.28 ft |
| Stratum (Plot size:  | 100<br>100<br>100<br>50 20%        | Yes Yes                             |           | Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in the present than 3.28 ft |
| Stratum (Plot size:30 )  Zea mays  50% of total cover:                                     | 100<br>100<br>100<br>50 20%        | Yes Yes                             |           | <sup>1</sup> Indicators of hydric soil and wetland hydrology mus present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, lest than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in   |
| Stratum (Plot size:30 )  Zea mays  50% of total cover:  Voody Vine Stratum (Plot size:30 ) | 100<br>100<br>100<br>50 20%        | Yes Yes Total Cover of total cover: |           | <sup>1</sup> Indicators of hydric soil and wetland hydrology must present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm; more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, lest than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft in height.   |
| Stratum (Plot size:30 )  Zea mays  50% of total cover:  Noody Vine Stratum (Plot size:30 ) | 100<br>100<br>100<br>100<br>50 20% | Yes Yes                             |           | <sup>1</sup> Indicators of hydric soil and wetland hydrology mus present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) more in diameter at breast height (DBH), regardless height.  Sapling/Shrub – Woody plants, excluding vines, lest than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  Woody Vine – All woody vines greater than 3.28 ft i height.   |

SOIL Sampling Point: W008-UPL

| Depth                     | ription: (Describe of Matrix                             | to the dept |                          | <b>ıment tı</b><br>x Featur |                   | ator or co       | onfirm the absence                                  | oi muicators.)                              |  |
|---------------------------|--|-------------|--------------------------|-----------------------------|-------------------|------------------|---|---|--|
| (inches)                  | Color (moist)  | %           | Color (moist)            | %                           | Type <sup>1</sup> | Loc <sup>2</sup> | Texture   | Remarks                                     |  |
| 0-15                      | 10YR 5/6   | 80          | 10YR 4/4                 | 10                          |                   | M                |   |   |  |
|                           |  |             |                          |                             |                   |                  |   | Durania ant and average and attack          |  |
| 15-20                     | 10YR 6/4   | 80          | 10YR 5/8                 | 20                          | С                 | M                |   | Prominent redox concentrations              |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
| ¹Type: C=Co               | ncentration, D=Dep                                       | letion, RM= | Reduced Matrix, N        | MS=Mas                      | ked San           | d Grains.        | <sup>2</sup> Location:                              | PL=Pore Lining, M=Matrix.                   |  |
|                           | ndicators: (Applica                                      |             |                          |                             |                   |                  |   | for Problematic Hydric Soils <sup>3</sup> : |  |
| Histosol                  | (A1)   |             | Thin Dark Su             | ırface (S                   | 9) <b>(LRR</b>    | 2 S, T, U)       | 1 cm M  | luck (A9) <b>(LRR O)</b>                    |  |
| Histic Ep                 | ipedon (A2)  |             | Barrier Island           | ds 1 cm                     | Muck (S           | 12)              | 2 cm M  | luck (A10) <b>(LRR S)</b>                   |  |
| Black His                 | ` '  |             | (MLRA 15                 | 3B, 153                     | D)                |                  | Coast F   | Prairie Redox (A16)                         |  |
|                           | n Sulfide (A4)   |             | Loamy Muck               | •                           | ` ' '             | RR O)            | •   | ide MLRA 150A)                              |  |
|                           | Layers (A5)  |             | Loamy Gleye              |                             | ` '               |                  |   | ed Vertic (F18)                             |  |
|                           | Bodies (A6) (LRR P,                                      |             | Depleted Ma              | ` '                         |                   |                  | •   | ide MLRA 150A, 150B)                        |  |
|                           | cky Mineral (A7) <b>(LR</b>                              |             | Redox Dark               |                             | ` '               |                  |   | ont Floodplain Soils (F19) (LRR P, T)       |  |
|                           | esence (A8) <b>(LRR U</b> )<br>ck (A9) <b>(LRR P, T)</b> | )           | Depleted Da  Redox Depre |                             | ` ,               |                  | Anomalous Bright Floodplain Soils (F20) (MLRA 153B) |   |  |
|                           | Below Dark Surface                                       | e (A11)     | Marl (F10) (L            |                             | (10)              |                  | •   | arent Material (F21)                        |  |
|                           | rk Surface (A12)   | 3 (7 (1 1)  | Depleted Oc              |                             | 1) <b>(MLR</b> .  | A 151)           |   | hallow Dark Surface (F22)                   |  |
|                           | airie Redox (A16) ( <b>N</b>                             | ILRA 150A   |                          |                             |                   |                  |   | ide MLRA 138, 152A in FL, 154)              |  |
|                           | ucky Mineral (S1) (L                                     |             | Umbric Surfa             |                             |                   |                  |   | Islands Low Chroma Matrix (TS7)             |  |
| Sandy G                   | leyed Matrix (S4)  |             | Delta Ochric             |                             |                   |                  | (MLR  | RA 153B, 153D)                              |  |
| Sandy R                   | edox (S5)  |             | Reduced Ve               | rtic (F18                   | ) (MLRA           | 150A, 1          | <b>50B)</b> Other (                                 | Explain in Remarks)                         |  |
| Stripped                  | Matrix (S6)  |             | Piedmont Flo             | oodplain                    | Soils (F          | 19) <b>(MLR</b>  | A 149A)   |   |  |
|                           | face (S7) <b>(LRR P, S</b>                               |             | Anomalous E              | Bright Fl                   | oodplain          | Soils (F2        | •   |   |  |
|                           | e Below Surface (S8                                      | 3)          | (MLRA 14                 |                             |                   |                  |   | tors of hydrophytic vegetation and          |  |
| (LRR S                    | S, T, U)   |             | Very Shallow             |                             | ,                 | ,                |   | and hydrology must be present,              |  |
|                           |  |             | (MLRA 13                 | 8, 152A                     | in FL, 1          | 54)              | unles   | ss disturbed or problematic.                |  |
|                           | .ayer (if observed):                                     |             |                          |                             |                   |                  |   |   |  |
| Type:                     | Nor  |             |                          |                             |                   |                  |   |   |  |
| Depth (in                 | ches):   | 0           |                          |                             |                   |                  | Hydric Soil Prese                                   | ent? Yes No X                               |  |
| Remarks:<br>0-15 addition | al redox layer color:                                    | 10YR 5/8 1  | 0% PL                    |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |
|                           |  |             |                          |                             |                   |                  |   |   |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II   |  | City/County: Ripley/Laud     | derdale                               | Sampling Date: 9/21/22    |
|--|--|------------------------------|---------------------------------------|---------------------------|
| Applicant/Owner: Silicon Ranch Corporate                             | tion                                       | ·                            | State: TN                             | Sampling Point: W009-W    |
| Investigator(s): Benjamin Burdette and Jake                          | Irven Sec                                  | ction, Township, Range:      |                                       | <del>-</del>              |
| Landform (hillside, terrace, etc.): easement                         | •  | relief (concave, convex, no  | one): concave                         | Slope (%): 0-2            |
| Subregion (LRR or MLRA): LRR P, MLRA 13                              |  | Long: -89                    | •                                     | Datum: NAD83              |
| Soil Map Unit Name: Memphis silt loam, 20 t                          |  |                              | NWI classificat                       |                           |
| Are climatic / hydrologic conditions on the site                     | typical for this time of year?             | Yes X                        | No (If no, e                          | explain in Remarks.)      |
| Are Vegetation, Soil, or Hydrol                                      | logy significantly distur                  |                              | cumstances" present?                  |                           |
| Are Vegetation, Soil, or Hydrol                                      | · · · · · · · · · · · · · · · · · · ·      |                              | ain any answers in Re                 |                           |
| SUMMARY OF FINDINGS – Attach   |  |                              | -                                     | •                         |
| Hydrophytic Vegetation Present?                                      | Yes X No                                   | Is the Sampled Area          |                                       |                           |
| Hydric Soil Present?   |  | within a Wetland?            | Yes X                                 | No                        |
| Wetland Hydrology Present?   | Yes X No                                   |                              |                                       |                           |
| Remarks: PFO and PSS wetland DP17-W9                                 |  |                              |                                       |                           |
| HYDROLOGY  |  |                              |                                       |                           |
| Wetland Hydrology Indicators:  |  | <u></u>                      | -                                     | (minimum of two required) |
| Primary Indicators (minimum of one is requir                         | ed; check all that apply)                  |                              | Surface Soil Crack                    |                           |
| Surface Water (A1)   | Aquatic Fauna (B13)                        | _                            |                                       | ed Concave Surface (B8)   |
| —— High Water Table (A2)   | Marl Deposits (B15) (LR                    | _                            | X Drainage Patterns                   |                           |
| Saturation (A3)  | Hydrogen Sulfide Odor (                    | _                            | Moss Trim Lines (                     | •                         |
| Water Marks (B1)   | X Oxidized Rhizospheres of                 | _                            | Dry-Season Water                      |                           |
| Sediment Deposits (B2)   | Presence of Reduced Iro                    | _                            | Crayfish Burrows                      |                           |
| Drift Deposits (B3)  | Recent Iron Reduction in                   | ` '                          |                                       | on Aerial Imagery (C9)    |
| Algal Mat or Crust (B4)  | Thin Muck Surface (C7)                     | _                            | Geomorphic Positi                     |                           |
| Iron Deposits (B5)   | Other (Explain in Remark                   | · ·                          | Shallow Aquitard (                    | ` '                       |
| Inundation Visible on Aerial Imagery (B7 X Water-Stained Leaves (B9) | )  | _                            | X FAC-Neutral Test<br>Sphagnum Moss ( |                           |
|  |  | <del></del>                  | Spriagrium woss (                     | Do) (LRK 1, U)            |
| Field Observations: Surface Water Present? Yes                       | No X Depth (inches):                       | 0                            |                                       |                           |
| Surface Water Present? Yes<br>Water Table Present? Yes               | No X Depth (inches):  No X Depth (inches): |                              |                                       |                           |
| Saturation Present? Yes  | No X Depth (inches):                       |                              | ydrology Present?                     | Yes X No                  |
| (includes capillary fringe)  | NO A Doptii (monos).                       |                              | yurology Fresent.                     | 163 <u>/</u> 110          |
| Describe Recorded Data (stream gauge, mo                             | nitoring well, aerial photos, pr           | revious inspections), if ava | ailable:                              |                           |
| B0001,80 1.0001,202 2.212 (2.2.2 3.2.2)                              | , , , , , , , , , , , , , , , , , , ,      | oviduo irrepositorita, irr   | alidato.                              |                           |
| Remarks:   |  | _                            | _                                     |                           |
| Tromane.   |  |                              |                                       |                           |
|  |  |                              |                                       |                           |
|  |  |                              |                                       |                           |
|  |  |                              |                                       |                           |
|  |  |                              |                                       |                           |
|  |  |                              |                                       |                           |
|  |  |                              |                                       |                           |
|  |  |                              |                                       |                           |
|  |  |                              |                                       |                           |

|  | Absolute                       | Dominant                            | Indicator   |  |   |                                      |
|--|--------------------------------|-------------------------------------|-------------|--|---|--------------------------------------|
| ee Stratum (Plot size:)  | % Cover                        | Species?                            | Status      | Dominance Test worksheet:  |   |                                      |
|  |                                |                                     |             | Number of Dominant Species   |   |                                      |
|  |                                |                                     |             | That Are OBL, FACW, or FAC:  | 3   | (A)                                  |
|  |                                |                                     |             | Total Number of Dominant   |   |                                      |
|  |                                |                                     |             | Species Across All Strata:   | 3   | (B)                                  |
|  |                                |                                     |             | Percent of Dominant Species  |   |                                      |
|  |                                |                                     |             | That Are OBL, FACW, or FAC:  | 100.0%  | (A/B)                                |
|  |                                |                                     |             | Prevalence Index worksheet:  |   | _                                    |
|  |                                |                                     |             | Total % Cover of:  | Multiply by:  |                                      |
|  |                                | =Total Cover                        |             | OBL species 15   | x 1 = 15  |                                      |
| 50% of total cover:  | 20%                            | of total cover:                     |             | FACW species 80  | x 2 = 160   |                                      |
| apling/Shrub Stratum (Plot size: 30 )                                      |                                |                                     |             | FAC species 10   | x 3 = 30  |                                      |
| Salix nigra  | 5                              | Yes                                 | OBL         | FACU species 0   | x 4 = 0   |                                      |
| Liquidambar styraciflua  | 10                             | Yes                                 | FAC         |  | x 5 = 0   |                                      |
|  |                                |                                     |             | Column Totals: 105 (A  | -   | <u> </u> (В                          |
|  |                                |                                     |             | Prevalence Index = B/A   | , <u> </u>  | (                                    |
|  |                                |                                     |             | Hydrophytic Vegetation Indica  |   | _                                    |
|  |                                |                                     |             | 1 - Rapid Test for Hydrophy  |   |                                      |
|  |                                |                                     |             | X 2 - Dominance Test is >50%   | •   |                                      |
|  |                                |                                     |             | <del></del>  |   |                                      |
|  |                                |                                     |             | X 3 - Prevalence Index is ≤3.0   |   |                                      |
| 50% of total cover:  |                                | =Total Cover of total cover:        | 3           | Problematic Hydrophytic Ve   | egetation (Expla  | ain)                                 |
| Juncus effusus   | 10                             | No                                  | OBL         | <sup>1</sup> Indicators of hydric soil and we  |   | must l                               |
|  | 10<br>80<br>10                 | No<br>Yes<br>No                     | OBL<br>FACW | <sup>1</sup> Indicators of hydric soil and we present, unless disturbed or pro <b>Definitions of Four Vegetation</b>   | blematic.   | must t                               |
| Juncus effusus Persicaria lapathifolia                                     | 80                             | Yes                                 |             | present, unless disturbed or pro   | blematic.<br>n Strata:  |                                      |
| Juncus effusus Persicaria lapathifolia                                     | 80                             | Yes                                 |             | present, unless disturbed or pro Definitions of Four Vegetation Tree – Woody plants, excluding more in diameter at breast height   | blematic.  n Strata: vines, 3 in. (7.6  | cm) c                                |
| Juncus effusus Persicaria lapathifolia                                     | 80                             | Yes                                 |             | present, unless disturbed or pro Definitions of Four Vegetation Tree – Woody plants, excluding   | blematic.  n Strata: vines, 3 in. (7.6  | cm) c                                |
| Juncus effusus Persicaria lapathifolia                                     | 80                             | Yes                                 |             | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  | blematic.<br>n Strata:<br>g vines, 3 in. (7.6<br>ht (DBH), regard   | i cm) c                              |
| Juncus effusus Persicaria lapathifolia                                     | 80                             | Yes                                 |             | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants  | n Strata: I vines, 3 in. (7.6 ht (DBH), regard  | i cm) c<br>lless c                   |
| Juncus effusus Persicaria lapathifolia                                     | 80                             | Yes                                 |             | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  | n Strata: I vines, 3 in. (7.6 ht (DBH), regard  | i cm) c<br>lless c                   |
| Juncus effusus Persicaria lapathifolia                                     | 80                             | Yes                                 |             | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast heigh height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than  | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard , excluding vines   | s cm) c<br>lless c<br>s, less<br>ll. |
| Juncus effusus Persicaria lapathifolia Carex spp.                          | 80                             | Yes                                 |             | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than  Herb – All herbaceous (non-wood)  | n Strata: y vines, 3 in. (7.6 ht (DBH), regard y, excluding vines 1 3.28 ft (1 m) ta  | s cm) c<br>lless c<br>s, less<br>ll. |
| Juncus effusus Persicaria lapathifolia                                     | 80                             | Yes                                 |             | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast heigh height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than  | n Strata: y vines, 3 in. (7.6 ht (DBH), regard y, excluding vines 1 3.28 ft (1 m) ta  | s cm) c<br>lless c<br>s, less<br>ll. |
| Juncus effusus Persicaria lapathifolia Carex spp.                          | 80                             | Yes<br>No                           |             | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than  Herb – All herbaceous (non-wood) of size, and woody plants less the                                       | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard  e, excluding vines n 3.28 ft (1 m) ta  ody) plants, regard han 3.28 ft tall. | s cm) c<br>lless o<br>s, less<br>ll. |
| Juncus effusus Persicaria lapathifolia Carex spp.                          | 80 10                          | Yes<br>No                           | FACW        | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than  Herb – All herbaceous (non-wood)  | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard  e, excluding vines n 3.28 ft (1 m) ta  ody) plants, regard han 3.28 ft tall. | s cm) c<br>lless o<br>s, less<br>ll. |
| Juncus effusus Persicaria lapathifolia Carex spp.  50% of total cover:5    | 80 10                          | Yes<br>No                           |             | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than Herb – All herbaceous (non-wood size, and woody plants less than Woody Vine – All woody vines              | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard  e, excluding vines n 3.28 ft (1 m) ta  ody) plants, regard han 3.28 ft tall. | s cm) o<br>lless c<br>s, less<br>ll. |
| Juncus effusus Persicaria lapathifolia Carex spp.  50% of total cover:5    | 80 10                          | Yes<br>No                           | FACW        | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than Herb – All herbaceous (non-wood size, and woody plants less than Woody Vine – All woody vines              | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard  e, excluding vines n 3.28 ft (1 m) ta  ody) plants, regard han 3.28 ft tall. | s cm) o<br>lless c<br>s, less<br>ll. |
| Juncus effusus Persicaria lapathifolia Carex spp.  50% of total cover:5    | 80 10                          | Yes<br>No                           | FACW        | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than Herb – All herbaceous (non-wood size, and woody plants less than Woody Vine – All woody vines              | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard  e, excluding vines n 3.28 ft (1 m) ta  ody) plants, regard han 3.28 ft tall. | s cm) o<br>lless o<br>s, less<br>ll. |
| Juncus effusus  Persicaria lapathifolia  Carex spp.  50% of total cover:5  | 80 10                          | Yes<br>No                           | FACW        | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than Herb – All herbaceous (non-wood size, and woody plants less than Woody Vine – All woody vines              | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard  e, excluding vines n 3.28 ft (1 m) ta  ody) plants, regard han 3.28 ft tall. | s cm) o<br>lless o<br>s, less<br>ll. |
| Juncus effusus  Persicaria lapathifolia  Carex spp.  50% of total cover:5  | 80 10                          | Yes<br>No                           | FACW        | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than Herb – All herbaceous (non-wood size, and woody plants less than Woody Vine – All woody vines              | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard  e, excluding vines n 3.28 ft (1 m) ta  ody) plants, regard han 3.28 ft tall. | s cm) o<br>lless o<br>s, less<br>ll. |
| Juncus effusus  Persicaria lapathifolia  Carex spp.  50% of total cover: 5 | 80 10                          | Yes<br>No                           | FACW        | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than Herb – All herbaceous (non-wood size, and woody plants less than Woody Vine – All woody vines              | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard  e, excluding vines n 3.28 ft (1 m) ta  ody) plants, regard han 3.28 ft tall. | s cm) c<br>lless o<br>s, less<br>ll. |
| Juncus effusus  Persicaria lapathifolia  Carex spp.  50% of total cover: 5 | 80<br>10<br>10<br>100<br>0 20% | Yes No  Total Cover of total cover: | FACW        | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than Herb – All herbaceous (non-wood size, and woody plants less than Woody Vine – All woody vines              | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard  e, excluding vines n 3.28 ft (1 m) ta  ody) plants, regard han 3.28 ft tall. | s cm) colless of s, less             |
| Juncus effusus Persicaria lapathifolia Carex spp.  50% of total cover: 5   | 80<br>10<br>10<br>100<br>0 20% | Yes<br>No                           | FACW        | present, unless disturbed or pro  Definitions of Four Vegetation  Tree – Woody plants, excluding more in diameter at breast height.  Sapling/Shrub – Woody plants than 3 in. DBH and greater than  Herb – All herbaceous (non-wood) of size, and woody plants less the  Woody Vine – All woody vines height. | blematic.  n Strata: y vines, 3 in. (7.6 ht (DBH), regard  e, excluding vines n 3.28 ft (1 m) ta  ody) plants, regard han 3.28 ft tall. | s cm) colless of s, less             |

SOIL Sampling Point: W009-W

|                   | cription: (Describe t<br>Matrix                    | to the dep |                    |               |                   | ator or co       | onfirm the absence     | of indicators.)                             |
|-------------------|--|------------|--------------------|---------------|-------------------|------------------|------------------------|---|
| Depth<br>(inches) | Color (moist)                                      | %          | Color (moist)      | x Featur<br>% | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                | Remarks                                     |
| 0-12              | 10YR 5/1   | 90         | 10YR 5/8           | 10            | .,,,,,            | PL               | Loamy/Clayey           | silt loam                                   |
| 12-20             | 10YR 6/3   | 90         | 10YR 5/6           | 10            | С                 | M                | Loamy/Clayey           | silt loam                                   |
|                   |  |            |                    |               |                   |                  |                        |   |
| ¹Type: C=Co       | oncentration, D=Depl                               | etion. RM  | =Reduced Matrix. N | <br>//S=Mas   | ked San           | d Grains.        | <sup>2</sup> Location: | <br>PL=Pore Lining, M=Matrix.               |
|                   | Indicators: (Applica                               |            |                    |               |                   | a Oranio.        |                        | for Problematic Hydric Soils <sup>3</sup> : |
| Histosol          |  |            | ้<br>Thin Dark Sเ  |               |                   | S, T, U)         |                        | luck (A9) <b>(LRR O)</b>                    |
| Histic Ep         | pipedon (A2)                                       |            | Barrier Island     | ds 1 cm       | Muck (S           | 12)              | 2 cm N                 | luck (A10) <b>(LRR S)</b>                   |
| Black His         | stic (A3)  |            | (MLRA 15           | 3B, 153       | D)                |                  | Coast                  | Prairie Redox (A16)                         |
| Hydroge           | n Sulfide (A4)                                     |            | Loamy Muck         | y Miner       | al (F1) <b>(L</b> | RR O)            | (outs                  | side MLRA 150A)                             |
|                   | l Layers (A5)                                      |            | Loamy Gleye        |               |                   |                  |                        | ed Vertic (F18)                             |
|                   | Bodies (A6) (LRR P,                                |            | X Depleted Ma      | ` '           |                   |                  | •                      | side MLRA 150A, 150B)                       |
|                   | icky Mineral (A7) (LR                              |            |                    |               | ` '               |                  |                        | ont Floodplain Soils (F19) (LRR P, T)       |
|                   | esence (A8) (LRR U)                                | )          | Depleted Da        |               |                   |                  |                        | llous Bright Floodplain Soils (F20)         |
|                   | ick (A9) <b>(LRR P, T)</b><br>d Below Dark Surface | (Δ11)      | Redox Depre        |               | (ГО)              |                  | •                      | RA 153B)<br>arent Material (F21)            |
|                   | ark Surface (A12)                                  | (7.11)     | Depleted Oc        |               | 1) (MLR           | A 151)           |                        | hallow Dark Surface (F22)                   |
|                   | rairie Redox (A16) ( <b>M</b>                      | LRA 150A   |                    |               |                   |                  |                        | side MLRA 138, 152A in FL, 154)             |
|                   | lucky Mineral (S1) <b>(L</b>                       |            | Umbric Surfa       |               |                   |                  |                        | Islands Low Chroma Matrix (TS7)             |
|                   | Sleyed Matrix (S4)                                 | . ,        | Delta Ochric       |               |                   |                  |                        | RA 153B, 153D)                              |
|                   | ledox (S5)   |            | Reduced Ve         |               |                   |                  | 50B) Other (           | Explain in Remarks)                         |
| Stripped          | Matrix (S6)  |            | Piedmont Flo       | oodplain      | Soils (F          | 19) <b>(MLR</b>  | A 149A)                |   |
| Dark Sui          | rface (S7) <b>(LRR P, S</b> ,                      | , T, U)    | Anomalous E        | Bright Fl     | oodplain          | Soils (F2        | (0)                    |   |
| Polyvalu          | e Below Surface (S8)                               | )          | (MLRA 14           | 9A, 153       | C, 153D           | )                |                        | tors of hydrophytic vegetation and          |
| (LRR              | S, T, U)   |            | Very Shallow       | / Dark S      | Surface (F        | <del>-</del> 22) | wetl                   | and hydrology must be present,              |
|                   |  |            | (MLRA 13           | 8, 152A       | in FL, 1          | 54)              | unle                   | ss disturbed or problematic.                |
| Restrictive I     | Layer (if observed):                               |            |                    |               |                   |                  |                        |   |
| Type:             | Non  | е          |                    |               |                   |                  |                        |   |
| Depth (ir         | nches):  | 0          |                    |               |                   |                  | Hydric Soil Pres       | ent? Yes X No                               |
| Remarks:          |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |
|                   |  |            |                    |               |                   |                  |                        |   |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                       |   | City/County: Ripley/Lau                           | uderdale                                  | Sampling Date: 9/21/2022  |  |  |  |
|--|---|---|---|---------------------------|--|--|--|
| Applicant/Owner: Silicon Ranch Corporat          | tion  |   | State: TN                                 | Sampling Point: W009-UPI  |  |  |  |
| Investigator(s): Benjamin Burdette and Jake      |   | tion, Township, Range:                            |   | - · ·                     |  |  |  |
| Landform (hillside, terrace, etc.): hillside, ea |   | elief (concave, convex,                           | none): convex                             | Slope (%): 0-2            |  |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA 13          |   | •   | 39.521545                                 | Datum: NAD83              |  |  |  |
| Soil Map Unit Name: Loring silt loam, 5 to 8     |   |   | NWI classificat                           | <del></del>               |  |  |  |
|  |   |   |   |                           |  |  |  |
| Are climatic / hydrologic conditions on the site | •   | Yes X   |   | explain in Remarks.)      |  |  |  |
| Are Vegetation, Soil, or Hydrol                  |   |   | Circumstances" present?                   |                           |  |  |  |
| Are Vegetation, Soil, or Hydrol                  | logynaturally problemat                         | tic? (If needed, exp                              | plain any answers in Re                   | emarks.)                  |  |  |  |
| SUMMARY OF FINDINGS – Attach                     | site map showing sam                            | ipling point location                             | ons, transects, im                        | portant features, etc.    |  |  |  |
| Hydrophytic Vegetation Present?                  | Yes No X I                                      | Is the Sampled Area                               |   |                           |  |  |  |
|  |   | within a Wetland?                                 | Yes                                       | No X                      |  |  |  |
|  | Yes No X  |   |   |                           |  |  |  |
| Remarks:   |   |   |   |                           |  |  |  |
| Upland point corresponding to W9                 |   |   |   |                           |  |  |  |
| DP18-UP  |   |   |   |                           |  |  |  |
|  |   |   |   |                           |  |  |  |
|  |   |   |   |                           |  |  |  |
|  |   |   |   |                           |  |  |  |
| HYDROLOGY  |   |   |   |                           |  |  |  |
| Wetland Hydrology Indicators:                    |   |   |   | (minimum of two required) |  |  |  |
| Primary Indicators (minimum of one is requir     |   | Surface Soil Crack                                | ,   |                           |  |  |  |
| Surface Water (A1)                               | <b>-</b> · · · ·                                |   | ed Concave Surface (B8)                   |                           |  |  |  |
| High Water Table (A2)                            | <b>R U)</b><br>C1)                              | Drainage Patterns (B10)                           |   |                           |  |  |  |
| Saturation (A3)                                  | Moss Trim Lines (                               |   |   |                           |  |  |  |
| Water Marks (B1)                                 | on Living Roots (C3)                            | Dry-Season Water Table (C2) Crayfish Burrows (C8) |   |                           |  |  |  |
| Sediment Deposits (B2)                           | Presence of Reduced Iron                        |   | Saturation Visible on Aerial Imagery (C9) |                           |  |  |  |
| Drift Deposits (B3)                              | Recent Iron Reduction in                        |   |   |                           |  |  |  |
| Algal Mat or Crust (B4) Iron Deposits (B5)       | Thin Muck Surface (C7) Other (Explain in Remark |   |   |                           |  |  |  |
| Inundation Visible on Aerial Imagery (B7         |   | (5)   | FAC-Neutral Test                          | ` '                       |  |  |  |
| Water-Stained Leaves (B9)                        | )   |   | Sphagnum Moss (                           |                           |  |  |  |
| Field Observations:                              |   |   |   | (50) (2, -,               |  |  |  |
| Surface Water Present? Yes                       | No X Depth (inches):                            | 0   |   |                           |  |  |  |
| Water Table Present? Yes                         | No X Depth (inches):                            | 0   |   |                           |  |  |  |
| Saturation Present? Yes                          | No X Depth (inches):                            |   | Hydrology Present?                        | Yes No X                  |  |  |  |
| (includes capillary fringe)                      |   |   | ,   | <del></del>               |  |  |  |
| Describe Recorded Data (stream gauge, mo         | nitoring well, aerial photos, pre               | evious inspections), if a                         | vailable:                                 |                           |  |  |  |
|  | -   |   |   |                           |  |  |  |
|  |   |   |   |                           |  |  |  |
| Remarks:   |   |   |   |                           |  |  |  |
|  |   |   |   |                           |  |  |  |
|  |   |   |   |                           |  |  |  |
|  |   |   |   |                           |  |  |  |
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|  |   |   |   |                           |  |  |  |
|  |   |   |   |                           |  |  |  |
|  |   |   |   |                           |  |  |  |
|  |   |   |   |                           |  |  |  |

## **VEGETATION** (Four Strata) – Use scientific names of plants.

| ree Stratum (Plot size: 30 ) %  50% of total cover: 50% of total cover: 50% of total cover: 30 )  Liquidambar styraciflua  50% of total cover: 50% | 10     | Species?        | FAC  | Number of Dominant Species That Are OBL, FACW, or FAC: 1  Total Number of Dominant Species Across All Strata: 2  Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0%  Prevalence Index worksheet:  Total % Cover of: Multiply by:  OBL species 0 x 1 = 0  FACW species 5 x 2 = 10  FAC species 10 x 3 = 30  FACU species 0 x 4 = 0  UPL species 90 x 5 = 450  Column Totals: 105 (A) 490  Prevalence Index = B/A = 4.67  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is ≤3.0¹  Problematic Hydrophytic Vegetation¹ (Explain   |
|--|--------|-----------------|------|--|
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )  Liquidambar styraciflua  50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  | 10     | Yes Yes         | FAC  | That Are OBL, FACW, or FAC: 1  Total Number of Dominant Species Across All Strata: 2  Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0%  Prevalence Index worksheet:   |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )  Liquidambar styraciflua  50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  | 10     | Yes Yes         | FAC  | Total Number of Dominant Species Across All Strata: 2  Percent of Dominant Species That Are OBL, FACW, or FAC: $50.0\%$ Prevalence Index worksheet: $1000$ Total % Cover of: Multiply by: $1000$ OBL species $1000$ FACW species $1000$ FAC species $1000$ FACU species $1000$ The spec  |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )  Liquidambar styraciflua  50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  | 10     | Yes Yes         | FAC  | Species Across All Strata: 2  Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0%  Prevalence Index worksheet:  Total % Cover of: Multiply by:  OBL species 0 x 1 = 0  FACW species 5 x 2 = 10  FAC species 10 x 3 = 30  FACU species 0 x 4 = 0  UPL species 90 x 5 = 450  Column Totals: 105 (A) 490  Prevalence Index = B/A = 4.67  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is $\leq 3.0^{1}$   |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )  Liquidambar styraciflua  50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  | 10     | Yes Yes         | FAC  | Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0%  Prevalence Index worksheet:  Total % Cover of: Multiply by:  OBL species 0 x 1 = 0  FACW species 5 x 2 = 10  FAC species 10 x 3 = 30  FACU species 0 x 4 = 0  UPL species 90 x 5 = 450  Column Totals: 105 (A) 490  Prevalence Index = B/A = 4.67  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is $\leq 3.0^{1}$   |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )  Liquidambar styraciflua  50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  | 10     | Yes Yes         | FAC  | That Are OBL, FACW, or FAC: $50.0\%$ Prevalence Index worksheet:  Total % Cover of: Multiply by:  OBL species $0$ $x 1 = 0$ FACW species $5$ $x 2 = 10$ FAC species $10$ $x 3 = 30$ FACU species $0$ $x 4 = 0$ UPL species $0$ $x 4 = 0$ UPL species $0$ $x 4 = 0$ UPL species $0$ $x = 0$ Prevalence Index $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$ $0$  |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )  Liquidambar styraciflua  50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  | 10     | Yes Yes         | FAC  | Prevalence Index worksheet:  Total % Cover of: Multiply by:  OBL species 0 x 1 = 0  FACW species 5 x 2 = 10  FAC species 10 x 3 = 30  FACU species 0 x 4 = 0  UPL species 90 x 5 = 450  Column Totals: 105 (A) 490  Prevalence Index = B/A = 4.67  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is ≤3.0¹   |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )  Liquidambar styraciflua  50% of total cover: 5  Solidago   Solidago   | 10     | Yes Yes         | FAC  | Total % Cover of: Multiply by:  OBL species 0 x 1 = 0  FACW species 5 x 2 = 10  FAC species 10 x 3 = 30  FACU species 0 x 4 = 0  UPL species 90 x 5 = 450  Column Totals: 105 (A) 490  Prevalence Index = B/A = 4.67  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is ≤3.0¹  |
| 50% of total cover:  Sapling/Shrub Stratum (Plot size: 30 )  Liquidambar styraciflua  50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  | 10     | Yes Yes         | FAC  | OBL species $0$ $x 1 = 0$ FACW species $5$ $x 2 = 10$ FAC species $10$ $x 3 = 30$ FACU species $0$ $x 4 = 0$ UPL species $90$ $x 5 = 450$ Column Totals: $105$ (A) $490$ Prevalence Index = B/A = $4.67$ Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation  2 - Dominance Test is >50%  3 - Prevalence Index is $\leq 3.0^{1}$   |
| Sapling/Shrub Stratum (Plot size: 30 )  Liquidambar styraciflua  50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago   | 10     | Yes Yes         | FAC  | FACW species $5$ $\times 2 = 10$ FAC species $10$ $\times 3 = 30$ FACU species $0$ $\times 4 = 0$ UPL species $90$ $\times 5 = 450$ Column Totals: $105$ (A) $490$ Prevalence Index = B/A = $4.67$ Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is $\leq 3.0^{1}$  |
| Sapling/Shrub Stratum (Plot size: 30 )  Liquidambar styraciflua  50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago   | 10     | Yes             | FAC  | FAC species $10$ $\times 3 = 30$ FACU species $0$ $\times 4 = 0$ UPL species $90$ $\times 5 = 450$ Column Totals: $105$ (A) $490$ Prevalence Index = B/A = $4.67$ Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is $\leq 3.0^{1}$   |
| Liquidambar styraciflua  50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago   | 10     | =Total Cover    | FAC  | FACU species $0 \times 4 = 0$ UPL species $90 \times 5 = 450$ Column Totals: $105 \times (A) \times 490$ Prevalence Index = B/A = $4.67$ Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is $\leq 3.0^{1}$  |
| 50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  | 10     | =Total Cover    | FAC  | UPL species 90 x 5 = 450  Column Totals: 105 (A) 490  Prevalence Index = B/A = 4.67  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is ≤3.0¹   |
| 50% of total cover: 5 erb Stratum (Plot size: 30 ) Solidago  |        |                 |      | Column Totals: 105 (A) 490  Prevalence Index = B/A = 4.67  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is ≤3.0¹   |
| 50% of total cover: 5 erb Stratum (Plot size: 30 ) Solidago  |        |                 |      | Prevalence Index = B/A = 4.67  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index is ≤3.0¹   |
| 50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  |        |                 |      | Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹   |
| 50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  |        |                 |      | 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup>   |
| 50% of total cover: 5 erb Stratum (Plot size: 30 ) Solidago  |        |                 |      | 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 <sup>1</sup>   |
| 50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  |        |                 |      | 3 - Prevalence Index is ≤3.0 <sup>1</sup>  |
| 50% of total cover: 5  erb Stratum (Plot size: 30 )  Solidago  |        |                 |      | 1 <del></del> 1  |
| erb Stratum (Plot size: 30 ) Solidago  |        |                 |      | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain   |
| erb Stratum (Plot size: 30 ) Solidago  | 20%    | of total cover: |      |  |
| Solidago   |        |                 | 2    |  |
|  |        |                 |      |  |
| Passiflora   | 90     | Yes             | UPL  | <sup>1</sup> Indicators of hydric soil and wetland hydrology r   |
| Fassiliola   | 5      | No              |      | present, unless disturbed or problematic.  |
| Vernonia noveboracensis  | 5      | No              | FACW | Definitions of Four Vegetation Strata:   |
|  |        |                 |      | Tree – Woody plants, excluding vines, 3 in. (7.6   |
|  |        |                 |      | more in diameter at breast height (DBH), regard  |
|  |        |                 |      | height.  |
|  |        |                 |      | One line of Ohershall Management and a second discussion of the original second of the |
|  |        |                 |      | Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than 3.28 ft (1 m) tall   |
|  |        |                 |      | than o m. BBT and groater than o.20 it (1 m) tan   |
| ).   |        |                 |      |  |
| 1  |        |                 |      | <b>Herb</b> – All herbaceous (non-woody) plants, regal of size, and woody plants less than 3.28 ft tall.   |
| 2.   |        |                 |      | or size, and woody plants less than 5.20 it tall.  |
|  | 100 :  | =Total Cover    |      | Woody Vine – All woody vines greater than 3.28   |
| 50% of total cover: 50   | 20%    | of total cover: | 20   | height.  |
| Woody Vine Stratum (Plot size: 30 )  |        |                 |      |  |
| · · · · · · · · · · · · · · · · · · ·  |        |                 |      |  |
|  |        |                 |      |  |
|  |        |                 |      |  |
|  |        |                 |      |  |
|  |        |                 |      |  |
| ·  |        | =Total Cover    |      | Hydrophytic  |
| 50% of total cover:  |        | of total cover: |      | Vegetation Present? Yes No X   |
| 50% of total cover:  |        | or total COVEI. |      | Present? Yes No X  |
| emarks: (If observed, list morphological adaptations b   | elow.) |                 |      |  |

W009-UPL

SOIL Sampling Point: W009-UPL

|  | ription: (Describe t         | o the depti |                   |           |                   | ator or co       | onfirm the absence                      | e of indic  | ators.)           |  |  |
|--|------------------------------|-------------|-------------------|-----------|-------------------|------------------|---|-------------|-------------------|--|--|
| Depth  | Matrix                       |             |                   | K Featu   |                   | 12               | Tandona                                 |             | D                 |  |  |
| (inches)   | Color (moist)                | <u>%</u>    | Color (moist)     | <u>%</u>  | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                                 |             | Rem               | arks                                   |  |
| 0-20   | 10YR 5/3                     | 95          | 10YR 5/4          | 5         | С                 | M                | Loamy/Clayey                            |             | silty             | oam                                    |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   | _           |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
| ¹Type: C=Co  | ncentration, D=Deple         | etion, RM=I | Reduced Matrix, N | 1S=Mas    | ked San           | d Grains.        | <sup>2</sup> Location:                  | : PL=Pore   | e Lining, M=I     | Matrix.                                |  |
|  | ndicators: (Applical         |             |                   |           |                   |                  |   |             | blematic Hy       |  |  |
| Histosol (   |                              |             | Thin Dark Su      |           |                   | S, T, U)         | 1 cm                                    | Muck (A9    | ) (LRR O)         |  |  |
| Histic Epi   | ipedon (A2)                  |             | Barrier Island    | ds 1 cm   | Muck (S           | 12)              | 2 cm                                    | Muck (A1    | 0) <b>(LRR S)</b> |  |  |
| Black His  | tic (A3)                     |             | (MLRA 15          | 3B, 153   | BD)               |                  | Coas                                    | t Prairie R | Redox (A16)       |  |  |
| Hydroger   | n Sulfide (A4)               |             | Loamy Muck        | y Miner   | al (F1) <b>(L</b> | .RR O)           | (ou                                     | tside MLI   | RA 150A)          |  |  |
| Stratified   | Layers (A5)                  |             | Loamy Gleye       | ed Matri  | x (F2)            |                  | Redu                                    | ced Vertic  | (F18)             |  |  |
| Organic E  | Bodies (A6) (LRR P,          | T, U)       | Depleted Ma       | trix (F3) | )                 |                  | (ou                                     | tside MLI   | RA 150A, 15       | 0B)                                    |  |
|  | cky Mineral (A7) <b>(LR</b>  |             | Redox Dark        |           | ` '               |                  |   |             |                   | F19) <b>(LRR P, T)</b>                 |  |
| Muck Presence (A8) (LRR U)Depleted Dark Surface (F7)   |                              |             |                   |           |                   |                  | Anomalous Bright Floodplain Soils (F20) |             |                   |  |  |
|  | ck (A9) (LRR P, T)           | (8.4.4)     | Redox Depre       |           | (F8)              |                  | •                                       | RA 153B     | •                 |  |  |
| Depleted Below Dark Surface (A11)  Marl (F10) (LRR U)  Dayleted Surface (A12)  |                              |             |                   |           |                   | . 454)           |   |             | iterial (F21)     | (500)                                  |  |
| Thick Dark Surface (A12) Depleted Ochric (F11) (MLRA 151) Coast Prairie Redox (A16) (MLRA 150A) Iron-Manganese Masses (F12) (LRF |                              |             |                   |           |                   |                  |   | ark Surface | ` '               |  |  |
|  | ucky Mineral (S1) <b>(LI</b> |             | Umbric Surfa      |           |                   |                  |   |             |                   | <b>A in FL, 154)</b><br>a Matrix (TS7) |  |
|  | eyed Matrix (S4)             | (i( 0, 3)   | Delta Ochric      |           |                   |                  |   | -RA 153B    |                   | r Matrix (137)                         |  |
| Sandy Re   |                              |             | Reduced Ve        |           |                   |                  |   |             | in Remarks)       |  |  |
|  | Matrix (S6)                  |             | Piedmont Flo      | -         |                   |                  |   | (Ехріані    | iii r tomanto,    |  |  |
|  | face (S7) <b>(LRR P, S,</b>  | T, U)       | Anomalous E       |           |                   |                  |   |             |                   |  |  |
|  | e Below Surface (S8)         |             | (MLRA 14          | -         |                   | •                |   | ators of h  | ydrophytic ve     | egetation and                          |  |
| (LRR S   |                              |             | Very Shallow      | Dark S    | Surface (F        | -22)             | wetland hydrology must be present,      |             |                   |  |  |
|  |                              |             | (MLRA 13          | 8, 152A   | in FL, 1          | 54)              | unless disturbed or problematic.        |             |                   |  |  |
| Restrictive L  | ayer (if observed):          |             |                   |           |                   |                  |   |             |                   |  |  |
| Type:  | None                         | Э           |                   |           |                   |                  |   |             |                   |  |  |
| Depth (in  | ches):                       | 0           |                   |           |                   |                  | Hydric Soil Pre                         | sent?       | Yes               | No X                                   |  |
| Remarks:   |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |
|  |                              |             |                   |           |                   |                  |   |             |                   |  |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                                    |                                  | City/County: Ripley/Lau               | derdale                 | Sampling Date: 9/22/22    |  |  |  |  |
|---|----------------------------------|---------------------------------------|-------------------------|---------------------------|--|--|--|--|
| Applicant/Owner: Silicon Ranch Corpora                        | ition                            | · <u>–</u>                            | State: TN               | Sampling Point: W010-W    |  |  |  |  |
| Investigator(s): Benjamin Burdette and Jake                   | Irven Sec                        | ction, Township, Range:               |                         |                           |  |  |  |  |
| Landform (hillside, terrace, etc.): depression                | _                                | relief (concave, convex, n            | one): concave           | Slope (%): 0-2            |  |  |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA 1                        | _                                | Long: -89                             |                         | Datum: NAD83              |  |  |  |  |
| Soil Map Unit Name: Memphis silt loam, 8 to                   |                                  |                                       | NWI classificat         |                           |  |  |  |  |
| Are climatic / hydrologic conditions on the site              | e typical for this time of year? | Yes X                                 | No (If no, e            | explain in Remarks.)      |  |  |  |  |
| Are Vegetation, Soil, or Hydro                                | ology significantly distur       |                                       | rcumstances" present?   |                           |  |  |  |  |
| Are Vegetation, Soil, or Hydro                                | ·                                |                                       | lain any answers in Re  |                           |  |  |  |  |
| SUMMARY OF FINDINGS – Attach                                  |                                  |                                       | -                       |                           |  |  |  |  |
| Hydrophytic Vegetation Present?                               | Yes X No                         | Is the Sampled Area                   |                         |                           |  |  |  |  |
| Hydric Soil Present?  |                                  | within a Wetland?                     | Yes_X_                  | No                        |  |  |  |  |
| Wetland Hydrology Present?                                    | Yes X No                         |                                       |                         |                           |  |  |  |  |
| Remarks: PEM wetland; water collects here but dry at DP19-W10 |                                  |                                       |                         |                           |  |  |  |  |
| HYDROLOGY   |                                  |                                       |                         |                           |  |  |  |  |
| Wetland Hydrology Indicators:                                 |                                  | <u> </u>                              | Secondary Indicators (  | (minimum of two required) |  |  |  |  |
| Primary Indicators (minimum of one is requi                   | red; check all that apply)       | _                                     | X Surface Soil Crack    |                           |  |  |  |  |
| Surface Water (A1)  | _                                | X Sparsely Vegetate                   | ed Concave Surface (B8) |                           |  |  |  |  |
| High Water Table (A2)   | Marl Deposits (B15) (LR          | R U) _                                | X Drainage Patterns     | (B10)                     |  |  |  |  |
| Saturation (A3)   | Hydrogen Sulfide Odor (          | -                                     | Moss Trim Lines (       | •                         |  |  |  |  |
| Water Marks (B1)  | Oxidized Rhizospheres            | _                                     | Dry-Season Water        |                           |  |  |  |  |
| Sediment Deposits (B2)  | Presence of Reduced Iro          | ` '                                   | Crayfish Burrows        |                           |  |  |  |  |
| Drift Deposits (B3)   | Recent Iron Reduction in         | -                                     |                         | on Aerial Imagery (C9)    |  |  |  |  |
| Algal Mat or Crust (B4)                                       | Thin Muck Surface (C7)           | _                                     | X Geomorphic Posit      | , ,                       |  |  |  |  |
| Iron Deposits (B5)  | Other (Explain in Remar          | ks) <u>-</u>                          | Shallow Aquitard (      | ` '                       |  |  |  |  |
| Inundation Visible on Aerial Imagery (B7                      | 7)                               | _                                     | FAC-Neutral Test        |                           |  |  |  |  |
| Water-Stained Leaves (B9)                                     |                                  | <u> </u>                              | Sphagnum Moss (         | (D8) <b>(LRR T, U)</b>    |  |  |  |  |
| Field Observations:   |                                  |                                       |                         |                           |  |  |  |  |
| Surface Water Present? Yes                                    | No X Depth (inches):             |                                       |                         |                           |  |  |  |  |
| Water Table Present? Yes                                      | No X Depth (inches):             |                                       |                         | , .,                      |  |  |  |  |
| Saturation Present? Yes                                       | No X Depth (inches):             | 0 Wetland H                           | lydrology Present?      | Yes <u>X</u> No           |  |  |  |  |
| (includes capillary fringe)                                   | **                               | · · · · · · · · · · · · · · · · · · · |                         |                           |  |  |  |  |
| Describe Recorded Data (stream gauge, mo                      | nitoring well, aerial photos, pr | evious inspections), if ava           | ailable:                |                           |  |  |  |  |
| Remarks:  |                                  |                                       |                         |                           |  |  |  |  |
| Nomano.   |                                  |                                       |                         |                           |  |  |  |  |
|   |                                  |                                       |                         |                           |  |  |  |  |
|   |                                  |                                       |                         |                           |  |  |  |  |
|   |                                  |                                       |                         |                           |  |  |  |  |
|   |                                  |                                       |                         |                           |  |  |  |  |
|   |                                  |                                       |                         |                           |  |  |  |  |
|   |                                  |                                       |                         |                           |  |  |  |  |
|   |                                  |                                       |                         |                           |  |  |  |  |
|   |                                  |                                       |                         |                           |  |  |  |  |
|   |                                  |                                       |                         |                           |  |  |  |  |

Sampling Point: W0

| 1   |              |                 |      | Number of Dominant Species  |
|---|--------------|-----------------|------|---|
| 3.  |              |                 |      | That Are OBL, FACW, or FAC: 1 (A)   |
|   |              |                 |      | Total Number of Dominant Species Across All Strata: 2 (B)   |
| 5   |              |                 |      | Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)   |
| 7   |              |                 |      | Prevalence Index worksheet:   |
| 8.  |              |                 |      | Total % Cover of: Multiply by:  |
| o   |              | =Total Cover    |      | OBL species 0 x 1 = 0   |
| E00/ of total cover                                     |              |                 |      | · — —   |
| 50% of total cover:                                     | _ 20%        | of total cover: |      |   |
| Sapling/Shrub Stratum (Plot size: 30 )                  |              |                 |      | FAC species 10 x 3 = 30   |
| 1   |              |                 |      | FACU species 0 x 4 = 0  |
| 2   |              |                 |      | UPL species10 x 5 =50   |
| 3   |              |                 |      | Column Totals: 25 (A) 90 (B)  |
| 4   |              |                 |      | Prevalence Index = B/A = 3.60   |
| 5   |              |                 |      | Hydrophytic Vegetation Indicators:  |
| 6   |              |                 |      | 1 - Rapid Test for Hydrophytic Vegetation   |
| 7.  |              |                 |      | 2 - Dominance Test is >50%  |
| 8.  |              |                 |      | 3 - Prevalence Index is ≤3.0 <sup>1</sup>   |
| -   |              | Total Cover     |      | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)   |
| 50% of total cover:                                     |              | of total cover: |      |   |
| Herb Stratum (Plot size: 30 )                           | _            |                 |      |   |
| Cyperus rotundus  | 10           | Yes             | FAC  | 1   |
|   | 5            |                 |      | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be  |
| 2. Coleataenia rigidula                                 |              | No No           | FACW | present, unless disturbed or problematic.   |
| 3. <u>Crotalaria</u>                                    | 5            | No              |      | Definitions of Four Vegetation Strata:  |
| 4. Glycine max  | 10           | Yes             | UPL  | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or   |
| 5   |              |                 |      | more in diameter at breast height (DBH), regardless of height.  |
| 6.  |              |                 |      | neight.   |
| 7   |              |                 |      | Sapling/Shrub – Woody plants, excluding vines, less   |
| 8   |              |                 |      | than 3 in. DBH and greater than 3.28 ft (1 m) tall.   |
| 9.  |              |                 |      | · · ·   |
| 10.   |              |                 |      | Harb All barbassaya (non woody) planta regardless   |
| 11  |              |                 |      | <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. |
| 12.   |              |                 |      | ,   |
|   | 30 :         | =Total Cover    |      | Woody Vine – All woody vines greater than 3.28 ft in  |
| 50% of total cover: 15                                  | 20%          | of total cover: | 6    | height.   |
| Woody Vine Stratum (Plot size: 30 )                     | <del>_</del> |                 |      |   |
| 1   |              |                 |      |   |
| 2.  |              |                 |      |   |
|   |              |                 |      |   |
|   |              |                 |      |   |
| 4   |              |                 |      |   |
| 5   |              |                 |      | Hydrophytic   |
|   |              | =Total Cover    |      | Vegetation  |
| 50% of total cover:                                     | 20%          | of total cover: |      | Present?  |
| Remarks: (If observed, list morphological adaptations b | elow.)       |                 |      |   |

SOIL Sampling Point: W010-W

|  | ription: (Describe t         | o the dep    |                   |  |                   | ator or co                 | onfirm the absenc                       | e of indicators.)                             |  |  |  |
|--|------------------------------|--------------|-------------------|--|-------------------|----------------------------|---|---|--|--|--|
| Depth<br>(inches)  | Matrix Color (maint)         | 0/           |                   | Featur   |                   | Loc <sup>2</sup>           | Toyturo                                 | Domonico                                      |  |  |  |
| (inches)   | Color (moist)                | <u>%</u>     | Color (moist)     | <u>%</u>   | Type <sup>1</sup> | LOC                        | Texture                                 | Remarks                                       |  |  |  |
| 0-10   | 10YR 4/4                     | 80           | 10YR 5/3          | 20   |                   |                            |   | fine silt                                     |  |  |  |
| 10-20  | 10YR 5/4                     | 50           | 10YR 4/6          | 50   |                   |                            |   | fine silt                                     |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  | _                            |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   | <u> </u>                                      |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
| <sup>1</sup> Type: C=Co  | ncentration, D=Deple         | etion, RM=   | Reduced Matrix, N | IS=Mas   | ked San           | d Grains.                  | <sup>2</sup> Location                   | : PL=Pore Lining, M=Matrix.                   |  |  |  |
| Hydric Soil Ir   | ndicators: (Applical         | ble to all l | RRs, unless othe  | rwise r  | noted.)           |                            | Indicator                               | s for Problematic Hydric Soils <sup>3</sup> : |  |  |  |
| Histosol (   | A1)                          |              | Thin Dark Su      | rface (S   | 59) <b>(LRR</b>   | S, T, U)                   | 1 cm                                    | Muck (A9) (LRR O)                             |  |  |  |
| Histic Epi   | pedon (A2)                   |              | Barrier Island    | ls 1 cm  | Muck (S           | 12)                        | 2 cm                                    | Muck (A10) (LRR S)                            |  |  |  |
| Black His  | tic (A3)                     |              | (MLRA 15          | 3B, 153  | BD)               |                            | Coas                                    | t Prairie Redox (A16)                         |  |  |  |
| Hydrogen   | Sulfide (A4)                 |              | Loamy Muck        | y Miner  | al (F1) <b>(L</b> | .RR O)                     | (ou                                     | tside MLRA 150A)                              |  |  |  |
| Stratified   | Layers (A5)                  |              | Loamy Gleye       | d Matri  | x (F2)            |                            | Redu                                    | ced Vertic (F18)                              |  |  |  |
| Organic E  | Bodies (A6) (LRR P,          | T, U)        | Depleted Ma       | trix (F3)  | )                 |                            | (ou                                     | tside MLRA 150A, 150B)                        |  |  |  |
| 5 cm Mucky Mineral (A7) (LRR P, T, U) Redox Dark Surface (F6)            |                              |              |                   |  |                   |                            | Piedr                                   | mont Floodplain Soils (F19) <b>(LRR P, T)</b> |  |  |  |
| Muck Presence (A8) (LRR U) Depleted Dark Surface (F7)                    |                              |              |                   |  |                   |                            | Anomalous Bright Floodplain Soils (F20) |   |  |  |  |
| 1 cm Muck (A9) (LRR P, T) Redox Depressions (F8)                         |                              |              |                   |  |                   |                            | (ML                                     | ₋RA 153B)                                     |  |  |  |
| Depleted   | Marl (F10) <b>(L</b>         | RR U)        |                   |  | Red I             | Parent Material (F21)      |   |   |  |  |  |
| Thick Dar  | Depleted Oct                 | nric (F1     | 1) <b>(MLR</b>    | A 151)   | Very              | Shallow Dark Surface (F22) |   |   |  |  |  |
| Coast Pra  | airie Redox (A16) ( <b>M</b> | LRA 150A     | ()Iron-Mangan     | ese Ma   | sses (F12         | 2) <b>(LRR (</b>           | O, P, T) (ou                            | tside MLRA 138, 152A in FL, 154)              |  |  |  |
|  | ucky Mineral (S1) <b>(LI</b> | RR O, S)     | Umbric Surfa      | -  |                   |                            |   | er Islands Low Chroma Matrix (TS7)            |  |  |  |
| Sandy Gleyed Matrix (S4)  Delta Ochric (F17) (MLRA 151)                  |                              |              |                   |  |                   | •                          | _RA 153B, 153D)                         |   |  |  |  |
| Sandy Redox (S5)  Reduced Vertic (F18) (MLRA 150A,                       |                              |              |                   |  |                   |                            | · —                                     | r (Explain in Remarks)                        |  |  |  |
| Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (ML                 |                              |              |                   |  |                   |                            |   |   |  |  |  |
| Dark Surface (S7) (LRR P, S, T, U)  Anomalous Bright Floodplain Soils (I |                              |              |                   |  |                   |                            |   |   |  |  |  |
| Polyvalue Below Surface (S8) (MLRA 149A) (LRR S, T, U) Very Shallow D    |                              |              |                   |  |                   |                            |   | cators of hydrophytic vegetation and          |  |  |  |
| (LRR S   | i, T, U)                     |              |                   | Very Shallow Dark Surface (F22)<br>(MLRA 138, 152A in FL, 154) |                   |                            | wetland hydrology must be present,      |   |  |  |  |
| Do atalastica I  | ('f -  \)                    |              | (MILRA 13         | 5, 152A  | in FL, 1          | 54)                        | un<br>I                                 | less disturbed or problematic.                |  |  |  |
| Type:  | ayer (if observed):<br>None  | Δ.           |                   |  |                   |                            |   |   |  |  |  |
| Depth (in  |                              | 0            |                   |  |                   |                            | Hydric Soil Pre                         | sent? Yes X No                                |  |  |  |
| Remarks:   |                              |              |                   |  |                   |                            | 11,411.0 00.1110                        | <u> </u>                                      |  |  |  |
|  | on top; disturbed soils      | s from agr   | iculture          |  |                   |                            |   |   |  |  |  |
| ·  | . ,                          | J            |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |
|  |                              |              |                   |  |                   |                            |   |   |  |  |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                        |  | City/County: Ripley/Laud            | derdale                   | Sampling Date: <u>9/22/2022</u> |  |  |
|---|--|-------------------------------------|---------------------------|---------------------------------|--|--|
| Applicant/Owner: Silicon Ranch Corporation        | on   | <del></del>                         | State: TN                 | Sampling Point: W010-UPI        |  |  |
| Investigator(s): Benjamin Burdette and Jake II    | rvin Sec                                       | tion, Township, Range:              |                           | - · ·                           |  |  |
| Landform (hillside, terrace, etc.): hillslope; so |  | relief (concave, convex, n          | one): concave             | Slope (%): 0-2                  |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA 13           |  | Long: -89                           |                           | Datum: NAD83                    |  |  |
| Soil Map Unit Name: Memphis silt loam, 8 to       | · · · · · · · · · · · · · · · · · · ·          |                                     | NWI classificat           |                                 |  |  |
| Are climatic / hydrologic conditions on the site  | typical for this time of year?                 | Yes X                               | No (If no, e              | explain in Remarks.)            |  |  |
| Are Vegetation, Soil, or Hydrold                  |  |                                     | rcumstances" present?     |                                 |  |  |
| Are Vegetation, Soil, or Hydrold                  |  |                                     | lain any answers in Re    |                                 |  |  |
| SUMMARY OF FINDINGS – Attach                      |  |                                     | -                         |                                 |  |  |
| Hydrophytic Vegetation Present?                   | Yes No X                                       | Is the Sampled Area                 |                           |                                 |  |  |
|   |  | within a Wetland?                   | Yes                       | No X                            |  |  |
|   | Yes No X                                       |                                     |                           |                                 |  |  |
| Remarks:  |  |                                     |                           |                                 |  |  |
| Upland point corresponding to W10                 |  |                                     |                           |                                 |  |  |
| DP20-UP   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
| HYDROLOGY   |  | _                                   |                           |                                 |  |  |
| Wetland Hydrology Indicators:                     | <u> </u>                                       | -                                   | (minimum of two required) |                                 |  |  |
| Primary Indicators (minimum of one is require     | ed; check all that apply)  Aquatic Fauna (B13) |                                     | Surface Soil Crack        |                                 |  |  |
| Surface Water (A1)                                | <del>-</del>                                   | Sparsely Vegetate Drainage Patterns | ed Concave Surface (B8)   |                                 |  |  |
| —_High Water Table (A2)                           | <del></del>                                    |                                     |                           |                                 |  |  |
| Saturation (A3)                                   | Moss Trim Lines (                              | •                                   |                           |                                 |  |  |
| —_ Water Marks (B1)                               | Dry-Season Water Table (C2)                    |                                     |                           |                                 |  |  |
| Sediment Deposits (B2)                            | on (C4)  | Crayfish Burrows (C8)               |                           |                                 |  |  |
| Drift Deposits (B3)                               | Recent Iron Reduction in                       | · · · · —                           |                           |                                 |  |  |
| Algal Mat or Crust (B4)                           | Thin Muck Surface (C7)                         |                                     |                           |                                 |  |  |
| Iron Deposits (B5)                                | Other (Explain in Remark                       |                                     |                           |                                 |  |  |
| Inundation Visible on Aerial Imagery (B7)         | 1  | _                                   | FAC-Neutral Test          | ` ,                             |  |  |
| Water-Stained Leaves (B9)                         |  | <del>_</del> <del>-</del>           | Sphagnum Moss (           | (D8) <b>(LRR T, U)</b>          |  |  |
| Field Observations:                               |  | _                                   |                           |                                 |  |  |
| <u></u>   | No X Depth (inches):                           |                                     |                           |                                 |  |  |
|   | No X Depth (inches):                           |                                     |                           |                                 |  |  |
|   | No X Depth (inches):                           | 0 Wetland H                         | lydrology Present?        | Yes No _X                       |  |  |
| (includes capillary fringe)                       |  |                                     |                           | _                               |  |  |
| Describe Recorded Data (stream gauge, mor         | itoring well, aerial photos, pre               | evious inspections), if ava         | ailable:                  |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
| Remarks:  |  |                                     |                           |                                 |  |  |
| Remarks.  |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |
|   |  |                                     |                           |                                 |  |  |

W010-UPL **VEGETATION** (Four Strata) – Use scientific names of plants. Sampling Point: Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: 30 ) % Cover Species? Status **Dominance Test worksheet:** 1. **Number of Dominant Species** 2. That Are OBL, FACW, or FAC: (A) 3. **Total Number of Dominant** Species Across All Strata: 1 (B) 5. Percent of Dominant Species 6. That Are OBL, FACW, or FAC: 0.0% (A/B) Prevalence Index worksheet: Total % Cover of: =Total Cover **OBL** species x 1 = 50% of total cover: 20% of total cover: **FACW** species x 2 = 0 x 3 = Sapling/Shrub Stratum (Plot size: 30 ) **FAC** species 0 x 4 = **FACU** species 1. UPL species 100 x 5 = 2. 500 Column Totals: 100 500 3. (A) (B) Prevalence Index = B/A = 5.00 5. **Hydrophytic Vegetation Indicators:** 6. 1 - Rapid Test for Hydrophytic Vegetation 7. 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.01 Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) =Total Cover 50% of total cover: 20% of total cover: Herb Stratum (Plot size: 30 ) \_\_\_\_100 1. Glycine max <sup>1</sup>Indicators of hydric soil and wetland hydrology must be 2. present, unless disturbed or problematic. 3. **Definitions of Four Vegetation Strata:** 4. Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of 5. height. 6. 7. Sapling/Shrub - Woody plants, excluding vines, less 8. than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 100 =Total Cover Woody Vine - All woody vines greater than 3.28 ft in height. 50% of total cover: 50 20% of total cover: Woody Vine Stratum (Plot size: 30 ) 2. 3. 4. **Hydrophytic** =Total Cover Vegetation 50% of total cover: 20% of total cover: Present? No X Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: W010-UPL

| Depth  | ription: (Describe t<br>Matrix                   | to the dep    |                      | ı <b>ment ti</b><br>‹ Featur |                   | ator or co       | onfirm th | e absence (              | of indic  | ators.)      |             |     |
|--|--|---------------|----------------------|------------------------------|-------------------|------------------|-----------|--------------------------|-----------|--------------|-------------|-----|
| (inches)   | Color (moist)                                    | %             | Color (moist)        | %                            | Type <sup>1</sup> | Loc <sup>2</sup> | Te        | xture                    |           | Ren          | narks       |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
| 0-20   | 10YR 6/6   | 40            | 10YR 5/6             | 50                           | С                 | <u>M</u>         |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  | -         |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
| 1- 0.0   |  | <del></del>   |                      |                              |                   |                  |           | 21 11                    |           |              |             |     |
| • •  | oncentration, D=Depl                             |               |                      |                              |                   | d Grains.        |           | <sup>2</sup> Location: I |           |              |             | 3.  |
| -  | Indicators: (Applica                             | ible to all I |                      |                              |                   | . C. T. III      |           | Indicators               |           | -            | aric Solis  | -:  |
| Histosol   |  |               | Thin Dark Su         | -                            |                   |                  |           |                          |           | ) (LRR O)    |             |     |
|  | pipedon (A2)                                     |               | Barrier Island       |                              | •                 | 12)              |           |                          |           | 0) (LRR S)   |             |     |
| Black His  | ` '  |               | (MLRA 15             |                              | •                 |                  |           |                          |           | edox (A16)   |             |     |
|  | n Sulfide (A4)                                   |               | Loamy Muck           | •                            | · , ·             | .RR O)           |           | `                        |           | RA 150A)     |             |     |
|  | I Layers (A5)                                    |               | Loamy Gleye          |                              |                   |                  |           |                          | ed Vertic | ,            |             |     |
|  | Bodies (A6) (LRR P,                              |               | Depleted Ma          | , ,                          |                   |                  |           | •                        |           | RA 150A, 1   | •           |     |
|  | cky Mineral (A7) (LR                             |               | Redox Dark           |                              | ` '               |                  |           |                          |           | dplain Soils |             |     |
|  | esence (A8) (LRR U)                              | )             | Depleted Da          |                              |                   |                  |           |                          |           | ght Floodpla | in Soils (F | 20) |
|  | 1 cm Muck (A9) (LRR P, T) Redox Depressions (F8) |               |                      |                              |                   |                  |           | •                        | A 153B    | •            |             |     |
| Depleted Below Dark Surface (A11) Marl (F10) (LRR U) |  |               |                      |                              |                   |                  |           |                          |           | terial (F21) |             |     |
|  | rk Surface (A12)                                 |               | Depleted Oc          | hric (F1                     | 1) <b>(MLR</b>    | A 151)           |           | Very Sh                  | nallow D  | ark Surface  | (F22)       |     |
|  | airie Redox (A16) ( <b>M</b>                     |               | <b>)</b> Iron-Mangan | ese Ma                       | sses (F1          | 2) <b>(LRR (</b> | O, P, T)  | (outs                    | ide MLF   | RA 138, 152  | A in FL, 1  | 54) |
| Sandy M  | lucky Mineral (S1) <b>(L</b>                     | .RR O, S)     | Umbric Surfa         | ice (F13                     | 3) <b>(LRR I</b>  | P, T, U)         |           | Barrier                  | Islands   | Low Chrom    | a Matrix (T | S7) |
| Sandy G  | leyed Matrix (S4)                                |               | Delta Ochric         | (F17) <b>(I</b>              | VILRA 1           | 51)              |           | (MLR                     | A 153B    | , 153D)      |             |     |
| Sandy R  | edox (S5)  |               | Reduced Ver          | tic (F18                     | ) (MLRA           | 150A, 1          | 50B)      | Other (                  | Explain   | in Remarks)  | )           |     |
| Stripped   | Matrix (S6)                                      |               | Piedmont Flo         | odplain                      | Soils (F          | 19) <b>(MLR</b>  | RA 149A)  |                          |           |              |             |     |
| Dark Sur   | face (S7) (LRR P, S                              | , T, U)       | Anomalous E          | Bright Fl                    | oodplain          | Soils (F2        | 20)       |                          |           |              |             |     |
| Polyvalu   | e Below Surface (S8                              | )             | (MLRA 14             | 9A, 153                      | C, 153D           | )                |           | <sup>3</sup> Indicat     | ors of h  | ydrophytic v | egetation a | and |
| (LRR   | S, T, U)   |               | Very Shallow         | Dark S                       | Surface (I        | <del>-</del> 22) |           | wetla                    | ınd hydr  | ology must   | be present  | .,  |
|  |  |               | (MLRA 13             | 8, 152A                      | in FL, 1          | 54)              |           | unles                    | s distur  | bed or prob  | lematic.    |     |
| Restrictive L  | _ayer (if observed):                             |               |                      |                              |                   |                  |           |                          |           |              |             |     |
| Type:  | Non  | ie            |                      |                              |                   |                  |           |                          |           |              |             |     |
| Depth (ir  | nches):  | 0             |                      |                              |                   |                  | Hydrid    | Soil Prese               | nt?       | Yes          | No_         | X   |
| Remarks:   |  |               |                      |                              |                   |                  |           |                          |           | -            |             |     |
| Dual matrix:   | 1-YR 6/6 10%                                     |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |
|  |  |               |                      |                              |                   |                  |           |                          |           |              |             |     |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II  |                                   | City/County: Ripley/La  | uderdale                    | Sampling Date: 9/22/22    |  |  |  |  |
|---|-----------------------------------|---|-----------------------------|---------------------------|--|--|--|--|
| Applicant/Owner: Silicon Ranch Corpora                                | ution                             |   | State: TN                   | Sampling Point: W011-W    |  |  |  |  |
| Investigator(s): Benjamin Burdette and Jake                           | Irven See                         | ction, Township, Range:   | <del></del>                 |                           |  |  |  |  |
| Landform (hillside, terrace, etc.): depression                        |                                   | relief (concave, convex,  |                             | Slope (%): 0-2            |  |  |  |  |
|   |                                   | ,   |                             |                           |  |  |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA 1                                |                                   |   | 89.518312                   | <del></del>               |  |  |  |  |
| Soil Map Unit Name: Adler silt loam, 0 to 2 p                         | percent slopes, occasionally to   |   | NWI classificat             |                           |  |  |  |  |
| Are climatic / hydrologic conditions on the site                      | e typical for this time of year?  | Yes X   | No (If no, e                | explain in Remarks.)      |  |  |  |  |
| Are Vegetation, Soil, or Hydro  | logysignificantly disturb         | rbed? Are "Normal C   | Circumstances" present      | ? Yes X No                |  |  |  |  |
| Are Vegetation, Soil, or Hydro  | ologynaturally problem            | atic? (If needed, ex  | plain any answers in Re     | emarks.)                  |  |  |  |  |
| SUMMARY OF FINDINGS – Attach  | ı site map showing sar            | mpling point locati   | ons, transects, im          | portant features, etc.    |  |  |  |  |
| Hydrophytic Vegetation Present?                                       | Yes X No                          | Is the Sampled Area   |                             |                           |  |  |  |  |
| Hydric Soil Present?  | Yes X No                          | within a Wetland? Yes X No  |                             |                           |  |  |  |  |
| Wetland Hydrology Present?  | Yes X No                          |   |                             |                           |  |  |  |  |
| PEM wetland; water collects here but dry at DP21-W11                  | time of survey                    |   |                             |                           |  |  |  |  |
| HYDROLOGY   |                                   |   |                             |                           |  |  |  |  |
| Wetland Hydrology Indicators:   |                                   |   | Secondary Indicators        | (minimum of two required) |  |  |  |  |
| Primary Indicators (minimum of one is requi                           | red; check all that apply)        |   | X Surface Soil Crack        |                           |  |  |  |  |
| Surface Water (A1)  | Aquatic Fauna (B13)               |   |                             | ed Concave Surface (B8)   |  |  |  |  |
| High Water Table (A2)   | Marl Deposits (B15) (LF           |   | X Drainage Patterns         |                           |  |  |  |  |
| Saturation (A3)   | Hydrogen Sulfide Odor             |   |                             |                           |  |  |  |  |
| Water Marks (B1)  | Oxidized Rhizospheres             | = : :   | Dry-Season Wate             |                           |  |  |  |  |
| Sediment Deposits (B2)  | Presence of Reduced Ir            | <u> </u>  |                             |                           |  |  |  |  |
| Drift Deposits (B3)   |                                   | uction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9) |                             |                           |  |  |  |  |
| Algal Mat or Crust (B4)   | Thin Muck Surface (C7)            | <del></del>   |                             |                           |  |  |  |  |
| Iron Deposits (B5)  | Other (Explain in Rema            | rks)  | Shallow Aquitard            | ` '                       |  |  |  |  |
| Inundation Visible on Aerial Imagery (B                               | 7)                                |   | FAC-Neutral Test            |                           |  |  |  |  |
| Water-Stained Leaves (B9)   |                                   | <del></del>   | Sphagnum Moss               | (D8) (LRR 1, U)           |  |  |  |  |
| Field Observations:   |                                   | _   |                             |                           |  |  |  |  |
| Surface Water Present? Yes  | No X Depth (inches):              |   |                             |                           |  |  |  |  |
|   | No X Depth (inches):              |   | Illandra I a mar Bura a m40 | Waa V Na                  |  |  |  |  |
| Saturation Present? Yes   | No X Depth (inches):              | : 0 Wetland   | Hydrology Present?          | Yes X No                  |  |  |  |  |
| (includes capillary fringe)  Describe Recorded Data (stream gauge, mo | onitoring wall, porial photos, n  | vrovious inspections) if a  | vailable:                   |                           |  |  |  |  |
| Describe Recorded Data (siteam gauge, mo                              | milloring well, aeriai priotos, p | revious irispections), ii a   | valiable.                   |                           |  |  |  |  |
| Remarks:  |                                   |   |                             |                           |  |  |  |  |
| Nemarks.  |                                   |   |                             |                           |  |  |  |  |
|   |                                   |   |                             |                           |  |  |  |  |
|   |                                   |   |                             |                           |  |  |  |  |
|   |                                   |   |                             |                           |  |  |  |  |
|   |                                   |   |                             |                           |  |  |  |  |
|   |                                   |   |                             |                           |  |  |  |  |
|   |                                   |   |                             |                           |  |  |  |  |
|   |                                   |   |                             |                           |  |  |  |  |
|   |                                   |   |                             |                           |  |  |  |  |
|   |                                   |   |                             |                           |  |  |  |  |

| <u>Tree Stratum</u> (Plot size:30)                    | Absolute<br>% Cover | Dominant Species? | Indicator<br>Status | Dominance Test worksheet:  |
|---|---------------------|-------------------|---------------------|--|
| 1.  |                     |                   |                     | Number of Dominant Species   |
| 2.  |                     |                   |                     | That Are OBL, FACW, or FAC:(A)                                       |
| 3.  |                     |                   |                     | Total Number of Dominant   |
| 4.  |                     |                   |                     | Species Across All Strata: 2 (B)                                     |
| 5.<br>6.  |                     |                   |                     | Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)  |
| 7   |                     |                   |                     | Prevalence Index worksheet:  |
| 0   |                     |                   |                     | Total % Cover of: Multiply by:                                       |
| o   |                     | Total Cover       |                     | OBL species 0 x 1 = 0  |
| 50% of total cover:                                   |                     | of total cover:   |                     | FACW species 5 x 2 = 10  |
| Sapling/Shrub Stratum (Plot size: 30 )                |                     |                   |                     | FAC species 10 x 3 = 30  |
| 1.  |                     |                   |                     | FACU species 0 x 4 = 0   |
| 2.  |                     |                   |                     | UPL species 10 x 5 = 50  |
| 3.  |                     |                   |                     | Column Totals: 25 (A) 90 (B)   |
| 4.  |                     |                   |                     | Prevalence Index = B/A = 3.60  |
| 5.  |                     |                   |                     | Hydrophytic Vegetation Indicators:                                   |
| 6.  |                     |                   |                     | 1 - Rapid Test for Hydrophytic Vegetation                            |
| 7.  |                     |                   |                     | 2 - Dominance Test is >50%   |
| 8.  |                     |                   |                     | 3 - Prevalence Index is ≤3.0 <sup>1</sup>                            |
|   |                     | =Total Cover      |                     | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)            |
| 50% of total cover:                                   | 20%                 | of total cover:   |                     |  |
| Herb Stratum (Plot size: 30 )                         |                     |                   |                     |  |
| 1. Cyperus rotundus                                   | 10                  | Yes               | FAC                 | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be |
| 2. Coleataenia rigidula                               | 5                   | No                | FACW                | present, unless disturbed or problematic.                            |
| 3. Crotalaria   | 5                   | No                |                     | Definitions of Four Vegetation Strata:                               |
| 4. Glycine max  | 10                  | Yes               | UPL                 | <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or       |
| 5   |                     |                   |                     | more in diameter at breast height (DBH), regardless of height.       |
| 6.  |                     |                   |                     | Holght.  |
| 7.  |                     |                   |                     | Sapling/Shrub – Woody plants, excluding vines, less                  |
| 8.  |                     |                   |                     | than 3 in. DBH and greater than 3.28 ft (1 m) tall.                  |
| 9.  |                     |                   |                     |  |
| 10.   |                     |                   |                     | <b>Herb</b> – All herbaceous (non-woody) plants, regardless          |
| 11.   |                     |                   |                     | of size, and woody plants less than 3.28 ft tall.                    |
| 12  | 30 =                | =Total Cover      |                     | Woody Vine – All woody vines greater than 3.28 ft in                 |
| 50% of total cover: 15                                |                     | of total cover:   | 6                   | height.  |
| Woody Vine Stratum (Plot size: 30 )                   | 2070                | or total cover.   |                     |  |
| 1.  |                     |                   |                     |  |
|   |                     |                   |                     |  |
| 3   |                     |                   |                     |  |
| 4.  |                     |                   |                     |  |
| 5.  |                     |                   |                     |  |
|   |                     | =Total Cover      |                     | Hydrophytic<br>Vegetation  |
| 50% of total cover:                                   |                     | of total cover:   |                     | Present? Yes X No  |
| Remarks: (If observed, list morphological adaptation  |                     |                   | •                   |  |
| Remarks. (III observed, list morphological adaptation | s below.)           |                   |                     |  |
|   |                     |                   |                     |  |
|   |                     |                   |                     |  |
|   |                     |                   |                     |  |
|   |                     |                   |                     |  |

SOIL Sampling Point: W011-W

|  | ription: (Describe t          | o the dep            |                   |  |                   | ator or co  | onfirm the absence                      | of indicators.)                               |  |  |  |
|--|-------------------------------|----------------------|-------------------|--|-------------------|---|---|---|--|--|--|
| Depth<br>(inches)  | Matrix                        | 0/                   |                   | Featur   |                   | Loc <sup>2</sup>                                      | Toytura                                 | Domarka                                       |  |  |  |
| (inches)   | Color (moist)                 | <u>%</u>             | Color (moist)     | <u>%</u>                                       | Type <sup>1</sup> | LOC   | Texture                                 | Remarks                                       |  |  |  |
| 0-10   | 10YR 4/4                      | 80                   | 10YR 5/3          | 20   |                   |   |   | fine silt                                     |  |  |  |
| 10-20  | 10YR 5/4                      | 50                   | 10YR 4/6          | 50   |                   |   |   | fine silt                                     |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   | · <del></del>                                 |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
| <sup>1</sup> Type: C=Co  | ncentration, D=Deple          | etion, RM=           | Reduced Matrix, M | IS=Mas   | ked San           | d Grains.   | <sup>2</sup> Location:                  | PL=Pore Lining, M=Matrix.                     |  |  |  |
|  | ndicators: (Applica           |                      |                   |  |                   |   |   | s for Problematic Hydric Soils <sup>3</sup> : |  |  |  |
| Histosol (   | (A1)                          |                      | Thin Dark Su      | rface (S                                       | 59) <b>(LRR</b>   | S, T, U)  | 1 cm                                    | Muck (A9) (LRR O)                             |  |  |  |
| Histic Epi   | ipedon (A2)                   |                      | Barrier Island    | ls 1 cm  | Muck (S           | 12)   | 2 cm                                    | Muck (A10) <b>(LRR S)</b>                     |  |  |  |
| Black Histic (A3) (MLRA 153B, 153D)  |                               |                      |                   |  |                   |   | Coast                                   | Prairie Redox (A16)                           |  |  |  |
| Hydroger   | n Sulfide (A4)                |                      | Loamy Muck        | y Miner  | al (F1) <b>(L</b> | .RR O)  | (out                                    | side MLRA 150A)                               |  |  |  |
| Stratified   | Layers (A5)                   |                      | Loamy Gleye       | ed Matri                                       | x (F2)            |   | Reduc                                   | ced Vertic (F18)                              |  |  |  |
| Organic E  | Bodies (A6) (LRR P,           | T, U)                | Depleted Ma       | trix (F3)                                      | )                 |   | (out                                    | side MLRA 150A, 150B)                         |  |  |  |
|  | cky Mineral (A7) <b>(LR</b>   |                      | Redox Dark        |  | ` '               |   |   | nont Floodplain Soils (F19) <b>(LRR P, T)</b> |  |  |  |
| Muck Presence (A8) (LRR U) Depleted Dark Surface (F7)  |                               |                      |                   |  |                   |   | Anomalous Bright Floodplain Soils (F20) |   |  |  |  |
| 1 cm Muck (A9) (LRR P, T) Redox Depressions (F8)   |                               |                      |                   |  |                   |   | •                                       | RA 153B)                                      |  |  |  |
|  | Below Dark Surface            | Marl (F10) <b>(L</b> |                   |  |                   |   | Parent Material (F21)                   |   |  |  |  |
| Thick Dai  | Depleted Oct                  | -                    |                   |  |                   | Shallow Dark Surface (F22)                            |   |   |  |  |  |
| Coast Pra  | <del></del>                   |                      |                   |  |                   | side MLRA 138, 152A in FL, 154)                       |   |   |  |  |  |
|  | ucky Mineral (S1) <b>(L</b> I | KK (J, S)            | Umbric Surfa      | -  |                   |   |   | r Islands Low Chroma Matrix (TS7)             |  |  |  |
| Sandy Gleyed Matrix (S4) Sandy Redox (S5) Delta Ochric (F17) (MLRA 151) Reduced Vertic (F18) (MLRA 150A, |                               |                      |                   |  |                   | •   | RA 153B, 153D)                          |   |  |  |  |
| Stripped Matrix (S6)  Stripped Matrix (S6)  Piedmont Floodplain Soils (F19) (MLKA 1904,                  |                               |                      |                   |  |                   |   |   | (Explain in Remarks)                          |  |  |  |
| Dark Surface (S7) (LRR P, S, T, U)  Anomalous Bright Floodplain Soils (F19) (ML                          |                               |                      |                   |  |                   |   |   |   |  |  |  |
| Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D)   |                               |                      |                   |  |                   | <sup>3</sup> Indicators of hydrophytic vegetation and |   |   |  |  |  |
|  |                               |                      | •                 | Very Shallow Dark Surface (F22)                |                   |   | wetland hydrology must be present,      |   |  |  |  |
| (2   | ,, ., .,                      |                      |                   | (MLRA 138, 152A in FL, 154)                    |                   |   |   | unless disturbed or problematic.              |  |  |  |
| Restrictive L  | ayer (if observed):           |                      | •                 | <u>,                                      </u> | · ·               |   |   | ·   |  |  |  |
| Туре:  | None                          | е                    |                   |  |                   |   |   |   |  |  |  |
| Depth (in  | ches):                        | 0                    |                   |  |                   |   | Hydric Soil Pres                        | sent? Yes X No                                |  |  |  |
| Remarks:   |                               |                      |                   |  |                   |   |   |   |  |  |  |
| Silt deposits of   | on top; disturbed soil        | s from agr           | iculture          |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |
|  |                               |                      |                   |  |                   |   |   |   |  |  |  |

# WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

| Project/Site: SR Ripley II                        | City/County: Ripley                                  | //Lauderdale Sampling Date: 9/22/2022          |  |  |  |  |
|---|--|--|--|--|--|--|
| Applicant/Owner: Silicon Ranch Corporati          | ion  | State: TN Sampling Point: W011-UPL             |  |  |  |  |
| Investigator(s): Benjamin Burdette and Jake I     | Irvin Section, Township, Rang                        | <u> </u>                                       |  |  |  |  |
| Landform (hillside, terrace, etc.): hillslope; so |  |  |  |  |  |  |
| Subregion (LRR or MLRA): LRR P, MLRA 13           | <u> </u>   | g: -89.518225 Datum: NAD83                     |  |  |  |  |
| Soil Map Unit Name: Adler silt loam, 0 to 2 pe    |  | NWI classification: N/A                        |  |  |  |  |
| Are climatic / hydrologic conditions on the site  | typical for this time of year? Yes X                 | No (If no, explain in Remarks.)                |  |  |  |  |
| Are Vegetation, Soil, or Hydrok                   |  | al Circumstances" present? Yes X No            |  |  |  |  |
| Are Vegetation , Soil , or Hydrold                | <del></del>  | , explain any answers in Remarks.)             |  |  |  |  |
| <del></del>                                       |  | eations, transects, important features, etc.   |  |  |  |  |
| Hydrophytic Vegetation Present?                   | Yes No X Is the Sampled Are                          | ea   |  |  |  |  |
|   | Yes No X within a Wetland?                           |  |  |  |  |  |
|   | Yes No X   |  |  |  |  |  |
| Remarks:  | ·  | 1  |  |  |  |  |
| Upland point corresponding to W11                 |  |  |  |  |  |  |
| DP22-UP   |  |  |  |  |  |  |
|   |  |  |  |  |  |  |
|   |  |  |  |  |  |  |
|   |  |  |  |  |  |  |
| HYDROLOGY   |  |  |  |  |  |  |
| Wetland Hydrology Indicators:                     |  | Secondary Indicators (minimum of two required) |  |  |  |  |
| Primary Indicators (minimum of one is require     |  | Surface Soil Cracks (B6)                       |  |  |  |  |
| Surface Water (A1)                                | Aquatic Fauna (B13)                                  | Sparsely Vegetated Concave Surface (B8)        |  |  |  |  |
| High Water Table (A2)                             | Marl Deposits (B15) (LRR U)                          | Drainage Patterns (B10)                        |  |  |  |  |
| Saturation (A3)                                   | Hydrogen Sulfide Odor (C1)                           | Moss Trim Lines (B16)                          |  |  |  |  |
| Water Marks (B1)                                  | Oxidized Rhizospheres on Living Roots (C3)           |  |  |  |  |  |
| Sediment Deposits (B2)                            | Presence of Reduced Iron (C4)                        | Crayfish Burrows (C8)                          |  |  |  |  |
| Drift Deposits (B3)                               | Recent Iron Reduction in Tilled Soils (C6)           |  |  |  |  |  |
| Algal Mat or Crust (B4)                           | Thin Muck Surface (C7)                               |  |  |  |  |  |
| Iron Deposits (B5)                                | Other (Explain in Remarks)                           | · · · · · · · · · · · · · · · · · · ·          |  |  |  |  |
| Inundation Visible on Aerial Imagery (B7)         | )  | FAC-Neutral Test (D5)                          |  |  |  |  |
| Water-Stained Leaves (B9)                         |  | Sphagnum Moss (D8) (LRR T, U)                  |  |  |  |  |
| Field Observations:                               |  |  |  |  |  |  |
| Surface Water Present? Yes                        | No X Depth (inches): 0                               |  |  |  |  |  |
|   | No X Depth (inches): 0                               |  |  |  |  |  |
| Saturation Present? Yes                           | No X Depth (inches): 0 Wetlan                        | and Hydrology Present? Yes No _X               |  |  |  |  |
| (includes capillary fringe)                       | " '  | W 0.11.  |  |  |  |  |
| Describe Recorded Data (stream gauge, mor         | nitoring well, aerial photos, previous inspections), | if available:                                  |  |  |  |  |
|   |  |  |  |  |  |  |
| Remarks:  |  |  |  |  |  |  |
| Nemano.   |  |  |  |  |  |  |
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|   |  |  |  |  |  |  |

### **VEGETATION (Four Strata)** – Use scientific names of plants.

| 1.   | Tree Stratum (Plot size: 30 )                         | Absolute<br>% Cover | Dominant<br>Species? | Indicator<br>Status | Dominance Test worksheet:                        |            |
|--|---|---------------------|----------------------|---------------------|--|------------|
| Note   Committed a package   Committed a p |   | 70 COVEI            | Species :            | Status              |  |            |
| 4.   Species Across Al Strata.   1 (B)   5.   Percent of Dominant Species   That Are OBL, FACV, or FACC   0.0% (A/B)   7.   =Total Cover   S0% of total cover:   20% of total cover:   FAC Species   0 x 1 = 0   5.0% of total cover:   20% of total cover:   FAC Species   0 x 2 = 0   7.   Sapling/Shrub Stratum (Plot size: 30 )   FACU species   0 x 4 = 0   7.   Prevalence Index worksheet:   Total Yc Over of   | 2.  |                     |                      |                     |  | (A)        |
| Percent of Dominant Species   That Ave OBL, FACW, or FAC:  | 3.  |                     |                      |                     | Total Number of Dominant                         |            |
| Federal of College   Federal | 4   |                     |                      |                     | Species Across All Strata: 1                     | (B)        |
| Prevalence Index worksheet:  | 5.  |                     |                      |                     |  |            |
| Total % Cover of: Multiply by:   Sapilinal Shrub Stratum   (Plot size: 30   )  |   |                     |                      |                     |  | (A/B)      |
| Sapiling/Shrub Stratum   Flot size: 30   30   30   30   30   30   30   30  |   |                     |                      |                     |  |            |
| FACW species   0   | 8.  |                     |                      |                     |  | <u>':</u>  |
| Sapling/Shrub Stratum (Plot size: 30   )   |   |                     |                      |                     |  |            |
| 1.   |   | 20%                 | of total cover:      |                     |  |            |
| 2.   |   |                     |                      |                     |  |            |
| 3.   |   |                     |                      |                     |  |            |
| Prevalence Index = B/A =   5.00  | -   |                     |                      |                     |  |            |
| Hydrophytic Vegetation Indicators:   1 - Rapid Test for Hydrophytic Vegetation   |   |                     |                      |                     |  | ` ′        |
| 1 - Rapid Test for Hydrophytic Vegetation   2 - Dominance Test is >50%   3 - Prevalence Index is \$3.01   Problematic Hydrophytic Vegetation   1. Glycine max  |   |                     |                      |                     |  |            |
| 7. 8. 2 - Dominance Test is >50% 8. 2 - Total Cover 50% of total cover: 20% of total cover:    Herb Stratum (Plot size: 30 )   1.  |   |                     |                      |                     |  |            |
| 8.   | -   |                     |                      |                     | <u> </u>   |            |
| ### Stratum (Plot size:  | -   |                     |                      |                     | - I  |            |
| Solid of total cover:  | 0.  |                     | -Total Cover         |                     | <del></del>                                      | alain)     |
| Herb Stratum (Plot size: 30 )  1. Glycine max  | 50% of total cover:                                   |                     |                      |                     | Froblematic Hydrophytic Vegetation (Exp          | лант)      |
| 1. Glycine max   |   | 20%                 | oi total cover.      |                     |  |            |
| 2.   Illitations of Four Vegetation Strata:   Definitions of Four Vegetation Strata:   Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.   Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.  |   | 100                 | Voo                  | LIDI                |  |            |
| Definitions of Four Vegetation Strata:   |   | 100                 | 168                  | UPL                 |  | y must be  |
| 4.   |   |                     |                      |                     |  |            |
| 5.   |   |                     |                      |                     | _  |            |
| height.  |   |                     |                      |                     |  |            |
| 7.   |   |                     |                      |                     |  | 101033 01  |
| 8.   | <u> </u>  |                     |                      |                     |  |            |
| 9.   |   |                     |                      |                     |  |            |
| 10   | <u> </u>  |                     |                      |                     | than 3 in. DBH and greater than 3.28 ft (1 m)    | tall.      |
| 11   |   |                     |                      |                     |  |            |
| 100  | 11  |                     |                      |                     |  |            |
| 100  |   |                     |                      |                     | of size, and woody plants less than 3.28 ft tall |            |
| Solid total cover:   50   20% of total cover:   20   height.   | 12.   | 100                 | =Total Cover         |                     | Woody Vine – All woody vines greater than 3      | 28 ft in   |
| Woody Vine Stratum (Plot size: 30 )   1.   | 50% of total cover: 50                                |                     |                      | 20                  |  | .20 11 111 |
| 1  |   | 2070                | or total cover.      |                     |  |            |
| 2.   | 1   |                     |                      |                     |  |            |
| 3  | 0   |                     |                      |                     |  |            |
| 4  |   |                     |                      |                     |  |            |
| 5. Hydrophytic  =Total Cover Vegetation  50% of total cover: 20% of total cover: Present? Yes No X   | 1   |                     |                      |                     |  |            |
| =Total Cover Vegetation 50% of total cover: 20% of total cover: Present? Yes No X  |   |                     |                      |                     |  |            |
| 50% of total cover: 20% of total cover: Present? Yes No _X   | J   |                     | -Total Cover         |                     |  |            |
|  | 50% of total cover:                                   |                     |                      |                     | _  |            |
| Remarks: (If observed, list morphological adaptations below.)  |   |                     | or total cover.      |                     | 11636HC: 163 NOX                                 |            |
|  | кетнагкs: (II observed, list morphological adaptation | is delow.)          |                      |                     |  |            |
|  |   |                     |                      |                     |  |            |

W011-UPL

Sampling Point:

SOIL Sampling Point: W011-UPL

| Profile Desc<br>Depth | ription: (Describe t<br>Matrix | o the dept   |                      | <b>ıment tl</b><br>x Featur |                   | ator or co       | onfirm the absen      | ce of indic  | ators.)       |                           |
|-----------------------|--------------------------------|--------------|----------------------|-----------------------------|-------------------|------------------|-----------------------|--------------|---------------|---------------------------|
| (inches)              | Color (moist)                  | %            | Color (moist)        | % " Catur                   | Type <sup>1</sup> | Loc <sup>2</sup> | Texture               |              | Ren           | narks                     |
| (ITICITES)            | Color (moist)                  |              | Color (moist)        |                             | Туре              |                  | Texture               |              | IXen          | ilai KS                   |
| 0-20                  | 10YR 6/6                       | 40           | 10YR 5/6             | 50                          | <u>C</u>          | M                |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       | _            |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             | <u> </u>          |                  |                       |              |               |                           |
| ¹Type: C=Cc           | oncentration, D=Deple          | etion RM=I   | Reduced Matrix N     | <br>1S=Mas                  | ked San           | d Grains         | <sup>2</sup> I ocatio | n: PI =Por   | e Lining, M=  | Matrix                    |
|                       | ndicators: (Applical           |              |                      |                             |                   | d Oranis.        |                       |              |               | dric Soils <sup>3</sup> : |
| Histosol              |                                | oic to all E | Thin Dark Su         |                             |                   | S T U)           |                       |              | ) (LRR O)     | , and cons .              |
|                       | ipedon (A2)                    |              | Barrier Island       |                             |                   |                  |                       |              | 0) (LRR S)    |                           |
| Black His             |                                |              | (MLRA 15             |                             |                   | ,                |                       | •            | Redox (A16)   |                           |
|                       | n Sulfide (A4)                 |              | Loamy Muck           |                             |                   | RR O)            |                       | utside ML    |               |                           |
|                       | Layers (A5)                    |              | Loamy Gleye          | -                           |                   | 0,               | •                     | uced Vertic  | •             |                           |
|                       | Bodies (A6) (LRR P,            | T. U)        | Depleted Ma          |                             |                   |                  |                       |              | RA 150A, 1    | 50B)                      |
|                       | cky Mineral (A7) (LR           |              | Redox Dark           | ,                           |                   |                  | •                     |              | •             | (F19) <b>(LRR P, T)</b>   |
|                       | esence (A8) (LRR U)            |              | Depleted Da          | rk Surfa                    | ce (F7)           |                  |                       |              |               | in Soils (F20)            |
| 1 cm Mu               | ck (A9) (LRR P, T)             |              | Redox Depre          | essions                     | (F8)              |                  | (N                    | ILRA 153E    | 3)            |                           |
| Depleted              | l Below Dark Surface           | (A11)        | Marl (F10) <b>(L</b> | .RR U)                      |                   |                  | Red                   | Parent Ma    | aterial (F21) |                           |
| Thick Da              | rk Surface (A12)               |              | Depleted Oc          | hric (F1                    | 1) <b>(MLR</b> /  | A 151)           | Ver                   | / Shallow D  | Dark Surface  | (F22)                     |
| Coast Pr              | airie Redox (A16) ( <b>M</b>   | LRA 150A)    | Iron-Mangan          | ese Ma                      | sses (F1          | 2) <b>(LRR C</b> | ), P, T) (o           | utside ML    | RA 138, 152   | 2A in FL, 154)            |
| Sandy M               | ucky Mineral (S1) <b>(LI</b>   | RR O, S)     | Umbric Surfa         | ace (F13                    | 3) (LRR F         | P, T, U)         | Barı                  | ier Islands  | Low Chrom     | a Matrix (TS7)            |
| Sandy G               | leyed Matrix (S4)              |              | Delta Ochric         | (F17) <b>(N</b>             | MLRA 15           | 51)              | (N                    | ILRA 153E    | 3, 153D)      |                           |
|                       | edox (S5)                      |              | Reduced Ve           | ,                           |                   |                  |                       | er (Explain  | in Remarks    | )                         |
|                       | Matrix (S6)                    |              | Piedmont Flo         | •                           | `                 | , ,              | •                     |              |               |                           |
|                       | face (S7) <b>(LRR P, S,</b>    |              | Anomalous E          | -                           |                   |                  |                       |              |               |                           |
|                       | e Below Surface (S8)           |              | (MLRA 14             |                             |                   |                  |                       |              |               | egetation and             |
| (LRR :                | S, T, U)                       |              | Very Shallow         |                             | ,                 | ,                |                       | •            | rology must   | •                         |
|                       |                                |              | (MLRA 13             | 8, 152A                     | in FL, 1          | 54)              | u                     | niess distui | rbed or prob  | iematic.                  |
|                       | _ayer (if observed):           |              |                      |                             |                   |                  |                       |              |               |                           |
| Type:                 | None                           | e            |                      |                             |                   |                  |                       |              |               |                           |
| Depth (in             | nches):                        | 0            |                      |                             |                   |                  | Hydric Soil Pr        | esent?       | Yes           | No <u>X</u>               |
| Remarks:              |                                |              |                      |                             |                   |                  |                       |              |               |                           |
| Dual matrix:          | 1-YR 6/6 10%                   |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |
|                       |                                |              |                      |                             |                   |                  |                       |              |               |                           |

### U.S. Army Corps of Engineers

### WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)

| Project/Site: SR Ripley II                                  |                                    | City/County: Ripley/Lau    | uderdale                                      | Sampling Date: 9/22/22                |
|---|------------------------------------|----------------------------|---|---------------------------------------|
| Applicant/Owner: Silicon Ranch Corpora                      | ation                              |                            | State: TN                                     | Sampling Point: W012-W                |
| Investigator(s): Benjamin Burdette and Jake                 |                                    | tion, Township, Range:     |   |                                       |
| Landform (hillside, terrace, etc.): terrace                 |                                    | relief (concave, convex, r | none): concave                                | Slope (%): 0-2                        |
| Subregion (LRR or MLRA): LRR P, MLRA 1                      |                                    | •                          | 39.521802                                     | Datum: NAD83                          |
| Soil Map Unit Name: Adler silt loam, 0 to 2 p               | <del></del>                        |                            | NWI classificat                               |                                       |
| Are climatic / hydrologic conditions on the site            | e typical for this time of year?   | Yes X                      | No (If no, e                                  | explain in Remarks.)                  |
| Are Vegetation, Soil, or Hydro                              |                                    |                            | ircumstances" present?                        |                                       |
|   | · <u></u>                          |                            |   |                                       |
| Are Vegetation, Soil, or Hydro SUMMARY OF FINDINGS – Attach |                                    |                            | olain any answers in Re<br>Ons, transects, im | •                                     |
|   | 1                                  |                            |   |                                       |
| Hydrophytic Vegetation Present?                             |                                    | Is the Sampled Area        | V V   |                                       |
| Hydric Soil Present?  |                                    | within a Wetland?          | Yes X   | No                                    |
| Wetland Hydrology Present?                                  | Yes X No                           |                            |   |                                       |
| Remarks:  |                                    |                            |   |                                       |
| PEM wetland<br>DP23-W12                                     |                                    |                            |   |                                       |
| DF23-VV12   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
| HYDROLOGY   |                                    |                            |   |                                       |
| Wetland Hydrology Indicators:                               |                                    |                            | Secondary Indicators (                        | (minimum of two required)             |
| Primary Indicators (minimum of one is required)             | red; check all that apply)         |                            | X Surface Soil Crack                          | · · · · · · · · · · · · · · · · · · · |
| Surface Water (A1)  | Aquatic Fauna (B13)                |                            |   | ed Concave Surface (B8)               |
| High Water Table (A2)                                       | Marl Deposits (B15) (LRF           | R U)                       | X Drainage Patterns                           |                                       |
| Saturation (A3)   | Hydrogen Sulfide Odor (0           | -                          | Moss Trim Lines (                             |                                       |
| Water Marks (B1)  | Oxidized Rhizospheres o            |                            | Dry-Season Water                              | •                                     |
| Sediment Deposits (B2)                                      | Presence of Reduced Iro            |                            | Crayfish Burrows                              |                                       |
| Drift Deposits (B3)   | Recent Iron Reduction in           |                            |   | on Aerial Imagery (C9)                |
| X Algal Mat or Crust (B4)                                   | Thin Muck Surface (C7)             | ,                          | Geomorphic Positi                             | • • • •                               |
| Iron Deposits (B5)  | Other (Explain in Remark           | ks)                        | Shallow Aquitard (                            | , ,                                   |
| Inundation Visible on Aerial Imagery (B7                    |                                    | ,                          | X FAC-Neutral Test                            |                                       |
| Water-Stained Leaves (B9)                                   | ,                                  |                            | Sphagnum Moss (                               |                                       |
| Field Observations:   |                                    |                            |   |                                       |
| Surface Water Present? Yes                                  | No X Depth (inches):               | 0                          |   |                                       |
| Water Table Present? Yes                                    | No X Depth (inches):               | 0                          |   |                                       |
| Saturation Present? Yes                                     | No X Depth (inches):               |                            | Hydrology Present?                            | Yes X No                              |
| (includes capillary fringe)                                 |                                    |                            |   |                                       |
| Describe Recorded Data (stream gauge, mo                    | onitoring well, aerial photos, pre | evious inspections), if a  | /ailable:                                     |                                       |
|   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
| Remarks:  |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |
|   |                                    |                            |   |                                       |

| Tree Offictions (Distriction 00        | Absolute | Dominant        | Indicator | Damin and Task was dark ask  |
|--|----------|-----------------|-----------|--|
| Tree Stratum (Plot size: 30 )          | % Cover  | Species?        | Status    | Dominance Test worksheet:  |
| 1.                                     |          |                 |           | Number of Dominant Species   |
| 2.                                     |          |                 |           | That Are OBL, FACW, or FAC: 2 (A)  |
| 3.                                     |          |                 |           | Total Number of Dominant   |
| 4.                                     |          |                 |           | Species Across All Strata: 2 (B)   |
| 5.                                     |          |                 |           | Percent of Dominant Species  |
| 6.                                     |          |                 |           | That Are OBL, FACW, or FAC: 100.0% (A/B)   |
| 7.                                     |          |                 |           | Prevalence Index worksheet:  |
| 8                                      |          | T-1-1 Cover     |           | Total % Cover of: Multiply by:   |
| EOO/ of total covers                   |          | =Total Cover    |           | OBL species 0 x1 = 0   |
| 50% of total cover:                    | 2070     | of total cover: |           | FACW species 5 x 2 = 10  |
| Sapling/Shrub Stratum (Plot size: 30 ) |          |                 |           | FAC species 7 x 3 = 21   |
| 1                                      |          |                 |           | FACU species 2 x 4 = 8   |
| 2.                                     |          |                 |           | UPL species 0 x 5 = 0  |
| 3.                                     |          |                 |           | Column Totals: 14 (A) 39 (B)   |
| 4                                      |          |                 |           | Prevalence Index = B/A = 2.79  |
| 5                                      |          |                 |           | Hydrophytic Vegetation Indicators:   |
| 6                                      |          |                 |           | 1 - Rapid Test for Hydrophytic Vegetation  |
| 7                                      |          |                 |           | X 2 - Dominance Test is >50%   |
| 8                                      |          |                 |           | $\frac{X}{X}$ 3 - Prevalence Index is $\leq 3.0^{1}$                                 |
|  |          | =Total Cover    |           | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                            |
| 50% of total cover:                    | 20%      | of total cover: |           |  |
| Herb Stratum (Plot size: 30 )          |          |                 |           |  |
| 1. Cyperus rotundus                    | 5        | Yes             | FAC       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be                 |
| 2. Coleataenia rigidula                | 5        | Yes             | FACW      | present, unless disturbed or problematic.  |
| 3. Mollugo verticillata                | 2        | No              | FAC       | Definitions of Four Vegetation Strata:   |
| 4. Sida spinosa                        | 2        | No              | FACU      | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or                              |
| 5                                      |          |                 |           | more in diameter at breast height (DBH), regardless of height.                       |
| 6                                      |          |                 |           | Height.  |
| 7                                      |          |                 |           | Sapling/Shrub – Woody plants, excluding vines, less                                  |
| 8                                      |          |                 |           | than 3 in. DBH and greater than 3.28 ft (1 m) tall.                                  |
| 9.                                     |          |                 |           |  |
| 10                                     |          |                 |           | <b>Herb</b> – All herbaceous (non-woody) plants, regardless                          |
| 1 11                                   |          |                 |           |  |
| 11.                                    |          |                 |           | of size, and woody plants less than 3.28 ft tall.                                    |
| 12.                                    |          |                 |           |  |
| 12.                                    |          | =Total Cover    |           | Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 12                                     |          | =Total Cover    | 3         |  |
| 12                                     |          |                 | 3         | Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 12                                     |          |                 | 3         | Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 12                                     |          |                 | 3         | Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 12                                     |          |                 | 3         | Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 12                                     |          |                 | 3         | Woody Vine – All woody vines greater than 3.28 ft in                                 |
| 12                                     | 20%      | of total cover: | 3         | Woody Vine – All woody vines greater than 3.28 ft in height.                         |
| 12                                     | 20%      | of total cover: | 3         | Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |
| 12                                     | 20%      | of total cover: | 3         | Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic            |
| 12                                     | 20%      | of total cover: | 3         | Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |
| 12                                     | 20%      | of total cover: | 3         | Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |
| 12                                     | 20%      | of total cover: | 3         | Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |
| 12                                     | 20%      | of total cover: | 3         | Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |
| 12                                     | 20%      | of total cover: | 3         | Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation |

SOIL Sampling Point: W012-W

|                        | cription: (Describe              | to the depth |                         |           |                   | ator or co       | onfirm the absence     | of indicators.)                              |
|------------------------|----------------------------------|--------------|-------------------------|-----------|-------------------|------------------|------------------------|--|
| Depth                  | Matrix                           |              |                         | x Featur  |                   | . 2              | <b>-</b> .             | <b>D</b>                                     |
| (inches)               | Color (moist)                    | <u>%</u>     | Color (moist)           | <u>%</u>  | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                | Remarks                                      |
| 0-20                   | 10YR 5/2                         | 90           | 10YR 4/4                | 10        | С                 | M                | Loamy/Clayey           | silt loam                                    |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              | _                       |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
| <sup>1</sup> Type: C=C | oncentration, D=Depl             | etion. RM=F  | Reduced Matrix. N       | MS=Mas    | ked San           | d Grains.        | <sup>2</sup> Location: | PL=Pore Lining, M=Matrix.                    |
|                        | Indicators: (Applica             |              |                         |           |                   |                  |                        | for Problematic Hydric Soils <sup>3</sup> :  |
| Histosol               |                                  |              | Thin Dark Su            |           |                   | S, T, U)         |                        | Muck (A9) (LRR O)                            |
|                        | oipedon (A2)                     | •            | Barrier Island          |           |                   |                  |                        | Muck (A10) (LRR S)                           |
| Black Hi               | stic (A3)                        | •            | (MLRA 15                |           | •                 | ,                |                        | Prairie Redox (A16)                          |
| Hydroge                | en Sulfide (A4)                  |              | Loamy Muck              | y Minera  | al (F1) <b>(L</b> | RR O)            | (out                   | side MLRA 150A)                              |
| Stratified             | d Layers (A5)                    |              | Loamy Gleye             | ed Matrix | x (F2)            |                  | Reduc                  | ed Vertic (F18)                              |
| Organic                | Bodies (A6) (LRR P,              | T, U)        | X Depleted Ma           | trix (F3) |                   |                  | (out                   | side MLRA 150A, 150B)                        |
| 5 cm Mu                | ıcky Mineral (A7) <b>(LR</b>     | R P, T, U)   | Redox Dark              | Surface   | (F6)              |                  | Piedm                  | ont Floodplain Soils (F19) <b>(LRR P, T)</b> |
| Muck Pr                | esence (A8) (LRR U)              | )            | Depleted Da             | rk Surfa  | ce (F7)           |                  | Anoma                  | alous Bright Floodplain Soils (F20)          |
|                        | ıck (A9) <b>(LRR P, T)</b>       |              | Redox Depre             |           | (F8)              |                  | •                      | RA 153B)                                     |
|                        | d Below Dark Surface             | e (A11)      | Marl (F10) <b>(L</b>    |           |                   |                  |                        | arent Material (F21)                         |
|                        | ark Surface (A12)                |              | Depleted Oc             |           |                   |                  |                        | Shallow Dark Surface (F22)                   |
|                        | rairie Redox (A16) (M            |              |                         |           |                   |                  |                        | side MLRA 138, 152A in FL, 154)              |
|                        | Mucky Mineral (S1) (L            | RR 0, 5)     | Umbric Surfa            |           |                   |                  |                        | Islands Low Chroma Matrix (TS7)              |
|                        | Gleyed Matrix (S4)<br>Redox (S5) |              | Delta Ochric Reduced Ve |           |                   |                  | •                      | RA 153B, 153D)                               |
|                        | Matrix (S6)                      | •            | Piedmont Flo            |           |                   |                  |                        | (Explain in Remarks)                         |
|                        | rface (S7) <b>(LRR P, S</b>      | T II)        | Anomalous E             | •         | ,                 | , ,              | •                      |  |
|                        | ie Below Surface (S8             |              | (MLRA 14                | -         |                   |                  |                        | itors of hydrophytic vegetation and          |
|                        | S, T, U)                         | ,            | Very Shallow            |           |                   |                  |                        | and hydrology must be present,               |
| `                      | -, , -,                          | i            | (MLRA 13                |           |                   |                  |                        | ess disturbed or problematic.                |
| Restrictive            | Layer (if observed):             |              | <del>-</del>            |           |                   |                  |                        | ·  |
| Type:                  | Non                              | ie           |                         |           |                   |                  |                        |  |
| Depth (i               | nches):                          | 0            |                         |           |                   |                  | Hydric Soil Pres       | ent? Yes X No                                |
| Remarks:               |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |
|                        |                                  |              |                         |           |                   |                  |                        |  |

### U.S. Army Corps of Engineers

### WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region

See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)

| Project/Site: SR Ripley II                                   | City/County: Riple                                | ey/Lauderdale Sampling Date: 9/22/2022         |
|--|---|--|
| Applicant/Owner: Silicon Ranch Corporati                     | on  | State: TN Sampling Point: W012-UPL             |
| Investigator(s): Benjamin Burdette and Jake II               | rvin Section, Township, Ra                        | ange:  |
| Landform (hillside, terrace, etc.): terrace                  | Local relief (concave, con                        |  |
| Subregion (LRR or MLRA): LRR P, MLRA 13                      | <u> </u>  | ong: -89.521721 Datum: NAD83                   |
| Soil Map Unit Name: Adler silt loam, 0 to 2 pe               |   | NWI classification: N/A                        |
| Are climatic / hydrologic conditions on the site             | typical for this time of year? Yes                | X No (If no, explain in Remarks.)              |
| Are Vegetation, Soil, or Hydrold                             |   | mal Circumstances" present? Yes X No           |
| Are Vegetation, Soil, or Hydrold                             |   | ed, explain any answers in Remarks.)           |
| <del></del>  |   | ocations, transects, important features, etc.  |
| Hydrophytic Vegetation Present?                              | Yes No _X Is the Sampled A                        | Area   |
| Hydric Soil Present?   | Yes No X within a Wetland                         | ? Yes No X                                     |
| Wetland Hydrology Present?                                   | Yes No X  |  |
| Upland point corresponding to W12<br>DP24-UP                 |   |  |
| HYDROLOGY  |   |  |
| Wetland Hydrology Indicators:                                |   | Secondary Indicators (minimum of two required) |
| Primary Indicators (minimum of one is require                |   | Surface Soil Cracks (B6)                       |
| Surface Water (A1)   | Aquatic Fauna (B13)                               | Sparsely Vegetated Concave Surface (B8)        |
| High Water Table (A2)  | Marl Deposits (B15) (LRR U)                       | Drainage Patterns (B10)                        |
| Saturation (A3)  | Hydrogen Sulfide Odor (C1)                        | Moss Trim Lines (B16)                          |
| Water Marks (B1)   | Oxidized Rhizospheres on Living Roots (C3         |  |
| Sediment Deposits (B2)                                       | Presence of Reduced Iron (C4)                     | Crayfish Burrows (C8)                          |
| Drift Deposits (B3)  | Recent Iron Reduction in Tilled Soils (C6)        | Saturation Visible on Aerial Imagery (C9)      |
| Algal Mat or Crust (B4)                                      | Thin Muck Surface (C7)                            | Geomorphic Position (D2)                       |
| Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) | Other (Explain in Remarks)                        | Shallow Aquitard (D3) FAC-Neutral Test (D5)    |
| Water-Stained Leaves (B9)                                    |   | Sphagnum Moss (D8) (LRR T, U)                  |
| Field Observations:  |   | Opilagilalii Moso (20) (21317.1, 0)            |
|  | No X Depth (inches): 0                            |  |
|  | No X Depth (inches): 0                            |  |
|  |   | land Hydrology Present? Yes No X               |
| (includes capillary fringe)                                  | NO X Depart (money).                              | 100 10 10 10 10 10 10 10 10 10                 |
|  | itoring well, aerial photos, previous inspections | -<br>s), if available:                         |
| 5 5 .  | ,           | y, ii 4142                                     |
| Remarks:   |   |  |
| Tromano.   |   |  |
|  |   |  |
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|  |   |  |
|  |   |  |
|  |   |  |
|  |   |  |
|  |   |  |

| - O  | Absolute     | Dominant        | Indicator |  |
|--|--------------|-----------------|-----------|--|
| Tree Stratum (Plot size: 30 )                        | % Cover      | Species?        | Status    | Dominance Test worksheet:  |
| 1<br>2.  |              |                 | -         | Number of Dominant Species   |
| 3.   |              |                 |           | That Are OBL, FACW, or FAC: 0 (A)                                    |
| 4.   |              |                 |           | Total Number of Dominant Species Across All Strata: 1 (B)            |
| 5.   |              |                 |           | `,   |
| 6.   |              |                 |           | Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)   |
| 7.   |              |                 |           | Prevalence Index worksheet:  |
| 8.   |              |                 |           | Total % Cover of: Multiply by:                                       |
|  |              | =Total Cover    |           | OBL species 0 x 1 = 0  |
| 50% of total cover:                                  |              | of total cover: |           | FACW species 0 x 2 = 0   |
| Sapling/Shrub Stratum (Plot size: 30 )               |              |                 |           | FAC species 0 x 3 = 0  |
| 1.   |              |                 |           | FACU species 0 x 4 = 0   |
| 2.   |              |                 |           | UPL species 100 x 5 = 500  |
| 3.   |              |                 |           | Column Totals: 100 (A) 500 (B)                                       |
| 4.   |              |                 |           | Prevalence Index = B/A = 5.00  |
| 5.   |              |                 |           | Hydrophytic Vegetation Indicators:                                   |
| 6.   |              |                 |           | 1 - Rapid Test for Hydrophytic Vegetation                            |
| 7.   |              |                 |           | 2 - Dominance Test is >50%   |
| 8.   |              |                 |           | 3 - Prevalence Index is ≤3.0 <sup>1</sup>                            |
|  | :            | =Total Cover    |           | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)            |
| 50% of total cover:                                  | 20%          | of total cover: |           |  |
| Herb Stratum (Plot size: 30 )                        |              |                 |           |  |
| 1. Glycine max                                       | 100          | Yes             | UPL       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be |
| 2  |              |                 |           | present, unless disturbed or problematic.                            |
| 3  |              |                 |           | Definitions of Four Vegetation Strata:                               |
| 4  |              |                 |           | Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or              |
| 5  |              |                 |           | more in diameter at breast height (DBH), regardless of               |
| 6.   |              |                 |           | height.  |
| 7  |              |                 |           | Sapling/Shrub – Woody plants, excluding vines, less                  |
| 8.   |              |                 |           | than 3 in. DBH and greater than 3.28 ft (1 m) tall.                  |
| 9.   |              |                 |           |  |
| 10.  |              |                 |           | <b>Herb</b> – All herbaceous (non-woody) plants, regardless          |
| 11.  |              |                 |           | of size, and woody plants less than 3.28 ft tall.                    |
| 12   |              |                 |           |  |
|  |              | =Total Cover    |           | <b>Woody Vine</b> – All woody vines greater than 3.28 ft in height.  |
| 50% of total cover: 5                                | <u>)</u> 20% | of total cover: | 20        | Height.  |
| Woody Vine Stratum (Plot size: 30 )                  |              |                 |           |  |
| 1.   |              |                 |           |  |
| 2.   |              |                 |           |  |
| 3.   |              |                 |           |  |
| 4.   |              |                 |           |  |
| 5  |              | T-+-1 O         |           | Hydrophytic  |
| FOO/ of total covery                                 |              | =Total Cover    |           | Vegetation No. V   |
| 50% of total cover:                                  | 20%          | of total cover: |           | Present?         Yes         No         X                            |
| Remarks: (If observed, list morphological adaptation | ns below.)   |                 |           |  |
|  |              |                 |           |  |
|  |              |                 |           |  |
|  |              |                 |           |  |
|  |              |                 |           |  |

SOIL Sampling Point: W012-UPL

| Depth (inches) | Matrix  |            | Redox                         | x Featur | es                |                  |                |              |                    |                                      |
|----------------|---|------------|-------------------------------|----------|-------------------|------------------|----------------|--------------|--------------------|--------------------------------------|
|                | Color (moist)                                   | %          | Color (moist)                 | %        | Type <sup>1</sup> | Loc <sup>2</sup> | Texture        |              | Ren                | narks                                |
| 0-20           | 10YR 5/3  | 95         | 10YR 5/4                      | 5        | С                 | M                | Loamy/Clayey   |              | eilt               | loam                                 |
| 0-20           | 10111 3/3                                       |            | 10111 0/4                     |          |                   |                  | Loamyrolaycy   | _            | Siit               | loam                                 |
|                |   |            |                               |          |                   |                  |                |              |                    |                                      |
|                |   |            |                               |          |                   |                  |                |              |                    |                                      |
|                |   |            |                               |          |                   |                  |                |              |                    |                                      |
|                |   |            |                               |          |                   |                  |                |              |                    |                                      |
|                |   |            |                               |          |                   |                  |                |              |                    |                                      |
|                |   |            |                               |          |                   |                  |                |              |                    |                                      |
| _              |   |            |                               |          |                   |                  |                |              |                    |                                      |
|                |   |            |                               |          |                   |                  |                |              |                    |                                      |
|                | ncentration, D=Depl                             |            |                               |          |                   | d Grains.        |                |              | e Lining, M=       |                                      |
| =              | ndicators: (Applica                             | ble to all |                               |          |                   |                  |                |              | -                  | /dric Soils³:                        |
| Histosol (/    | •   |            | Thin Dark Su                  |          |                   |                  |                |              | 9) <b>(LRR O)</b>  |                                      |
|                | pedon (A2)                                      |            | Barrier Island                |          |                   | 12)              |                |              | 10) <b>(LRR S)</b> |                                      |
| Black Hist     | ` '   |            | (MLRA 15                      |          | •                 |                  |                |              | Redox (A16)        |                                      |
|                | Sulfide (A4)                                    |            | Loamy Muck                    | •        | . , .             | RR O)            | •              |              | RA 150A)           |                                      |
|                | Layers (A5)                                     |            | Loamy Gleye                   |          |                   |                  |                | luced Verti  | ` '                |                                      |
|                | Bodies (A6) (LRR P,                             |            | Depleted Ma                   | ` '      |                   |                  | •              |              | RA 150A, 1         | •                                    |
|                | ky Mineral (A7) (LR                             |            |                               |          | ` '               |                  |                |              |                    | (F19) <b>(LRR P,</b>                 |
|                | sence (A8) (LRR U)                              |            | Depleted Da                   |          |                   |                  |                |              | -                  | ain Soils (F20)                      |
|                | k (A9) (LRR P, T)                               | (011)      | Redox Depre                   |          | (F8)              |                  | •              | ILRA 153E    | •                  |                                      |
|                | Below Dark Surface                              | (A11)      | Marl (F10) (L                 |          | 1) /MI D          | A 454)           |                |              | aterial (F21)      | · (E22)                              |
|                | k Surface (A12)<br>airie Redox (A16) ( <b>M</b> | II DA 1507 | Depleted Oc                   | -        |                   |                  |                |              | Dark Surface       | ` '                                  |
|                | ucky Mineral (S1) <b>(L</b>                     |            | A)Iron-Mangan<br>Umbric Surfa |          |                   |                  |                |              |                    | <b>2A in FL, 154)</b> a Matrix (TS7) |
|                | eyed Matrix (S4)                                | KK 0, 3)   | Delta Ochric                  |          |                   |                  |                | ILRA 153E    |                    | a Matrix (137)                       |
| Sandy Gle      |   |            | Reduced Ve                    |          |                   |                  |                |              | in Remarks         | ١                                    |
|                | Matrix (S6)                                     |            | Piedmont Flo                  | •        | , ,               |                  | · —            | ei (Expiaiii | III I CIII ai KS   | )                                    |
|                | ace (S7) <b>(LRR P, S</b>                       | T 11\      | Anomalous E                   | •        | `                 | , ,              | •              |              |                    |                                      |
|                | Below Surface (S8                               |            | (MLRA 14                      | _        |                   |                  |                | icators of h | ydrophytic y       | egetation and                        |
| (LRR S         | •   | ,          | Very Shallow                  |          |                   |                  |                |              | rology must        | •                                    |
| (20            | , ., .,   |            | (MLRA 13                      |          |                   |                  |                | •            | rbed or prob       | •                                    |
| Restrictive La | ayer (if observed):                             |            | `                             |          |                   |                  |                |              | · ·                |                                      |
| Type:          | Non   | е          |                               |          |                   |                  |                |              |                    |                                      |
| Depth (inc     | ches):  | 0          |                               |          |                   |                  | Hydric Soil Pr | esent?       | Yes                | NoX                                  |
|                |   |            |                               |          |                   |                  |                |              |                    |                                      |

#### W001 09/19/2022

## Quantitative Rating Tennessee Rapid Assessment Method

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN)       | >25 acres (middle TN)     | >10 acres (east TN *)  |   |
|------|---------------------------|---------------------------|------------------------|---|
| 5pts | 25 - <50 acres (west TN)  | 10- 25 acres (middle TN)  | 7-<10 acres (east TN*) |   |
| 4pts | 10 - <25 acres (west TN)  | 7-< 25acres (middle TN)   | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)    | 3< 7 acres (middle TN)    | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)  | 0.5- <3 acres (middle TN) | 0.5-<1 acres (east TN) |   |
| 1pt  | 0.1 - <0.3 acres(west TN) | <0.5 acres (middle TN)    | <0.5 acres (east TN)   | 1 |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2 | Table 2. Metric to English conversion table with visual estimation sizes. |                 |               |               |      |         |           |  |  |  |
|---------|---|-----------------|---------------|---------------|------|---------|-----------|--|--|--|
| acres   | ft²   | yd <sup>2</sup> | ft on<br>side | yd on<br>side | ha   | m²      | m on side |  |  |  |
| 50      | 2,177,983   | 241,998         | 1476          | 492           | 20.2 | 202,000 | 449       |  |  |  |
| 25      | 1,088,992   | 120,999         | 1044          | 348           | 10.1 | 101,000 | 318       |  |  |  |
| 10      | 435,596   | 48,340          | 660           | 220           | 4.1  | 41,000  | 203       |  |  |  |
| 3       | 130,679   | 14,520          | 362           | 121           | 1.2  | 12,000  | 110       |  |  |  |
| 0.3     | 13,067  | 1,452           | 114           | 38            | 0.12 | 1,200   | 35        |  |  |  |
| 0.1     | 4,356   | 484             | 66            | 22            | 0.04 | 400     | 20        |  |  |  |

|                | _ |
|----------------|---|
|                | 1 |
|                |   |
| Metric 1 Total | - |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| buffer v<br>25m, 1 | erage Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW width on each side (max of 50m) and divide by the number of sides, Example: ABW of a wetland with buffers on 20m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land use e.g. active row cropping, paved areas, housing developments, etc. | f 100m,      |          |
|--------------------|--|--------------|----------|
| 7pts               | WIDE. >50m (164ft) or more around perimeter.   |              |          |
| 4pts               | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.   |              |          |
| 1pt                | NARROW. 10m to <25m (32 to <82ft) around the perimeter.  |              |          |
| 0pts               | VERY NARROW. <10m (<32ft) around perimeter.  | 0            | 2a Avg.= |
|                    | ensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the dominant land use(s) outside the wetland's buffer zone.   | intensity of | 0.00     |
| 7pts               | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.   |              |          |
| 5pts               | LOW. Old fallow field, shrub land, early successional young forest, etc.   |              |          |
| 3pts               | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.  |              |          |
| 1pt                | HIGH. urban, industrial, row cropping, mining, construction, etc.  | 1            | 2b Avg.= |

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Metric 2 Total 1.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| wetlands | <b>3a. Sources of Water.</b> Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values.  |   |  |  |
|----------|---|---|--|--|
| 5pts     | High pH groundwater (7.5-9.0)   |   |  |  |
| 3pts     | Other groundwater   |   |  |  |
| 1pts     | Precipitation   | 1 |  |  |
| 3pts     | Seasonal surface water  |   |  |  |
| 5pts     | Perennial surface water (lake or stream)  |   |  |  |
| 3b. Con  | nectivity. Select all that apply and sum score  |   |  |  |
| 1pt      | <b>100 year floodplain.</b> "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.  | 1 |  |  |
| 1pt      | Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. |   |  |  |
| 1pt      | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.  |   |  |  |
| 1pt      | Part of riparian corridor.  |   |  |  |
| depth is | <b>3c. Maximum water depth.</b> Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland when its water depth is greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 Manual will be useful in answering this question.  |   |  |  |
| 3 pts    | >0.7m (27.6in)  |   |  |  |
| 2pts     | 0.4 to 0.7m (15.7 to 27.6in)  |   |  |  |
| 1pt      | <0.4m (<15.7in)   | 1 |  |  |
|          | <b>3d. Duration of inundation/saturation.</b> Select one or double check and average the scores if duration is uncertain. The use of ACOE 1987 Manual secondary indicators is necessary and expected in order to properly answer this question.   |   |  |  |
| 4pts     | Semi-permanently to permanently inundated or saturated  |   |  |  |
| 3pts     | Regularly inundated or saturated  |   |  |  |
| 2pts     | Seasonally inundated  |   |  |  |
| 1pt      | Seasonally saturated in the upper 30cm (12in) of soil   | 1 |  |  |

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**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

| Check all that a | e observed | present in a | or near the w | etland |
|------------------|------------|--------------|---------------|--------|
|                  |            |              |               |        |

| X | ditch(es), in or near the wetland     |   | point source discharges to the (non-stormwater)   |
|---|---------------------------------------|---|---|
|   | tile(s), in or near the wetland       |   | filling/grading activities in or near the wetland |
|   | dike(s), in or near the wetland       |   | road beds/RR beds in or near the wetland          |
|   | weir(s), in or near the wetland       |   | dredging activities in or near the wetland        |
|   | stormwater inputs (addition of water) | Х | other (specify) agricultural fields               |

| Have any of the disturbances identified above caused or appear to have caused more than trivial alterations to the wetland's natural hydrologic regime. | YES  Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance. | NO Assign a score of 12 since there are no or no apparent modifications. | NOT SUF<br>Choose "recove<br>assign a score | red" and |
|---|--|--|---|----------|
| Select one or double check adjoining  | ng numbers and average the s   | score.   |   | score    |

| Select one or double check adjoining numbers and average the score. |   |   |
|---|---|---|
| 12pts   | NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator.   |   |
| 7pts  | RECOVERED. The wetland appears to have recovered from past modifications.   |   |
| 3pts  | RECOVERING. The wetland appears to be in the process of recovering from past modifications.   |   |
| 1pt   | RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the wetland has not recovered from past modifications, and/or the modifications are ongoing. | 1 |

3e Avg= **1.00** 

SR Ripley II

Metric 3 Total 5.00

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

|  | ,   |   |             |  |  |      |               |
|--|---|---|-------------|--|--|------|---------------|
| di<br>w<br>ca<br>to<br>di  | a. Substrate/Soil Disturbance. neck and average. This question sturbances to the soil and surface etland. Note also that the labels of ategories are intended to be desc pontrolling. In some instances, it may consider the scoring categories sturbance continuum, from very l sturbance. | evaluates physical e substrates of the on the scoring criptive but not nay be more appropriate as fixed locations on a  | apr         | amples of substrate/soil disturba<br>ply):<br>filling and grading<br>plowing<br>grazing (hooves)<br>vehicle use (off-road vehicles,<br>sedimentation<br>dredging, and other mechanic | construction vehicles)                           |      |               |
|  | Have any of soil or substrate<br>disturbances caused or<br>appear to have caused more<br>than trivial alterations to the<br>wetland's natural soils   | YES  Assign a score 1, 2 or 3 an intermediate score depending on degree recovery from the disturbance.  | €,          | NO Assign a score of 4 since there are no or no apparent modifications.  | NOT SURE  Choose "recovered" assign a score of 3 |      |               |
| s  | elect one or double check adjo  | ining numbers and aver  | age         | the score.   |  |      |               |
| 4  | ots NONE OR NONE APPA evaluator.  | RENT. There are no distu  | ırban       | nces or no disturbances apparent   | to the   |      |               |
| 3  | ots RECOVERED. The wetl   | and appears to have reco  | vere        | d from past disturbances.  |  |      |               |
|  |   | tland appears to be in the  | proc        | cess of recovering from past distu   | ırbances.  |      |               |
| 1pt RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has 4a. |   |   |             | 4a Avg   |  |      |               |
| ra<br>T  | b. Habitat development. Select<br>ting of how well-developed the w<br>his question presumes knowledg<br>ference standard examples. If ur  | etland is in comparison to<br>e of the types of wetlands  | othe<br>and | er ecologically and/or hydrogeom<br>the range in quality typical of the  | orphically similar wetla                         | nds. |               |
| 7  | ots EXCELLENT. Wetland  | appears to represent the t  | best o      | of its type or class.  |  |      |               |
| 6  |   | VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.                    |             |  |  |      |               |
| 5  | s GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  |   |             |  |  |      |               |
| 4  | 4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  |   |             |  |  |      |               |
| 3  |   | FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good. |             |  |  |      |               |
| 2  | ots POOR TO FAIR. Wetla   | nd appears to be a poor to  | o fair      | example of its type or class.  |  |      |               |
| 1  | ot POOR. Wetland appear disturbances, successio   |   | ole of      | its type or class because of pas   | t or present                                     | 1    | 4b Avg.       |
| _  |   |   |             |  |  | -    | <b>-</b> 1.00 |

SR Ripley II W001

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

Check all that are observed present in or near the wetland

Mowing Herbaceous layer/aquatic bed removal

Grazing (cattle, horses, etc.) Sedimentation

Clearcutting Dredging

Selective cutting X Row-crop or orchard farming

Woody debris removal Nutrient enrichment, e.g. nuisance algae

Other (specify):

Other (specify):

**NOT SURE** Have any of the disturbances YES <u>NO</u> identified above caused or Choose "recovered" and appeared to cause more than Assign a score 1, 3 or 6, Assign a score of 9 since trivial alterations to the or an intermediate there are no or no assign a score of 6. wetland's natural habitat. score, depending on apparent modifications. degree of recovery from the disturbance.

Toxic pollutants

Shrub/sapling removal

| Select | Select one score or double check adjoining numbers and average the score.  |   |
|--------|--|---|
| 9pts   | NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.  |   |
| 6pts   | RECOVERED. The wetland appears to have recovered from past alterations.  |   |
| 3pts   | RECOVERING. The wetland appears to be in the process of recovering from past alterations.  |   |
| 1pt    | RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. | 1 |

4c Avg. = **1.00** 

Metric 4 Total

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| 5pts - >10m sq sphagnum or other moss or other vernal pools   | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat  |
|---|---|
| Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |
| 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   | 10 pts - Supports species Deemed in Need of Management by TWRA or TN Special Concern by TDEC  |

Metric 5 Total O

|  | 1     |
|--|-------|
| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  |       |
| <b>6a. Wetland Vegetation Communities</b> Check each community present <u>both vertically and horizontally</u> within the wetland with an area of at least 0.1 hectares or 1000m <sup>2</sup> (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.   | Score |
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            |       |
| 2)Emergent Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.   | 3     |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     |       |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". |       |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   |       |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   |       |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |
|----------------|---|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |  |  |  |
|---|--|--|--|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |  |  |  |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |  |  |  |
| 3 | High 4 ha (9.88 acres) or more               |  |  |  |

| <b>6b.</b> Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |   |  |  |
|--|---|--|--|
| 5pts   | HIGH Wetland has a high degree of interspersion                       |  |  |
| 4pts   | MODERATELY HIGH Wetland has a moderately high degree of interspersion |  |  |
| 3pts   | MODERATE Wetland has a moderate degree of interspersion               |  |  |
| 2pts   | MODERATELY LOW Wetland has a moderately low degree of interspersion   |  |  |
| 1pt  | LOW Wetland has a low degree of interspersion.                        |  |  |
| 0pt  | NONE Wetland has no plan view interspersion                           |  |  |

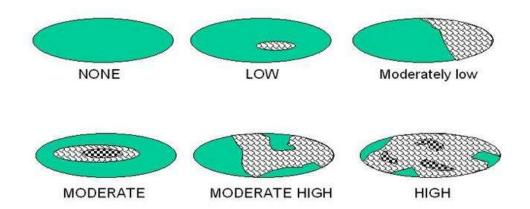


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

| <b>6c. Coverage of Invasive Plant Species.</b> Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score. |   |   |  |
|---|---|---|--|
| -5pts   | Extensive >75% areal cover of invasive species  |   |  |
| -3pts   | Moderate 25-75% areal cover of invasive species   |   |  |
| -1pts   | Sparse 5-25% areal cover of invasive species  |   |  |
| 0pt   | Nearly absent. <5% areal cover of invasive species  |   |  |
| 1pt   | Absent  | 1 |  |
|   | <b>6d. Microtopography</b> . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopographic habitat features often present in wetlands. |   |  |
| Vegetat   | Vegetated hummocks and tussocks   |   |  |
| Coarse woody debris >15cm (6in) in diameter   |   |   |  |
| Standing dead trees >25cm (10in) diameter at breast height  |   |   |  |
| Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction              |   |   |  |

| Table 6. Cover scale for microtopographic habitat features                                  |   |  |  |  |
|---|---|--|--|--|
| Microtopographic habitat quality Narrative description                                      |   |  |  |  |
| 0 Feature is absent or functionally absent from the wetland                                 |   |  |  |  |
| 1 Feature is present in the wetland in very small amounts or if more common, of low quality |   |  |  |  |
| 2   | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |  |  |  |
| 3   | Present in moderate or greater amounts and of the highest quality   |  |  |  |

Metric 6 Total 6

## **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 1  |
|-----------------------------------|---|----|
|                                   | Metric 2: Buffers and surrounding land use                  | 1  |
|                                   | Metric 3: Hydrology   | 5  |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 3  |
|                                   | Metric 5: Special Wetland Communities                       | 0  |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 6  |
|                                   | TOTAL SCORE   | 16 |

SR Ripley II

Rank = Low

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)

### W002 **Quantitative Rating Tennessee Rapid Assessment Method**

09/19/2022

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN)       | >25 acres (middle TN)     | >10 acres (east TN *)  |   |
|------|---------------------------|---------------------------|------------------------|---|
| 5pts | 25 - <50 acres (west TN)  | 10- 25 acres (middle TN)  | 7-<10 acres (east TN*) |   |
| 4pts | 10 - <25 acres (west TN)  | 7-< 25acres (middle TN)   | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)    | 3< 7 acres (middle TN)    | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)  | 0.5- <3 acres (middle TN) | 0.5-<1 acres (east TN) |   |
| 1pt  | 0.1 - <0.3 acres(west TN) | <0.5 acres (middle TN)    | <0.5 acres (east TN)   | 1 |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2 | Table 2. Metric to English conversion table with visual estimation sizes. |                 |               |               |      |         |           |
|---------|---|-----------------|---------------|---------------|------|---------|-----------|
| acres   | ft²   | yd <sup>2</sup> | ft on<br>side | yd on<br>side | ha   | m²      | m on side |
| 50      | 2,177,983   | 241,998         | 1476          | 492           | 20.2 | 202,000 | 449       |
| 25      | 1,088,992   | 120,999         | 1044          | 348           | 10.1 | 101,000 | 318       |
| 10      | 435,596   | 48,340          | 660           | 220           | 4.1  | 41,000  | 203       |
| 3       | 130,679   | 14,520          | 362           | 121           | 1.2  | 12,000  | 110       |
| 0.3     | 13,067  | 1,452           | 114           | 38            | 0.12 | 1,200   | 35        |
| 0.1     | 4,356   | 484             | 66            | 22            | 0.04 | 400     | 20        |

|                | 4 |
|----------------|---|
|                | 1 |
| Metric 1 Total | I |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| buffer v<br>25m, 1 | erage Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW width on each side (max of 50m) and divide by the number of sides, Example: ABW of a wetland with buffers on 20m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land use e.g. active row cropping, paved areas, housing developments, etc. | f 100m,      |          |
|--------------------|--|--------------|----------|
| 7pts               | WIDE. >50m (164ft) or more around perimeter.   |              |          |
| 4pts               | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.   |              |          |
| 1pt                | NARROW. 10m to <25m (32 to <82ft) around the perimeter.  |              |          |
| 0pts               | VERY NARROW. <10m (<32ft) around perimeter.  | 0            | 2a Avg.= |
|                    | ensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the dominant land use(s) outside the wetland's buffer zone.   | intensity of | 0.00     |
| 7pts               | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.   |              |          |
| 5pts               | LOW. Old fallow field, shrub land, early successional young forest, etc.   |              |          |
| 3pts               | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.  |              |          |
| 1pt                | HIGH. urban, industrial, row cropping, mining, construction, etc.  | 1            | 2b Avg.= |

SR Ripley II

Metric 2 Total 1.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| wetland  | urces of Water. Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflect swith certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water conrevery high quality wetlands or can have high functions and values.  |      |  |
|----------|---|------|--|
| 5pts     | 5pts High pH groundwater (7.5-9.0)  |      |  |
| 3pts     | Other groundwater   |      |  |
| 1pts     | Precipitation   | 1    |  |
| 3pts     | Seasonal surface water  |      |  |
| 5pts     | Perennial surface water (lake or stream)  |      |  |
| 3b. Cor  | nnectivity. Select all that apply and sum score   |      |  |
| 1pt      | <b>100 year floodplain.</b> "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.  | 1    |  |
| 1pt      | Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. |      |  |
| 1pt      | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.  |      |  |
| 1pt      | Part of riparian corridor.  |      |  |
| depth is | <b>timum water depth.</b> Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland whe greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 is seful in answering this question.   |      |  |
| 3 pts    | >0.7m (27.6in)  |      |  |
| 2pts     | 0.4 to 0.7m (15.7 to 27.6in)  |      |  |
| 1pt      | <0.4m (<15.7in)   | 1    |  |
|          | ation of inundation/saturation. Select one or double check and average the scores if duration is uncertain. The use of anual secondary indicators is necessary and expected in order to properly answer this question.  | ACOE |  |
| 4pts     | Semi-permanently to permanently inundated or saturated  |      |  |
| 3pts     | Regularly inundated or saturated  |      |  |
| 2pts     | Seasonally inundated  |      |  |
| 1pt      | Seasonally saturated in the upper 30cm (12in) of soil   | 1    |  |

SR Ripley II

3d Avg = 1.00

**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

| Check all that are | observed | nresent in | or near the | wetland |
|--------------------|----------|------------|-------------|---------|
|                    |          |            |             |         |

|                                 | ditch(es), in or near the wetland     |   | point source discharges to the (non-stormwater)   |  |
|---------------------------------|---------------------------------------|---|---|--|
| tile(s), in or near the wetland |                                       |   | filling/grading activities in or near the wetland |  |
|                                 | dike(s), in or near the wetland       |   | road beds/RR beds in or near the wetland          |  |
|                                 | weir(s), in or near the wetland       |   | dredging activities in or near the wetland        |  |
|                                 | stormwater inputs (addition of water) | Х | other (specify) agricultural field                |  |

| Have any of the disturbances identified above caused or appear                           | YES   | <u>NO</u>   | NOT SURE                                      |
|--|---|---|---|
| to have caused more than trivial alterations to the wetland's natural hydrologic regime. | Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance. | Assign a score of 12 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 9.5. |

| Select | Select one or double check adjoining numbers and average the score.   |   |
|--------|---|---|
| 12pts  | NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator.   |   |
| 7pts   | RECOVERED. The wetland appears to have recovered from past modifications.   |   |
| 3pts   | RECOVERING. The wetland appears to be in the process of recovering from past modifications.   |   |
| 1pt    | RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the wetland has not recovered from past modifications, and/or the modifications are ongoing. | 1 |

3e Avg= **1.00** 

SR Ripley II

Metric 3 Total 5.00

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

|  | ,  |  |                        |   |  |         |               |
|--|--|--|------------------------|---|--|---------|---------------|
| 4a. Substrate/Soil Disturbance. Select one or double check and average. This question evaluates physical disturbances to the soil and surface substrates of the wetland. Note also that the labels on the scoring categories are intended to be descriptive but not controlling. In some instances, it may be more appropriate to consider the scoring categories as fixed locations on a disturbance continuum, from very high to very low or no disturbance.  Examples of substrate/soil disturbance include (circle all apply): filling and grading plowing grazing (hooves) vehicle use (off-road vehicles, construction vehicles sedimentation dredging, and other mechanical disturbances to the |  |  | construction vehicles) |   |  |         |               |
|  | Have any of soil or substrate<br>disturbances caused or<br>appear to have caused more<br>than trivial alterations to the<br>wetland's natural soils  | YES  Assign a score 1, 2 or 3 an intermediate score depending on degree recovery from the disturbance. | €,                     | NO Assign a score of 4 since there are no or no apparent modifications. | NOT SURE  Choose "recovered" assign a score of 3 |         |               |
| s  | elect one or double check adjo   | ining numbers and aver   | age                    | the score.  |  |         |               |
| 4  | ots NONE OR NONE APPA evaluator.   | RENT. There are no distu   | ırban                  | nces or no disturbances apparent  | to the   |         |               |
| 3  | ots RECOVERED. The wetl  | and appears to have reco   | vere                   | d from past disturbances.   |  |         |               |
|  |  | tland appears to be in the   | proc                   | ess of recovering from past distu                                       | ırbances.  |         |               |
|  | 2pts RECOVERING. The wetland appears to be in the process of recovering from past disturbances.  1pt RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances, and/or the disturbances are ongoing. |  |                        |   |  | 1       | 4a Avg        |
| ra<br>T  | b. Habitat development. Select<br>ting of how well-developed the w<br>his question presumes knowledg<br>ference standard examples. If ur   | etland is in comparison to<br>e of the types of wetlands   | othe<br>and            | er ecologically and/or hydrogeom<br>the range in quality typical of the | orphically similar wetla                         | nds.    |               |
| 7  | 7pts EXCELLENT. Wetland appears to represent the best of its type or class.  |  |                        |   |  |         |               |
| 6  | Opts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  |  |                        |   |  |         |               |
| 5  | pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.   |  |                        |   |  |         |               |
| 4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.   |  |  |                        |   |  |         |               |
| 3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.   |  |  |                        |   |  |         |               |
| 2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.  |  |  |                        |   |  |         |               |
| 1  | POOR. Wetland appears <u>not</u> to be a good example of its type or class because of past or present disturbances, successional state, etc.   |  |                        |   | 1  | 4b Avg. |               |
| _  |  |  |                        |   |  | -       | <b>-</b> 1.00 |

SR Ripley II W002

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

Check all that are observed present in or near the wetland

Mowing Herbaceous layer/aquatic bed removal

Grazing (cattle, horses, etc.) Sedimentation

Clearcutting Dredging

Selective cutting X Row-crop or orchard farming

Nutrient enrichment, e.g. nuisance algae

Toxic pollutants
Other (specify):
Shrub/sapling removal
Other (specify):

Woody debris removal

| Have any of the disturbances identified above caused or                           | <u>YES</u>  | <u>NO</u>  | NOT SURE                                    |
|---|---|--|---|
| appeared to cause more than trivial alterations to the wetland's natural habitat. | Assign a score 1, 3 or 6,<br>or an intermediate<br>score, depending on<br>degree of recovery from<br>the disturbance. | Assign a score of 9 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 6. |

| Select | Select one score or double check adjoining numbers and average the score.  |   |
|--------|--|---|
| 9pts   | NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.  |   |
| 6pts   | RECOVERED. The wetland appears to have recovered from past alterations.  |   |
| 3pts   | RECOVERING. The wetland appears to be in the process of recovering from past alterations.  |   |
| 1pt    | RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. | 1 |

4c Avg. = 1.00

Metric 4 Total

letric 4 Total \_

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| L |   | 3  |
|---|---|--|
|   | 5pts - >10m sq sphagnum or other moss or other vernal pools   | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat   |
|   | Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) | 5 pts - Wetland contains and is a buffer for a headwate stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface cand/or to ground water |
|   | 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   | 10 pts - Supports species Deemed in Need of Management by TWRA or TN Special Concern by TDE  |

| Metric 5 Total | 0 |
|----------------|---|
| Metric 5 Total |   |

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  6a. Wetland Vegetation Communities Check each community present both vertically and horizontally within the wetland with an area of at least 0.1 hectares or 1000m <sup>2</sup> (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.                                    | Score |
|--|-------|
| 4 of Table 5 for 5-6. Sum the scores for the classes present.  |       |
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            |       |
| <b>2)Emergent</b> Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.  | 3     |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     |       |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". |       |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   |       |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   |       |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |
|----------------|---|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |
|---|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |
| 3 | High 4 ha (9.88 acres) or more               |

|      | 6b. Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |   |
|------|---|---|
| 5pts | HIGH Wetland has a high degree of interspersion   |   |
| 4pts | MODERATELY HIGH Wetland has a moderately high degree of interspersion   |   |
| 3pts | MODERATE Wetland has a moderate degree of interspersion   |   |
| 2pts | MODERATELY LOW Wetland has a moderately low degree of interspersion   |   |
| 1pt  | LOW Wetland has a low degree of interspersion.  | 1 |
| 0pt  | NONE Wetland has no plan view interspersion   |   |

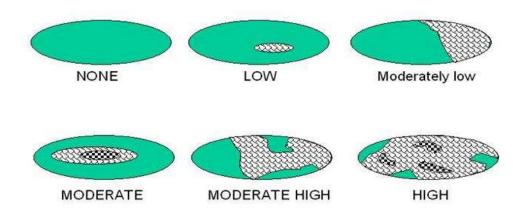


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

|  | <b>6c. Coverage of Invasive Plant Species</b> . Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score.                        |   |
|--|---|---|
| -5pts  | Extensive >75% areal cover of invasive species  |   |
| -3pts  | Moderate 25-75% areal cover of invasive species   |   |
| -1pts  | Sparse 5-25% areal cover of invasive species  |   |
| 0pt  | Nearly absent. <5% areal cover of invasive species  |   |
| 1pt  | Absent  | 1 |
|  | <b>6d. Microtopography</b> . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopographic habitat features often present in wetlands. |   |
| Vegetat  | Vegetated hummocks and tussocks   |   |
| Coarse woody debris >15cm (6in) in diameter  |   |   |
| Standing dead trees >25cm (10in) diameter at breast height   |   |   |
| Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction |   | 1 |

| Table 6. Cover scale for         | able 6. Cover scale for microtopographic habitat features   |  |  |  |  |
|----------------------------------|---|--|--|--|--|
| Microtopographic habitat quality | Narrative description   |  |  |  |  |
| 0                                | Feature is absent or functionally absent from the wetland   |  |  |  |  |
| 1                                | Feature is present in the wetland in very small amounts or if more common, of low quality                 |  |  |  |  |
| 2                                | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |  |  |  |  |
| 3                                | Present in moderate or greater amounts and of the highest quality   |  |  |  |  |

Metric 6 Total 6

## **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 1  |
|-----------------------------------|---|----|
|                                   | Metric 2: Buffers and surrounding land use                  | 1  |
|                                   | Metric 3: Hydrology   | 5  |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 3  |
|                                   | Metric 5: Special Wetland Communities                       | 0  |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 6  |
|                                   | TOTAL SCORE   | 16 |

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Rank = Low

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)

# Quantitative Rating Tennessee Rapid Assessment Method

W003 09/20/2022

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN)       | >25 acres (middle TN)     | >10 acres (east TN *)  |   |
|------|---------------------------|---------------------------|------------------------|---|
| 5pts | 25 - <50 acres (west TN)  | 10- 25 acres (middle TN)  | 7-<10 acres (east TN*) |   |
| 4pts | 10 - <25 acres (west TN)  | 7-< 25acres (middle TN)   | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)    | 3< 7 acres (middle TN)    | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)  | 0.5- <3 acres (middle TN) | 0.5-<1 acres (east TN) |   |
| 1pt  | 0.1 - <0.3 acres(west TN) | <0.5 acres (middle TN)    | <0.5 acres (east TN)   | 1 |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2. Metric to English conversion table with visual estimation sizes. |   |         |      |     |      |         |     |  |
|---|---|---------|------|-----|------|---------|-----|--|
| acres   | acres $ft^2$ $yd^2$ $ft$ on $yd$ on ha $m^2$ $m$ on |         |      |     |      |         |     |  |
| 50  | 2,177,983   | 241,998 | 1476 | 492 | 20.2 | 202,000 | 449 |  |
| 25  | 1,088,992   | 120,999 | 1044 | 348 | 10.1 | 101,000 | 318 |  |
| 10  | 435,596   | 48,340  | 660  | 220 | 4.1  | 41,000  | 203 |  |
| 3   | 130,679   | 14,520  | 362  | 121 | 1.2  | 12,000  | 110 |  |
| 0.3   | 13,067  | 1,452   | 114  | 38  | 0.12 | 1,200   | 35  |  |
| 0.1   | 4,356   | 484     | 66   | 22  | 0.04 | 400     | 20  |  |

|                | 1 |  |
|----------------|---|--|
|                |   |  |
| Metric 1 Total |   |  |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| 2a. Average Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW, estimate buffer width on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 100m, 25m, 10m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses are not buffers, e.g. active row cropping, paved areas, housing developments, etc. |   |   |          |  |  |  |
|--|---|---|----------|--|--|--|
| 7pts   | WIDE. >50m (164ft) or more around perimeter.  |   |          |  |  |  |
| 4pts   | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.                                      |   |          |  |  |  |
| 1pt  | 1pt NARROW. 10m to <25m (32 to <82ft) around the perimeter.                                   |   |          |  |  |  |
| 0pts   | opts VERY NARROW. <10m (<32ft) around perimeter.  |   |          |  |  |  |
| <b>2b.</b> Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.   |   |   |          |  |  |  |
| 7pts   | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.        |   |          |  |  |  |
| 5pts   | 5pts LOW. Old fallow field, shrub land, early successional young forest, etc.                 |   |          |  |  |  |
| 3pts   | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc. |   |          |  |  |  |
| 1pt  | HIGH. urban, industrial, row cropping, mining, construction, etc.                             | 1 | 2b Avg.= |  |  |  |

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Metric 2 Total 1.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| <b>3a. Sources of Water.</b> Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values. |   |      |  |  |  |
|--|---|------|--|--|--|
| 5pts   | High pH groundwater (7.5-9.0)   |      |  |  |  |
| 3pts   | Other groundwater   |      |  |  |  |
| 1pts   | Precipitation   | 1    |  |  |  |
| 3pts   | Seasonal surface water  |      |  |  |  |
| 5pts   | Perennial surface water (lake or stream)  |      |  |  |  |
| 3b. Coni   | nectivity. Select all that apply and sum score  |      |  |  |  |
| 1pt  | 100 year floodplain. "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.   |      |  |  |  |
| 1pt  | Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. |      |  |  |  |
| 1pt  | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.  |      |  |  |  |
| 1pt  | Part of riparian corridor.  | 0    |  |  |  |
| <b>3c. Maximum water depth.</b> Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland when its depth is greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 Maximum be useful in answering this question.   |   |      |  |  |  |
| 3 pts  | >0.7m (27.6in)  |      |  |  |  |
| 2pts   | 0.4 to 0.7m (15.7 to 27.6in)  |      |  |  |  |
| 1pt  | <0.4m (<15.7in)   | 1    |  |  |  |
|  | <b>Ition of inundation/saturation.</b> Select one or double check and average the scores if duration is uncertain. The use of a nual secondary indicators is necessary and expected in order to properly answer this question.  | ACOE |  |  |  |
| 4pts   | Semi-permanently to permanently inundated or saturated  |      |  |  |  |
| 3pts   | Regularly inundated or saturated  |      |  |  |  |
| 2pts   | Seasonally inundated  |      |  |  |  |
| 1pt  | Seasonally saturated in the upper 30cm (12in) of soil   | 1    |  |  |  |

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3d Avg = 1.00

**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

| ditch(es), in or near the wetland     |   | point source discharges to the (non-stormwater)   |
|---------------------------------------|---|---|
| tile(s), in or near the wetland       |   | filling/grading activities in or near the wetland |
| dike(s), in or near the wetland       |   | road beds/RR beds in or near the wetland          |
| weir(s), in or near the wetland       |   | dredging activities in or near the wetland        |
| stormwater inputs (addition of water) | Х | other (specify) agricultural field                |

| Have any of the disturbances identified above caused or appear                           | YES   | <u>NO</u>   | NOT SURE                                      |  |
|--|---|---|---|--|
| to have caused more than trivial alterations to the wetland's natural hydrologic regime. | Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance. | Assign a score of 12 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 9.5. |  |

| Select | Select one or double check adjoining numbers and average the score.   |   |  |  |  |
|--------|---|---|--|--|--|
| 12pts  | NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator.   |   |  |  |  |
| 7pts   | 7pts RECOVERED. The wetland appears to have recovered from past modifications.  |   |  |  |  |
| 3pts   | s RECOVERING. The wetland appears to be in the process of recovering from past modifications.   |   |  |  |  |
| 1pt    | RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the wetland has not recovered from past modifications, and/or the modifications are ongoing. | 1 |  |  |  |

3e Avg= **1.00** 

SR Ripley II

Metric 3 Total 4.00

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

| 4a. Substrate/Soil Disturbance. Select one or double check and average. This question evaluates physical disturbances to the soil and surface substrates of the wetland. Note also that the labels on the scoring categories are intended to be descriptive but not controlling. In some instances, it may be more appropriate to consider the scoring categories as fixed locations on a disturbance continuum, from very high to very low or no disturbance.  Examples of substrate/soil disturbance include (circle all tapply):  filling and grading  in plowing  grazing (hooves)  vehicle use (off-road vehicles, construction vehicles) sedimentation  dredging, and other mechanical disturbances to the   |  |  |   |   |                                    |              |   |                |
|--|--|--|---|---|------------------------------------|--------------|---|----------------|
| Have any of soil or substrate disturbances caused or appear to have caused more than trivial alterations to the wetland's natural soils  Have any of soil or substrate disturbances or substrate disturbance in the disturbanc |  | €,   | NO Assign a score of 4 since there are no or no apparent modifications. | NOT SURE Choose "recovered" assign a score of 3 |                                    |              |   |                |
| s  | elect o  | ne or double check adjo  | ining numbers and aver  | age   | the score.                         |              |   | 7              |
| 4  | pts  | NONE OR NONE APPA evaluator.   | RENT. There are no distu  | ırban   | nces or no disturbances apparent   | to the       |   | 1              |
| 3  | pts  | RECOVERED. The wetl  | and appears to have reco  | vere  | d from past disturbances.          |              |   | 7              |
| 2  | pts  | RECOVERING. The wet  | land appears to be in the   | proc  | cess of recovering from past distu | ırbances.    |   | 7              |
|  | pt   | RECENT OR NO RECO  |   | have  | e occurred recently, and/or the w  |              | 1 | 4a Avg<br>1.00 |
| <b>4b. Habitat development.</b> Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.   |  |  |   |   | ınds.                              |              |   |                |
| 7  | pts  | EXCELLENT. Wetland   | appears to represent the I  | best (  | of its type or class.              |              |   | $\exists$      |
| 6  | pts  | VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.                             |   |   |                                    |              |   |                |
| 5  | pts  | s GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent. |   |   |                                    |              |   |                |
| 4  | 4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.   |  |   |   |                                    |              | 7 |                |
| 3  | 3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good. |  |   |   |                                    |              |   |                |
| 2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.  |  |  |   |   | 7                                  |              |   |                |
| 1  | pt   | POOR. Wetland appear disturbances, succession  |   | ole of  | f its type or class because of pas | t or present | 1 | 4b Avg.=       |
|  |  |  |   |   |                                    |              |   | <b>-</b> 1.00  |

SR Ripley II W003

4c. Habitat alteration. This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.

Check all that are observed present in or near the wetland

|  | Mowing                         |   | Herbaceous layer/aquatic bed removal     |  |
|--|--------------------------------|---|--|--|
|  | Grazing (cattle, horses, etc.) |   | Sedimentation                            |  |
|  | Clearcutting                   |   | Dredging                                 |  |
|  | Selective cutting              | Х | Row-crop or orchard farming              |  |
|  | Woody debris removal           |   | Nutrient enrichment, e.g. nuisance algae |  |
|  | Toxic pollutants               |   | Other (specify):                         |  |
|  | Shrub/sapling removal          |   | Other (specify):                         |  |

| Have any of the disturbances identified above caused or                           | <u>YES</u>  | <u>NO</u>  | NOT SURE                                    |
|---|---|--|---|
| appeared to cause more than trivial alterations to the wetland's natural habitat. | Assign a score 1, 3 or 6,<br>or an intermediate<br>score, depending on<br>degree of recovery from<br>the disturbance. | Assign a score of 9 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 6. |

| Select one score or double check adjoining numbers and average the score. |  | Score |
|---|--|-------|
| 9pts  | NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.  |       |
| 6pts  | RECOVERED. The wetland appears to have recovered from past alterations.  |       |
| 3pts  | RECOVERING. The wetland appears to be in the process of recovering from past alterations.  |       |
| 1pt   | RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. | 1     |

4c Avg. = 1.00

Metric 4 Total

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| 5pts - >10m sq sphagnum or other moss or other vernal pools   | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat  |
|---|---|
| Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |
| 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   | 10 pts - Supports species Deemed in Need of Management by TWRA or TN Special Concern by TDEC  |

| Metric 5 Total | 0 |
|----------------|---|
| Metric 5 Total |   |

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  6a. Wetland Vegetation Communities Check each community present both vertically and horizontally within the wetland with an area of at least 0.1 hectares or 1000m² (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.  | Score |
|--|-------|
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            | 0     |
| 2)Emergent Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.   | 0     |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     | 0     |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". | 0     |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   | 0     |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   | 0     |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |
|----------------|---|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |
|---|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |
| 3 | High 4 ha (9.88 acres) or more               |

| <b>6b.</b> Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |   | Score |  |
|--|---|-------|--|
| 5pts   | HIGH Wetland has a high degree of interspersion                       |       |  |
| 4pts   | MODERATELY HIGH Wetland has a moderately high degree of interspersion |       |  |
| 3pts   | MODERATE Wetland has a moderate degree of interspersion               |       |  |
| 2pts   | MODERATELY LOW Wetland has a moderately low degree of interspersion   |       |  |
| 1pt  | LOW Wetland has a low degree of interspersion.                        | 1     |  |
| 0pt  | NONE Wetland has no plan view interspersion                           |       |  |

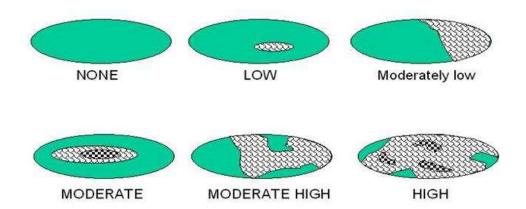


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

| <b>6c. Coverage of Invasive Plant Species.</b> Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score.                         |   |   |  |  |
|---|---|---|--|--|
| -5pts   | Extensive >75% areal cover of invasive species  |   |  |  |
| -3pts   | Moderate 25-75% areal cover of invasive species   |   |  |  |
| -1pts   | Sparse 5-25% areal cover of invasive species  |   |  |  |
| 0pt   | Nearly absent. <5% areal cover of invasive species  |   |  |  |
| 1pt   | Absent  | 1 |  |  |
| <b>6d. Microtopography</b> . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopographic habitat features often present in wetlands. |   |   |  |  |
| Vegetated hummocks and tussocks   |   |   |  |  |
| Coarse woody debris >15cm (6in) in diameter   |   |   |  |  |
| Standing dead trees >25cm (10in) diameter at breast height  |   |   |  |  |
|   | pian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support action, or habitat for frog reproduction | 1 |  |  |

| Table 6. Cover scale for microtopographic habitat features |   |  |  |  |  |
|--|---|--|--|--|--|
| Microtopographic<br>habitat quality                        | Narrative description   |  |  |  |  |
| 0  | Feature is absent or functionally absent from the wetland   |  |  |  |  |
| 1  | Feature is present in the wetland in very small amounts or if more common, of low quality                 |  |  |  |  |
| 2  | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |  |  |  |  |
| 3  | Present in moderate or greater amounts and of the highest quality   |  |  |  |  |

Metric 6 Total <u>3</u>

#### **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 1  |
|-----------------------------------|---|----|
|                                   | Metric 2: Buffers and surrounding land use                  | 1  |
|                                   | Metric 3: Hydrology   | 4  |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 3  |
|                                   | Metric 5: Special Wetland Communities                       | 0  |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 3  |
|                                   | TOTAL SCORE   | 12 |

SR Ripley II

Rank = Low

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)

# Quantitative Rating Tennessee Rapid Assessment Method

W004 09/20/2022

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN)       | >25 acres (middle TN)     | >10 acres (east TN *)  |   |
|------|---------------------------|---------------------------|------------------------|---|
| 5pts | 25 - <50 acres (west TN)  | 10- 25 acres (middle TN)  | 7-<10 acres (east TN*) |   |
| 4pts | 10 - <25 acres (west TN)  | 7-< 25acres (middle TN)   | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)    | 3< 7 acres (middle TN)    | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)  | 0.5- <3 acres (middle TN) | 0.5-<1 acres (east TN) | 2 |
| 1pt  | 0.1 - <0.3 acres(west TN) | <0.5 acres (middle TN)    | <0.5 acres (east TN)   |   |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2. Metric to English conversion table with visual estimation sizes. |   |         |      |     |      |         |     |  |  |  |
|---|---|---------|------|-----|------|---------|-----|--|--|--|
| acres   | acres ft <sup>2</sup> yd <sup>2</sup> ft on yd on ha m <sup>2</sup> m on side |         |      |     |      |         |     |  |  |  |
| 50  | 2,177,983   | 241,998 | 1476 | 492 | 20.2 | 202,000 | 449 |  |  |  |
| 25  | 1,088,992   | 120,999 | 1044 | 348 | 10.1 | 101,000 | 318 |  |  |  |
| 10  | 435,596   | 48,340  | 660  | 220 | 4.1  | 41,000  | 203 |  |  |  |
| 3   | 130,679   | 14,520  | 362  | 121 | 1.2  | 12,000  | 110 |  |  |  |
| 0.3   | 13,067  | 1,452   | 114  | 38  | 0.12 | 1,200   | 35  |  |  |  |
| 0.1   | 4,356   | 484     | 66   | 22  | 0.04 | 400     | 20  |  |  |  |

|                | 0 |
|----------------|---|
| Metric 1 Total | 2 |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| 7pts WIDE. >50m (164ft) or more around perimeter.  4pts MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.  1pt NARROW. 10m to <25m (32 to <82ft) around the perimeter.  2pt VERY NARROW. <10m (<32ft) around perimeter.  2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.  7pts VERY LOW. 2nd growth or older forest, prairie, barren, wildlife area, etc.  5pts LOW. Old fallow field, shrub land, early successional young forest, etc.  3pts MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.  2b Avg.= 2b Avg.= 2c Av | <b>2a. Average Buffer Width (ABW).</b> Calculate the average buffer width and select only one score. To calculate ABW, estimate buffer width on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 100m, 25m, 10m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses are not buffers, e.g. active row cropping, paved areas, housing developments, etc. |   |   |          |  |  |  |
|--|---|---|---|----------|--|--|--|
| 1pt NARROW. 10m to <25m (32 to <82ft) around the perimeter.  2pt VERY NARROW. <10m (<32ft) around perimeter.  2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.  7pts VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  5pts LOW. Old fallow field, shrub land, early successional young forest, etc.  3pts MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.  | 7pts  | WIDE. >50m (164ft) or more around perimeter.  |   |          |  |  |  |
| Opts VERY NARROW. <10m (<32ft) around perimeter.  2a Avg.= 2.00  2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.  7pts VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  5pts LOW. Old fallow field, shrub land, early successional young forest, etc.  3pts MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.   | 4pts  | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.                                      |   |          |  |  |  |
| 2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.  7pts VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  5pts LOW. Old fallow field, shrub land, early successional young forest, etc.  3pts MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.  | 1pt   | NARROW, 10m to <25m (32 to <82ft) around the perimeter.                                       | 2 | 1        |  |  |  |
| 2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.  7pts VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  5pts LOW. Old fallow field, shrub land, early successional young forest, etc.  3pts MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.  | 0pts  | opts VERY NARROW. Storm (SZIL) around perimeter.  |   |          |  |  |  |
| 5pts LOW. Old fallow field, shrub land, early successional young forest, etc.  3pts MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.  |   |   |   |          |  |  |  |
| 3pts MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.   | 7pts  | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.        |   |          |  |  |  |
| 2h Aver-   | 5pts  | LOW. Old fallow field, shrub land, early successional young forest, etc.                      |   |          |  |  |  |
| 1pt HIGH. urban, industrial, row cropping, mining, construction, etc. 2 2b Avg.=   | 3pts  | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc. |   | ]        |  |  |  |
|  | 1pt   | HIGH. urban, industrial, row cropping, mining, construction, etc.                             | 2 | 2b Avg.= |  |  |  |

SR Ripley II

Metric 2 Total 4.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| wetlands  | <b>3a. Sources of Water.</b> Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values.  |   |  |  |  |  |
|---|---|---|--|--|--|--|
| 5pts  | High pH groundwater (7.5-9.0)   |   |  |  |  |  |
| 3pts  | Other groundwater   |   |  |  |  |  |
| 1pts  | Precipitation   | 1 |  |  |  |  |
| 3pts  | Seasonal surface water  |   |  |  |  |  |
| 5pts  | Perennial surface water (lake or stream)  |   |  |  |  |  |
| 3b. Coni  | nectivity. Select all that apply and sum score  |   |  |  |  |  |
| 1pt   | 100 year floodplain. "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.   |   |  |  |  |  |
| 1pt   | Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. |   |  |  |  |  |
| 1pt   | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.  |   |  |  |  |  |
| 1pt   | Part of riparian corridor.  |   |  |  |  |  |
| depth is  | <b>mum water depth</b> . Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland when greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 seful in answering this question.  |   |  |  |  |  |
| 3 pts   | >0.7m (27.6in)  |   |  |  |  |  |
| 2pts  | 0.4 to 0.7m (15.7 to 27.6in)  |   |  |  |  |  |
| 1pt   | <0.4m (<15.7in)   | 1 |  |  |  |  |
| <b>3d. Duration of inundation/saturation.</b> Select one or double check and average the scores if duration is uncertain. The use of ACOE 1987 Manual secondary indicators is necessary and expected in order to properly answer this question. |   |   |  |  |  |  |
| 4pts  | Semi-permanently to permanently inundated or saturated  |   |  |  |  |  |
| 3pts  | Regularly inundated or saturated  |   |  |  |  |  |
| 2pts  | Seasonally inundated  |   |  |  |  |  |
| 1pt   | Seasonally saturated in the upper 30cm (12in) of soil   | 1 |  |  |  |  |

SR Ripley II

3d Avg = 1.00

**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

Check all that are observed present in or near the wetland.

| X | ditch(es), in or near the wetland     |   | point source discharges to the (non-stormwater)   |
|---|---------------------------------------|---|---|
|   | tile(s), in or near the wetland       |   | filling/grading activities in or near the wetland |
|   | dike(s), in or near the wetland       |   | road beds/RR beds in or near the wetland          |
|   | weir(s), in or near the wetland       |   | dredging activities in or near the wetland        |
|   | stormwater inputs (addition of water) | Х | other (specify) adjacent to agricultural field    |

| lave any of the disturbances dentified above caused or appear to have caused more than trivial literations to the wetland's natural ydrologic regime.  YES  Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance. |  | NO Assign a score of 12 since there are no or no apparent modifications. | NOT SUF<br>Choose "recove<br>assign a score | red" and |  |
|---|--|--|---|----------|--|
| Select one or double check adjoining numbers and average the score.   |  |  |   |          |  |

| Select | one or double check adjoining numbers and average the score.  | score |  |  |
|--------|---|-------|--|--|
| 12pts  | 12pts NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator.   |       |  |  |
| 7pts   | RECOVERED. The wetland appears to have recovered from past modifications.   |       |  |  |
| 3pts   | RECOVERING. The wetland appears to be in the process of recovering from past modifications.   | 4     |  |  |
| 1pt    | RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the wetland has not recovered from past modifications, and/or the modifications are ongoing. |       |  |  |

3e Avg=

SR Ripley II

Metric 3 Total 8.00

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

|  |   |   |  |  |   |          | <u>-</u>        |
|--|---|---|--|--|---|----------|-----------------|
| 4a. Substrate/Soil Disturbance. Select one or double check and average. This question evaluates physical disturbances to the soil and surface substrates of the wetland. Note also that the labels on the scoring categories are intended to be descriptive but not controlling. In some instances, it may be more appropriate to consider the scoring categories as fixed locations on a disturbance continuum, from very high to very low or no disturbance. |   |   |  | amples of substrate/soil disturba<br>ply):<br>filling and grading<br>plowing<br>grazing (hooves)<br>vehicle use (off-road vehicles,<br>sedimentation<br>dredging, and other mechanic | construction vehicles)                    |          |                 |
|  | Have any of soil or substrate disturbances caused or  | YES   |  | <u>NO</u>  | NOT SURE                                  |          |                 |
|  | appear to have caused more<br>than trivial alterations to the<br>wetland's natural soils  | Assign a score 1, 2 or 3 an intermediate score depending on degree recovery from the disturbance. | rmediate score, ing on degree of very from the there are no or no apparent assign a modifications. |  | Choose "recovered"<br>assign a score of 3 | <b>I</b> |                 |
| s  | elect one or double check adj   | oining numbers and aver   | rage   | the score.   |   |          |                 |
| 4  | ots NONE OR NONE APP/<br>evaluator.   | ARENT. There are no distu   | ırban  | nces or no disturbances apparent   | t to the                                  |          |                 |
| 3  | ots RECOVERED. The wet  | land appears to have reco   | vere   | d from past disturbances.  |   |          |                 |
| 2  | ots RECOVERING. The we  | etland appears to be in the   | proc   | ess of recovering from past distu  | ırbances.                                 | 2        |                 |
| 1  |   | OVERY. The disturbances t disturbances, and/or the  |  | e occurred recently, and/or the wrbances are ongoing.  | etland has                                |          | 4a Avg.<br>2.00 |
| ra<br>T  | ting of how well-developed the v  | wetland is in comparison to<br>ge of the types of wetlands  | othe<br>and  | nis question asks the evaluator to<br>er ecologically and/or hydrogeom<br>the range in quality typical of the<br>DERATELY GOOD.  | orphically similar wetla                  | ınds.    |                 |
| 7  | ots EXCELLENT. Wetland  | appears to represent the I  | best o   | of its type or class.  |   |          |                 |
| 6  | 6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.                           |   |  |  |   |          |                 |
| 5  | 5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent. |   |  |  |   |          |                 |
| 4  | 4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  |   |  |  |   |          |                 |
| 3  | 3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.        |   |  |  |   |          |                 |
| 2  | ots POOR TO FAIR. Wetla   | and appears to be a poor to   | o fair   | example of its type or class.  |   |          |                 |
| 1  | disturbances, successional state, etc.  |   |  |  |   |          | 4b Avg.=        |

SR Ripley II W004

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

Check all that are observed present in or near the wetland

| Mowing                         |   | Herbaceous layer/aquatic bed removal     |
|--------------------------------|---|--|
| Grazing (cattle, horses, etc.) |   | Sedimentation                            |
| Clearcutting                   |   | Dredging                                 |
| Selective cutting              | Х | Row-crop or orchard farming              |
| Woody debris removal           |   | Nutrient enrichment, e.g. nuisance algae |
| Toxic pollutants               |   | Other (specify):                         |
| Shrub/sapling removal          |   | Other (specify):                         |

| Have any of the disturbances identified above caused or                           | <u>YES</u>  | <u>NO</u>  | NOT SURE                                    |
|---|---|--|---|
| appeared to cause more than trivial alterations to the wetland's natural habitat. | Assign a score 1, 3 or 6,<br>or an intermediate<br>score, depending on<br>degree of recovery from<br>the disturbance. | Assign a score of 9 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 6. |

| Select one score or double check adjoining numbers and average the score.  |  | Score |
|--|--|-------|
| 9pts NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.   |  |       |
| 6pts   | pts RECOVERED. The wetland appears to have recovered from past alterations.                    |       |
| 3pts   | Spts RECOVERING. The wetland appears to be in the process of recovering from past alterations. |       |
| 1pt RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. |  |       |

4c Avg. = 3.00

Metric 4 Total

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| L |  |   |  |   |
|---|--|---|--|---|
|   |  | 5pts - >10m sq sphagnum or other moss or other vernal pools   |  | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat  |
|   |  | Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) |  | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |
|   |  | 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   |  | 10 pts - Supports species Deemed in Need of<br>Management by TWRA or TN Special Concern by TDEC   |

| Metric 5 Total  | 0 |
|-----------------|---|
| MICHIC J I OLAI |   |

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  6a. Wetland Vegetation Communities Check each community present both vertically and horizontally within the wetland with an area of at least 0.1 hectares or 1000m <sup>2</sup> (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.                                    | Score |
|--|-------|
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            | 0     |
| 2)Emergent Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.   |       |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     | 0     |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". | 2     |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   |       |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   | 0     |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |  |
|----------------|---|--|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |  |
| 1              | 1 Vegetation community is present and either, 1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or 2) if it comprises a significant part of the wetland's vegetation and is of low quality             |  |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |  |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |
|---|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |
| 3 | High 4 ha (9.88 acres) or more               |

|  | <b>6b.</b> Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |  |
|--|--|--|
| 5pts HIGH Wetland has a high degree of interspersion                       |  |  |
| 4pts MODERATELY HIGH Wetland has a moderately high degree of interspersion |  |  |
| 3pts   | MODERATE Wetland has a moderate degree of interspersion  |  |
| 2pts   | pts MODERATELY LOW Wetland has a moderately low degree of interspersion  |  |
| 1pt  | pt LOW Wetland has a low degree of interspersion.  |  |
| 0pt  | ot NONE Wetland has no plan view interspersion   |  |

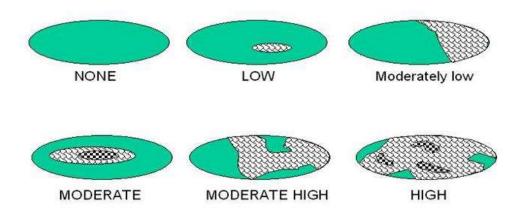


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

| <b>6c. Coverage of Invasive Plant Species</b> . Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score.                       |  | Score |
|--|--|-------|
| -5pts  | Extensive >75% areal cover of invasive species     |       |
| -3pts  | Moderate 25-75% areal cover of invasive species    | -3    |
| -1pts  | Sparse 5-25% areal cover of invasive species       |       |
| 0pt  | Nearly absent. <5% areal cover of invasive species |       |
| 1pt Absent   |  |       |
| <b>6d. Microtopography</b> . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopograhic habitat features often present in wetlands. |  | Score |
| Vegetated hummocks and tussocks  |  |       |
| Coarse woody debris >15cm (6in) in diameter  |  | 2     |
| Standing dead trees >25cm (10in) diameter at breast height   |  | 2     |
| Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction                                     |  |       |

| Table 6. Cover scale for microtopographic habitat features |   |  |  |
|--|---|--|--|
| Microtopographic habitat quality Narrative description     |   |  |  |
| 0  | Feature is absent or functionally absent from the wetland   |  |  |
| 1  | Feature is present in the wetland in very small amounts or if more common, of low quality                 |  |  |
| 2  | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |  |  |
| 3  | Present in moderate or greater amounts and of the highest quality   |  |  |

Metric 6 Total 6

#### **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 2  |
|-----------------------------------|---|----|
|                                   | Metric 2: Buffers and surrounding land use                  | 4  |
|                                   | Metric 3: Hydrology   | 8  |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 9  |
|                                   | Metric 5: Special Wetland Communities                       | 0  |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 6  |
|                                   | TOTAL SCORE   | 29 |

| SR Ripley II | W004       |
|--------------|------------|
| •            | Rank = Low |
|              |            |

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value."

(TRAM 2015, pg 2)

### W005 Quantitative Rating Tennessee Rapid Assessment Method

9/20/2022

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN)       | >25 acres (middle TN)     | >10 acres (east TN *)  |   |
|------|---------------------------|---------------------------|------------------------|---|
| 5pts | 25 - <50 acres (west TN)  | 10- 25 acres (middle TN)  | 7-<10 acres (east TN*) |   |
| 4pts | 10 - <25 acres (west TN)  | 7-< 25acres (middle TN)   | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)    | 3< 7 acres (middle TN)    | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)  | 0.5- <3 acres (middle TN) | 0.5-<1 acres (east TN) |   |
| 1pt  | 0.1 - <0.3 acres(west TN) | <0.5 acres (middle TN)    | <0.5 acres (east TN)   | 1 |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2 | e 2. Metric to English conversion table with visual estimation sizes. |                 |               |               |      |         |           |
|---------|---|-----------------|---------------|---------------|------|---------|-----------|
| acres   | ft²   | yd <sup>2</sup> | ft on<br>side | yd on<br>side | ha   | m²      | m on side |
| 50      | 2,177,983   | 241,998         | 1476          | 492           | 20.2 | 202,000 | 449       |
| 25      | 1,088,992   | 120,999         | 1044          | 348           | 10.1 | 101,000 | 318       |
| 10      | 435,596   | 48,340          | 660           | 220           | 4.1  | 41,000  | 203       |
| 3       | 130,679   | 14,520          | 362           | 121           | 1.2  | 12,000  | 110       |
| 0.3     | 13,067  | 1,452           | 114           | 38            | 0.12 | 1,200   | 35        |
| 0.1     | 4,356   | 484             | 66            | 22            | 0.04 | 400     | 20        |

|                | 1 |  |
|----------------|---|--|
|                |   |  |
| Metric 1 Total |   |  |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| opis VERT NARROW. < 10th (<32it) around perimeter.  | buffer w<br>25m, 10 | <b>2a.</b> Average Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW, estimate buffer width on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 100m, 25m, 10m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses are not buffers, e.g. active row cropping, paved areas, housing developments, etc. |             |          |  |  |  |
|---|---------------------|---|-------------|----------|--|--|--|
| 1pt NARROW. 10m to <25m (32 to <82ft) around the perimeter.  1  1  1  1  1  1  1  1  1  22  1  2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.  7pts VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc. | 7pts                | WIDE. >50m (164ft) or more around perimeter.  |             |          |  |  |  |
| Opts VERY NARROW. <10m (<32ft) around perimeter.  2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.  7pts VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  | 4pts                | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.  |             |          |  |  |  |
| 2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.  7pts VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  | 1pt                 | NARROW. 10m to <25m (32 to <82ft) around the perimeter.   | 1           |          |  |  |  |
| 2b. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.  7pts VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  | 0pts                | VERY NARROW. <10m (<32ft) around perimeter.   |             | 2a Avg.= |  |  |  |
|   |                     |   | ntensity of | 1.00     |  |  |  |
| 5pts LOW. Old fallow field, shrub land, early successional young forest, etc.   | 7pts                | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  |             |          |  |  |  |
|   | 5pts                | LOW. Old fallow field, shrub land, early successional young forest, etc.  |             |          |  |  |  |
| 3pts MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.  | 3pts                | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.   | 3           |          |  |  |  |
| 1pt HIGH. urban, industrial, row cropping, mining, construction, etc.   | 1pt                 | HIGH. urban, industrial, row cropping, mining, construction, etc.   |             | 2b Avg.= |  |  |  |

SR Ripley II

Metric 2 Total 4.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| <b>3a. Sources of Water.</b> Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values. |   |      |  |  |  |
|--|---|------|--|--|--|
| 5pts   | High pH groundwater (7.5-9.0)   |      |  |  |  |
| 3pts   | Other groundwater   |      |  |  |  |
| 1pts   | Precipitation   | 2    |  |  |  |
| 3pts   | Seasonal surface water  |      |  |  |  |
| 5pts   | Perennial surface water (lake or stream)  |      |  |  |  |
| 3b. Coni   | nectivity. Select all that apply and sum score  |      |  |  |  |
| 1pt  | 100 year floodplain. "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.   |      |  |  |  |
| 1pt  | Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. | 1    |  |  |  |
| 1pt  | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.  |      |  |  |  |
| 1pt  | Part of riparian corridor.  |      |  |  |  |
| <b>3c. Maximum water depth.</b> Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland when i depth is greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 N will be useful in answering this question.  |   |      |  |  |  |
| 3 pts  | >0.7m (27.6in)  |      |  |  |  |
| 2pts   | 0.4 to 0.7m (15.7 to 27.6in)  |      |  |  |  |
| 1pt  | <0.4m (<15.7in)   | 1    |  |  |  |
|  | <b>Ition of inundation/saturation.</b> Select one or double check and average the scores if duration is uncertain. The use of nual secondary indicators is necessary and expected in order to properly answer this question.  | ACOE |  |  |  |
| 4pts   | Semi-permanently to permanently inundated or saturated  |      |  |  |  |
| 3pts   | Regularly inundated or saturated  |      |  |  |  |
| 2pts   | Seasonally inundated  |      |  |  |  |
| 1pt  | Seasonally saturated in the upper 30cm (12in) of soil   | 1    |  |  |  |

SR Ripley II

3d Avg = 1.00

**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

| Check all th | at are observed | present in or | near the wetland. |
|--------------|-----------------|---------------|-------------------|
|              |                 |               |                   |

| X | X ditch(es), in or near the wetland point source discharges to the (no |  | point source discharges to the (non-stormwater)   |
|---|--|--|---|
|   | tile(s), in or near the wetland  |  | filling/grading activities in or near the wetland |
|   | dike(s), in or near the wetland  | road beds/RR beds in or near the wetland   |   |
|   | weir(s), in or near the wetland  |  | dredging activities in or near the wetland        |
|   | stormwater inputs (addition of water)                                  | X other (specify) adjacent to agricultural |   |

| to have caused more than trivial alterations to the wetland's natural hydrologic regime.  Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the  Assign a score of 12 since there are no or no apparent modifications.  Choose "recovered" an assign a score of 9.5 | Have any of the disturbances identified above caused or appear        | <u>YES</u>                                    | <u>NO</u>          | NOT SURE                                      |
|--|---|---|--------------------|---|
| distarbanco,   | to have caused more than trivial alterations to the wetland's natural | an intermediate score, depending on degree of | there are no or no | Choose "recovered" and assign a score of 9.5. |

| Select | one or double check adjoining numbers and average the score.  | score |
|--------|---|-------|
| 12pts  | NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator.   |       |
| 7pts   | RECOVERED. The wetland appears to have recovered from past modifications.   |       |
| 3pts   | RECOVERING. The wetland appears to be in the process of recovering from past modifications.   | 5     |
| 1pt    | RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the wetland has not recovered from past modifications, and/or the modifications are ongoing. |       |

3e Avg= **5.00** 

SR Ripley II

Metric 3 Total 10.00

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

| 4b. Habitat development. Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.  7pts EXCELLENT. Wetland appears to represent the best of its type or class.  6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  4  3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.   |  |   |   |                            |        |                                   |                 |     |   |
|--|--|---|---|----------------------------|--------|-----------------------------------|-----------------|-----|---|
| disturbances caused or appear to have caused more than trivial alterations to the wetland's natural soils assign a score 1, 2 or 3, or an intermediate score, depending on degree of recovery from the disturbance.  Select one or double check adjoining numbers and average the score.  4pts NONE OR NONE APPARENT. There are no disturbances or no disturbances apparent to the evaluator.  3pts RECOVERED. The wetland appears to have recovered from past disturbances.  2pts RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances are ongoing.  4b. Habitat development. Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.  7pts EXCELLENT. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  4b Avg.  | check and average. This question evaluates physical disturbances to the soil and surface substrates of the wetland. Note also that the labels on the scoring categories are intended to be descriptive but not controlling. In some instances, it may be more appropriate to consider the scoring categories as fixed locations on a disturbance continuum, from very high to very low or no disturbance.  apply): |   |   |                            |        |                                   |                 |     |   |
| appear to have caused more than trivial alterations to the wetland's natural soils  Assign a score 1, 2 or 3, or the wetland's natural soils  Assign a score of 4 since there are no or no apparent modifications.  Select one or double check adjoining numbers and average the score.  4pts  NONE OR NONE APPARENT. There are no disturbances or no disturbances apparent to the evaluator.  3pts  RECOVERED. The wetland appears to have recovered from past disturbances.  2pts  RECOVERING. The wetland appears to be in the process of recovering from past disturbances.  2pts  RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances are ongoing.  4b. Habitat development. Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.  7pts  EXCELLENT. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  4pts  MODERATELY GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts  POOR TO FAIR. Wetland appears to be a pood example of its type or class but because of past or present disturbances, successional state, etc. is not good.  4b Available appears to past a good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  4b Available appears to pea a good example of its type or class but because of past or present disturbances, successional state, etc. is not good. |  |   |   | YES                        |        | <u>NO</u>                         | NOT SURE        |     | _ |
| 4pts NONE OR NONE APPARENT. There are no disturbances or no disturbances apparent to the evaluator.  3pts RECOVERED. The wetland appears to have recovered from past disturbances.  2pts RECOVERING. The wetland appears to be in the process of recovering from past disturbances.  2.5  1pt RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances, and/or the disturbances are ongoing.  4b. Habitat development. Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.  7pts EXCELLENT. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.  4b Avg  |  | appea<br>than t   | ear to have caused more trivial alterations to the and's natural soils  Assign a score 1, 2 or 3, or an intermediate score, depending on degree of recovery from the  Assign a score of 4 since there are no or no apparent modifications.  Choose "recovered assign a score of assign assign a score of assign assign a score of assign |                            |        |                                   |                 |     | _ |
| evaluator.  3pts RECOVERED. The wetland appears to have recovered from past disturbances.  2pts RECOVERING. The wetland appears to be in the process of recovering from past disturbances.  2,5  1pt RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances, and/or the disturbances are ongoing.  4a Av 2,50  4b. Habitat development. Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.  7pts EXCELLENT. Wetland appears to be a very good example of its type or class.  6pts VERY GOOD. Wetland appears to be a good example of its type or class but is lacking in characteristics which would make it excellent.  5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  4 pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears not to be a good example of its type or class because of past or present disturbances, successional state, etc. is not good.  | s  | elect o   | ne or double check adjo   | ining numbers and aver     | age    | the score.                        |                 |     |   |
| 2.5  1pt RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances, and/or the disturbances are ongoing.  4b. Habitat development. Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.  7pts EXCELLENT. Wetland appears to represent the best of its type or class.  6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  4 3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a good example of its type or class because of past or present disturbances successional state, etc. is not good.   |  |   |   |                            |        |                                   |                 |     |   |
| 1pt RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances, and/or the disturbances are ongoing.  4b. Habitat development. Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.  7pts EXCELLENT. Wetland appears to represent the best of its type or class.  6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  4  3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a good example of its type or class.  | 3  | 3pts RECOVERED. The wetland appears to have recovered from past disturbances. |   |                            |        |                                   |                 |     |   |
| 4b. Habitat development. Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.  7pts EXCELLENT. Wetland appears to represent the best of its type or class.  6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a good example of its type or class because of past or present disturbances, successional state, etc. is not good.  4b Avg disturbances, successional state etc.  | 2  | ots   | RECOVERING. The wet   | tland appears to be in the | proc   | ess of recovering from past distu | ırbances.       | 2.5 |   |
| rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.  7pts EXCELLENT. Wetland appears to represent the best of its type or class.  6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  4  3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.  4b Avg disturbances successional state etc.   | 1  |   |   |                            |        |                                   | 4a Avg.<br>2.50 |     |   |
| 6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  4  3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.  4b Avg disturbances, successional state, etc.  | rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands.<br>This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from  |   |   |                            |        |                                   |                 |     |   |
| characteristics which would make it excellent.  5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  4  3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.  4b Avg disturbances, successional state, etc.   | 7  | 7pts EXCELLENT. Wetland appears to represent the best of its type or class.   |   |                            |        |                                   |                 |     |   |
| disturbances, successional state, or other reasons, is not excellent.  4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  4  3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.  1pt POOR. Wetland appears not to be a good example of its type or class because of past or present disturbances, successional state, etc.   | 6  | ots   |   |                            |        |                                   |                 |     |   |
| 3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.  1pt POOR. Wetland appears not to be a good example of its type or class because of past or present disturbances, successional state, etc.  4b Avg   | 5  | ots   |   |                            |        |                                   |                 |     |   |
| or present disturbances, successional state, etc. is not good.  2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.  1pt POOR. Wetland appears not to be a good example of its type or class because of past or present disturbances, successional state, etc.  4b Avg   | 4  | ots   | MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.   |                            |        |                                   | 4               | _   |   |
| 1pt POOR. Wetland appears <u>not</u> to be a good example of its type or class because of past or present disturbances, successional state, etc. 4b Avg  | 3  |   |   |                            |        |                                   |                 |     |   |
| disturbances successional state etc  | 2  | ots   | POOR TO FAIR. Wetlan  | nd appears to be a poor to | o fair | example of its type or class.     |                 |     |   |
|  | 1  | ot  | disturbances successional state etc   |                            |        |                                   | 4b Avg.=        |     |   |

SR Ripley II W005

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

| Mowing                         |   | Herbaceous layer/aquatic bed removal     |
|--------------------------------|---|--|
| Grazing (cattle, horses, etc.) |   | Sedimentation                            |
| Clearcutting                   |   | Dredging                                 |
| Selective cutting              | Х | Row-crop or orchard farming              |
| Woody debris removal           |   | Nutrient enrichment, e.g. nuisance algae |
| Toxic pollutants               |   | Other (specify):                         |
| Shrub/sapling removal          |   | Other (specify):                         |

| Have any of the disturbances identified above caused or                           | <u>YES</u>  | <u>NO</u>  | NOT SURE                                    |
|---|---|--|---|
| appeared to cause more than trivial alterations to the wetland's natural habitat. | Assign a score 1, 3 or 6,<br>or an intermediate<br>score, depending on<br>degree of recovery from<br>the disturbance. | Assign a score of 9 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 6. |

| Select | one score or double check adjoining numbers and average the score.   | Score |
|--------|--|-------|
| 9pts   | NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.  |       |
| 6pts   | RECOVERED. The wetland appears to have recovered from past alterations.  |       |
| 3pts   | RECOVERING. The wetland appears to be in the process of recovering from past alterations.  | 4.5   |
| 1pt    | RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. |       |

4c Avg. = **4.50** 

Metric 4 Total

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| 5pts - >10m sq sphagnum or other moss or other vernal pools   | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat  |
|---|---|
| Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |
| 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   | 10 pts - Supports species Deemed in Need of Management by TWRA or TN Special Concern by TDEC  |

| Metric 5 Total | 0 |
|----------------|---|
| Metric 5 Total |   |

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  6a. Wetland Vegetation Communities Check each community present both vertically and horizontally within the wetland with an area of at least 0.1 hectares or 1000m² (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.  | Score |
|--|-------|
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            | 0     |
| 2)Emergent Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.   |       |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     | 0     |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". | 2.5   |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   | 0     |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   | 0     |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |
|----------------|---|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |
|---|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |
| 3 | High 4 ha (9.88 acres) or more               |

| 1    | <b>6b.</b> Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |   |
|------|--|---|
| 5pts | HIGH Wetland has a high degree of interspersion  |   |
| 4pts | MODERATELY HIGH Wetland has a moderately high degree of interspersion  |   |
| 3pts | MODERATE Wetland has a moderate degree of interspersion  | 3 |
| 2pts | MODERATELY LOW Wetland has a moderately low degree of interspersion  |   |
| 1pt  | LOW Wetland has a low degree of interspersion.   |   |
| 0pt  | NONE Wetland has no plan view interspersion  |   |

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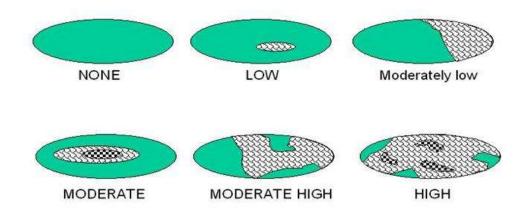


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

| 1  | <b>6c. Coverage of Invasive Plant Species</b> . Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score. |       |
|--|--|-------|
| -5pts  | Extensive >75% areal cover of invasive species   |       |
| -3pts  | Moderate 25-75% areal cover of invasive species  |       |
| -1pts  | Sparse 5-25% areal cover of invasive species   | -2    |
| 0pt  | Nearly absent. <5% areal cover of invasive species   |       |
| 1pt  | Absent   |       |
|  | rotopography. Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. e various microtopograhic habitat features often present in wetlands. | Score |
| Vegetat  | ted hummocks and tussocks  |       |
| Coarse   | woody debris >15cm (6in) in diameter   | 1     |
| Standing dead trees >25cm (10in) diameter at breast height   |  | 1     |
| Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction |  |       |

| Table 6. Cover scale for  | able 6. Cover scale for microtopographic habitat features   |  |  |  |  |  |
|---|---|--|--|--|--|--|
| Microtopographic habitat quality Narrative description                                      |   |  |  |  |  |  |
| 0 Feature is absent or functionally absent from the wetland                                 |   |  |  |  |  |  |
| 1 Feature is present in the wetland in very small amounts or if more common, of low quality |   |  |  |  |  |  |
| 2   | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |  |  |  |  |  |
| 3   | Present in moderate or greater amounts and of the highest quality   |  |  |  |  |  |

Metric 6 Total 5.5

#### **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 1   |
|-----------------------------------|---|-----|
|                                   | Metric 2: Buffers and surrounding land use                  | 4   |
|                                   | Metric 3: Hydrology   | 10  |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 11  |
|                                   | Metric 5: Special Wetland Communities                       | 0   |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 5.5 |
|                                   | TOTAL SCORE   | 32  |

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Rank = Low

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)

W006 9/21/2022

### Quantitative Rating Tennessee Rapid Assessment Method

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN)       | >25 acres (middle TN)     | >10 acres (east TN *)  |   |
|------|---------------------------|---------------------------|------------------------|---|
| 5pts | 25 - <50 acres (west TN)  | 10- 25 acres (middle TN)  | 7-<10 acres (east TN*) |   |
| 4pts | 10 - <25 acres (west TN)  | 7-< 25acres (middle TN)   | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)    | 3< 7 acres (middle TN)    | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)  | 0.5- <3 acres (middle TN) | 0.5-<1 acres (east TN) |   |
| 1pt  | 0.1 - <0.3 acres(west TN) | <0.5 acres (middle TN)    | <0.5 acres (east TN)   | 1 |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2. Metric to English conversion table with visual estimation sizes.    |           |         |      |     |      |         |     |
|--|-----------|---------|------|-----|------|---------|-----|
| acres ft <sup>2</sup> yd <sup>2</sup> ft on yd on ha m <sup>2</sup> m on sid |           |         |      |     |      |         |     |
| 50   | 2,177,983 | 241,998 | 1476 | 492 | 20.2 | 202,000 | 449 |
| 25   | 1,088,992 | 120,999 | 1044 | 348 | 10.1 | 101,000 | 318 |
| 10   | 435,596   | 48,340  | 660  | 220 | 4.1  | 41,000  | 203 |
| 3  | 130,679   | 14,520  | 362  | 121 | 1.2  | 12,000  | 110 |
| 0.3  | 13,067    | 1,452   | 114  | 38  | 0.12 | 1,200   | 35  |
| 0.1  | 4,356     | 484     | 66   | 22  | 0.04 | 400     | 20  |

|                | 4 |
|----------------|---|
|                | 1 |
| Metric 1 Total | I |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| buffer v<br>25m, 1 | erage Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW, evidth on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 10m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses , e.g. active row cropping, paved areas, housing developments, etc. | 00m,       |          |  |  |
|--------------------|---|------------|----------|--|--|
| 7pts               | WIDE. >50m (164ft) or more around perimeter.  |            |          |  |  |
| 4pts               | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.  |            | ]        |  |  |
| 1pt                | NARROW. 10m to <25m (32 to <82ft) around the perimeter.   |            | ]        |  |  |
| 0pts               | Opts VERY NARROW. <10m (<32ft) around perimeter.  |            |          |  |  |
|                    | ensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the indominant land use(s) outside the wetland's buffer zone.  | tensity of | 0.00     |  |  |
| 7pts               | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  |            | ]        |  |  |
| 5pts               | LOW. Old fallow field, shrub land, early successional young forest, etc.  |            | ]        |  |  |
| 3pts               | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.   |            | 1        |  |  |
| 1pt                | HIGH. urban, industrial, row cropping, mining, construction, etc.   | 1          | 2b Avg.= |  |  |
|                    |   | •          | - 1.00   |  |  |

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Metric 2 Total 1.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| wetland  | <b>3a. Sources of Water.</b> Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values.                                     |      |  |  |  |  |  |
|----------|--|------|--|--|--|--|--|
| 5pts     | High pH groundwater (7.5-9.0)  |      |  |  |  |  |  |
| 3pts     | Other groundwater  | 3    |  |  |  |  |  |
| 1pts     | Precipitation  |      |  |  |  |  |  |
| 3pts     | Seasonal surface water   |      |  |  |  |  |  |
| 5pts     | Perennial surface water (lake or stream)   |      |  |  |  |  |  |
| 3b. Con  | nectivity. Select all that apply and sum score   |      |  |  |  |  |  |
| 1pt      | 100 year floodplain. "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.  |      |  |  |  |  |  |
| 1pt      | 1pt Between stream/lake and other human land use. This question asks whether the wetland is located between a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. |      |  |  |  |  |  |
| 1pt      | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.   | 0    |  |  |  |  |  |
| 1pt      | Part of riparian corridor.   | 0    |  |  |  |  |  |
| depth is | <b>timum water depth.</b> Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland whe greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 seful in answering this question.   |      |  |  |  |  |  |
| 3 pts    | >0.7m (27.6in)   |      |  |  |  |  |  |
| 2pts     | 0.4 to 0.7m (15.7 to 27.6in)   |      |  |  |  |  |  |
| 1pt      | <0.4m (<15.7in)  | 1    |  |  |  |  |  |
|          | ation of inundation/saturation. Select one or double check and average the scores if duration is uncertain. The use of anual secondary indicators is necessary and expected in order to properly answer this question.   | ACOE |  |  |  |  |  |
| 4pts     | Semi-permanently to permanently inundated or saturated   |      |  |  |  |  |  |
| 3pts     | 3pts Regularly inundated or saturated  |      |  |  |  |  |  |
| 2pts     | Seasonally inundated   | 3    |  |  |  |  |  |
| 1pt      | Seasonally saturated in the upper 30cm (12in) of soil  |      |  |  |  |  |  |
|          |  |      |  |  |  |  |  |

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3d Avg = 2.50

3e. Modifications to natural hydrologic regime. Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

Check all that are observed present in or near the wetland.

| X | X ditch(es), in or near the wetland                             |   | point source discharges to the (non-stormwater)   |
|---|---|---|---|
|   | tile(s), in or near the wetland dike(s), in or near the wetland |   | filling/grading activities in or near the wetland |
|   |   |   | road beds/RR beds in or near the wetland          |
|   | weir(s), in or near the wetland                                 |   | dredging activities in or near the wetland        |
|   | stormwater inputs (addition of water)                           | Х | other (specify) agricultural field                |

| Have any of the disturbances identified above caused or appear to have caused more than trivial alterations to the wetland's natural hydrologic regime. |   | YES  Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance. | NO Assign a score of 12 since there are no or no apparent modifications. | <u>NOT SUF</u><br>Choose "recove<br>assign a score | red" and |  |
|---|---|--|--|--|----------|--|
| Select one or double check adjoining numbers and average the score.   |   |  |  |  | score    |  |
| 12pts   | 12pts NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator. |  |  |  |          |  |
| 7pts  | RECOVERED. The wetland appears to have recovered from past modifications.                                       |  |  |  |          |  |
| 3pts  | RECOVERING. The wetland appears to be in the process of recovering from past modifications.                     |  |  |  |          |  |

RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the

wetland has not recovered from past modifications, and/or the modifications are ongoing.

3e Avg= 1.00

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Metric 3 Total \_\_\_\_7.50

W006

1pt

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

|   | ,   |  |   |  |                          |      |               |
|---|---|--|---|--|--------------------------|------|---------------|
| di<br>w<br>ca<br>to<br>di   | a. Substrate/Soil Disturbance. neck and average. This question sturbances to the soil and surface etland. Note also that the labels of ategories are intended to be desc pontrolling. In some instances, it may consider the scoring categories sturbance continuum, from very l sturbance. | evaluates physical e substrates of the on the scoring criptive but not nay be more appropriate as fixed locations on a | apr   | amples of substrate/soil disturba<br>ply):<br>filling and grading<br>plowing<br>grazing (hooves)<br>vehicle use (off-road vehicles,<br>sedimentation<br>dredging, and other mechanic | construction vehicles)   |      |               |
| Have any of soil or substrate disturbances caused or appear to have caused more than trivial alterations to the wetland's natural soils  Assign a score 1, 2 or 3 an intermediate score depending on degree of recovery from the disturbance. |   | €,   | NO Assign a score of 4 since there are no or no apparent modifications. | NOT SURE  Choose "recovered" assign a score of 3   |                          |      |               |
| s   | elect one or double check adjo  | ining numbers and aver   | age   | the score.   |                          |      |               |
| 4   | ots NONE OR NONE APPA evaluator.  | RENT. There are no distu   | ırban   | nces or no disturbances apparent   | to the                   |      |               |
| 3   | ots RECOVERED. The wetl   | and appears to have reco   | vere  | d from past disturbances.  |                          |      |               |
|   |   | tland appears to be in the   | proc  | ess of recovering from past distu  | ırbances.                |      |               |
|   | 2pts RECOVERING. The wetland appears to be in the process of recovering from past disturbances.  1pt RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances, and/or the disturbances are ongoing.                      |  |   |  |                          | 1    | 4a Avg        |
| ra<br>T   | b. Habitat development. Select<br>ting of how well-developed the w<br>his question presumes knowledg<br>ference standard examples. If ur  | etland is in comparison to<br>e of the types of wetlands   | othe<br>and   | er ecologically and/or hydrogeom<br>the range in quality typical of the  | orphically similar wetla | nds. |               |
| 7   | ots EXCELLENT. Wetland  | appears to represent the t   | best o  | of its type or class.  |                          |      |               |
| 6   | Opts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.   |  |   |  |                          |      |               |
| 5   | Spts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.   |  |   |  |                          |      |               |
| 4   | 4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  |  |   |  |                          |      |               |
| 3   | 3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  |  |   |  |                          |      |               |
| 2   | ots POOR TO FAIR. Wetla   | nd appears to be a poor to   | o fair  | example of its type or class.  |                          |      |               |
| 1   | ot POOR. Wetland appear disturbances, successio   |  | ole of  | its type or class because of pas   | t or present             | 1    | 4b Avg.       |
| _   |   |  |   |  |                          | -    | <b>-</b> 1.00 |

SR Ripley II W006

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

Check all that are observed present in or near the wetland

Mowing Herbaceous layer/aquatic bed removal

Grazing (cattle, horses, etc.) Sedimentation

Clearcutting Dredging

Selective cutting X Row-crop or orchard farming

Woody debris removal Nutrient enrichment, e.g. nuisance algae

Toxic pollutants Other (specify):

Shrub/sapling removal Other (specify):

| Have any of the disturbances identified above caused or                           | <u>YES</u>  | <u>NO</u>  | NOT SURE                                    |
|---|---|--|---|
| appeared to cause more than trivial alterations to the wetland's natural habitat. | Assign a score 1, 3 or 6,<br>or an intermediate<br>score, depending on<br>degree of recovery from<br>the disturbance. | Assign a score of 9 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 6. |

| Select | Select one score or double check adjoining numbers and average the score.                           |  |  |  |  |
|--------|---|--|--|--|--|
| 9pts   | NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator. |  |  |  |  |
| 6pts   | RECOVERED. The wetland appears to have recovered from past alterations.                             |  |  |  |  |
| 3pts   | RECOVERING. The wetland appears to be in the process of recovering from past alterations.           |  |  |  |  |
| 1pt    | · · · · · · · · · · · · · · · · · · ·   |  |  |  |  |

4c Avg. = **1.00** 

Metric 4 Total

letric 4 Total \_\_

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| 5pts - >10m sq sphagnum or other moss or other vernal pools   | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat  |
|---|---|
| Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |
| 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   | 10 pts - Supports species Deemed in Need of Management by TWRA or TN Special Concern by TDEC  |

| Metric 5 Total   | 0 |
|------------------|---|
| motific of total |   |

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  6a. Wetland Vegetation Communities Check each community present both vertically and horizontally within the wetland with an area of at least 0.1 hectares or 1000m² (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.  | Score |
|--|-------|
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            | 0     |
| <b>2)Emergent</b> Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.  |       |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     | 0     |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". | 0     |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   | 0     |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   | 0     |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |  |  |  |
|----------------|---|--|--|--|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |  |  |  |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |  |  |  |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |  |  |  |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |  |  |  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |  |  |  |
|-----------|---|--|--|--|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |  |  |  |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |  |  |  |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |  |  |  |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |  |
|---|--|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |  |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |  |
| 3 | High 4 ha (9.88 acres) or more               |  |

| <b>6b.</b> Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |   |  |  |
|--|---|--|--|
| 5pts   | HIGH Wetland has a high degree of interspersion                       |  |  |
| 4pts   | MODERATELY HIGH Wetland has a moderately high degree of interspersion |  |  |
| 3pts   | MODERATE Wetland has a moderate degree of interspersion               |  |  |
| 2pts   | MODERATELY LOW Wetland has a moderately low degree of interspersion   |  |  |
| 1pt  | LOW Wetland has a low degree of interspersion.                        |  |  |
| 0pt  | NONE Wetland has no plan view interspersion                           |  |  |

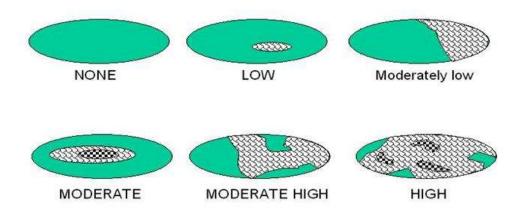


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

| <b>6c. Coverage of Invasive Plant Species</b> . Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score.                       |   |   |  |  |
|--|---|---|--|--|
| -5pts  | -5pts Extensive >75% areal cover of invasive species  |   |  |  |
| -3pts  | -3pts Moderate 25-75% areal cover of invasive species |   |  |  |
| -1pts  | Sparse 5-25% areal cover of invasive species          |   |  |  |
| 0pt  | Nearly absent. <5% areal cover of invasive species    | 0 |  |  |
| 1pt  | Absent  |   |  |  |
| <b>6d. Microtopography</b> . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopograhic habitat features often present in wetlands. |   |   |  |  |
| Vegetated hummocks and tussocks  |   |   |  |  |
| Coarse woody debris >15cm (6in) in diameter  |   |   |  |  |
| Standing dead trees >25cm (10in) diameter at breast height   |   |   |  |  |
| Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction                                     |   |   |  |  |

| Table 6. Cover scale for microtopographic habitat features |   |  |  |  |  |
|--|---|--|--|--|--|
| Microtopographic habitat quality                           | Narrative description   |  |  |  |  |
| 0  | Feature is absent or functionally absent from the wetland   |  |  |  |  |
| 1  | Feature is present in the wetland in very small amounts or if more common, of low quality                 |  |  |  |  |
| 2  | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |  |  |  |  |
| 3  | Present in moderate or greater amounts and of the highest quality   |  |  |  |  |

Metric 6 Total 2

#### **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 1   |
|-----------------------------------|---|-----|
|                                   | Metric 2: Buffers and surrounding land use                  | 1   |
|                                   | Metric 3: Hydrology   | 7.5 |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 3   |
|                                   | Metric 5: Special Wetland Communities                       | 0   |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 2   |
|                                   | TOTAL SCORE   | 15  |

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Rank = Low

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)

## Quantitative Rating Tennessee Rapid Assessment Method

W007 9/21/2022

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN) >25 acres (middle TN) |                           | >10 acres (east TN *)  |   |
|------|---|---------------------------|------------------------|---|
| 5pts | 25 - <50 acres (west TN)                  | 10- 25 acres (middle TN)  | 7-<10 acres (east TN*) |   |
| 4pts | 10 - <25 acres (west TN)                  | 7-< 25acres (middle TN)   | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)                    | 3< 7 acres (middle TN)    | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)                  | 0.5- <3 acres (middle TN) | 0.5-<1 acres (east TN) | 2 |
| 1pt  | 0.1 - <0.3 acres(west TN)                 | <0.5 acres (middle TN)    | <0.5 acres (east TN)   |   |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2 | Table 2. Metric to English conversion table with visual estimation sizes. |                 |               |               |      |         |           |  |
|---------|---|-----------------|---------------|---------------|------|---------|-----------|--|
| acres   | ft²   | yd <sup>2</sup> | ft on<br>side | yd on<br>side | ha   | m²      | m on side |  |
| 50      | 2,177,983   | 241,998         | 1476          | 492           | 20.2 | 202,000 | 449       |  |
| 25      | 1,088,992   | 120,999         | 1044          | 348           | 10.1 | 101,000 | 318       |  |
| 10      | 435,596   | 48,340          | 660           | 220           | 4.1  | 41,000  | 203       |  |
| 3       | 130,679   | 14,520          | 362           | 121           | 1.2  | 12,000  | 110       |  |
| 0.3     | 13,067  | 1,452           | 114           | 38            | 0.12 | 1,200   | 35        |  |
| 0.1     | 4,356   | 484             | 66            | 22            | 0.04 | 400     | 20        |  |

|                | 2 |
|----------------|---|
| Metric 1 Total | _ |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| buffer v<br>25m, 1 | erage Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW, width on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 0m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses , e.g. active row cropping, paved areas, housing developments, etc. | 100m,        |          |
|--------------------|---|--------------|----------|
| 7pts               | WIDE. >50m (164ft) or more around perimeter.  |              |          |
| 4pts               | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.  | 4            |          |
| 1pt                | NARROW. 10m to <25m (32 to <82ft) around the perimeter.   |              |          |
| 0pts               | VERY NARROW. <10m (<32ft) around perimeter.   |              | 2a Avg.= |
|                    | ensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the dominant land use(s) outside the wetland's buffer zone.  | intensity of | 4.00     |
| 7pts               | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  |              |          |
| 5pts               | LOW. Old fallow field, shrub land, early successional young forest, etc.  |              |          |
| 3pts               | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.   | 3            |          |
| 1pt                | HIGH. urban, industrial, row cropping, mining, construction, etc.   |              | 2b Avg.= |
|                    |   |              | - 3.00   |

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Metric 2 Total 7.00

W007

Quantitative Rating
Tennessee Rapid Assessment Method

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| wetlands | rces of Water. Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflect with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water conrery high quality wetlands or can have high functions and values.  |      |  |  |  |  |
|----------|---|------|--|--|--|--|
| 5pts     | High pH groundwater (7.5-9.0)   |      |  |  |  |  |
| 3pts     | Other groundwater   |      |  |  |  |  |
| 1pts     | Precipitation   |      |  |  |  |  |
| 3pts     | Seasonal surface water  |      |  |  |  |  |
| 5pts     | Perennial surface water (lake or stream)  |      |  |  |  |  |
| 3b. Con  | nectivity. Select all that apply and sum score  |      |  |  |  |  |
| 1pt      | 100 year floodplain. "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.   | 1    |  |  |  |  |
| 1pt      | Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. | 0    |  |  |  |  |
| 1pt      | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.  |      |  |  |  |  |
| 1pt      | Part of riparian corridor.  | О    |  |  |  |  |
| depth is | <b>mum water depth.</b> Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland whe greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 seful in answering this question.  |      |  |  |  |  |
| 3 pts    | >0.7m (27.6in)  | 3    |  |  |  |  |
| 2pts     | 0.4 to 0.7m (15.7 to 27.6in)  |      |  |  |  |  |
| 1pt      | <0.4m (<15.7in)   |      |  |  |  |  |
|          | ntion of inundation/saturation. Select one or double check and average the scores if duration is uncertain. The use of nual secondary indicators is necessary and expected in order to properly answer this question.   | ACOE |  |  |  |  |
| 4pts     | Semi-permanently to permanently inundated or saturated  |      |  |  |  |  |
| 3pts     | Regularly inundated or saturated  | 4    |  |  |  |  |
| 2pts     | Seasonally inundated  |      |  |  |  |  |
| 1pt      | Seasonally saturated in the upper 30cm (12in) of soil   |      |  |  |  |  |
|          |   |      |  |  |  |  |

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3d Avg = 4.00

**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

Check all that are observed present in or near the wetland.

| X | ditch(es), in or near the wetland     |  | point source discharges to the (non-stormwater)   |  |  |
|---|---------------------------------------|--|---|--|--|
|   | tile(s), in or near the wetland       |  | filling/grading activities in or near the wetland |  |  |
|   | dike(s), in or near the wetland       | road beds/RR beds in or near the wetland |   |  |  |
|   | weir(s), in or near the wetland       |  | dredging activities in or near the wetland        |  |  |
|   | stormwater inputs (addition of water) | Х  | other (specify) adjacent to agricultural field    |  |  |

|  | ny of the disturbances<br>ed above caused or appear   | <u>YES</u>  | <u>NO</u>   | NOT SURE                                      |  |
|--|---|---|---|---|--|
| to have caused more than trivial alterations to the wetland's natural hydrologic regime. |   | Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance. | Assign a score of 12 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 9.5. |  |
| Select one or double check adjoining numbers and average the score.                      |   |   |   | score   |  |
| 12pts  | NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator. |   |   |   |  |
| 7pts   | RECOVERED. The wetland appears to have recovered from past modifications.                                 |   |   |   |  |

RECOVERING. The wetland appears to be in the process of recovering from past modifications.

RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the

wetland has not recovered from past modifications, and/or the modifications are ongoing.

3e Avg= **5.00** 

5

SR Ripley II

Metric 3 Total 18.00

W007

3pts

1pt

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

|  | ,  |  |             |  |   |          |                 |
|--|--|--|-------------|--|---|----------|-----------------|
| di<br>w<br>ca<br>to<br>di  | a. Substrate/Soil Disturbance. neck and average. This question sturbances to the soil and surfaction and surfaction. Note also that the labels ategories are intended to be descontrolling. In some instances, it much consider the scoring categories sturbance continuum, from very sturbance. | evaluates physical e substrates of the on the scoring criptive but not nay be more appropriate as fixed locations on a | apr         | amples of substrate/soil disturba<br>ply):<br>filling and grading<br>plowing<br>grazing (hooves)<br>vehicle use (off-road vehicles,<br>sedimentation<br>dredging, and other mechanic | construction vehicles)                          |          |                 |
| Have any of soil or substrate disturbances caused or appear to have caused more than trivial alterations to the wetland's natural soils  Assign a score 1, 2 or 3, or an intermediate score, depending on degree of recovery from the disturbance. |  |  | €,          | NO Assign a score of 4 since there are no or no apparent modifications.  | NOT SURE Choose "recovered" assign a score of 3 |          |                 |
| s  | elect one or double check adjo   | ining numbers and aver   | age         | the score.   |   |          |                 |
| 4  | ots NONE OR NONE APPA<br>evaluator.  | RENT. There are no distu   | ırban       | nces or no disturbances apparent   | t to the  |          |                 |
| 3  | ots RECOVERED. The wet   | and appears to have reco   | vere        | d from past disturbances.  |   |          | 7               |
| 2  | ots RECOVERING. The we   | tland appears to be in the   | proc        | ess of recovering from past distu  | ırbances.                                       | 2.5      | 7               |
| 1pt RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has not recovered from past disturbances, and/or the disturbances are ongoing.  |  |  |             |  |   |          | 4a Avg.<br>2.50 |
| ra<br>T  | iting of how well-developed the w  | etland is in comparison to<br>e of the types of wetlands   | othe<br>and | nis question asks the evaluator to<br>er ecologically and/or hydrogeom<br>the range in quality typical of the<br>DERATELY GOOD.  | orphically similar wetla                        | nds.     |                 |
| 7  | ots EXCELLENT. Wetland   | appears to represent the I   | best (      | of its type or class.  |   |          |                 |
| 6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  |  |  |             |  |   |          |                 |
| 5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  |  |  |             |  |   |          |                 |
| 4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.   |  |  |             |  |   |          |                 |
| 3  |  | to be a moderately good successional state, etc. is  |             | nple of its type or class but becar<br>good.   | use of past                                     |          |                 |
| 2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.  |  |  |             |  |   |          |                 |
| 1  | disturbances successional state etc  |  |             |  |   | 4b Avg.= |                 |
|  | 5.00   |  |             |  |   |          |                 |

SR Ripley II W007

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

Check all that are observed present in or near the wetland

Mowing Herbaceous layer/aquatic bed removal

Grazing (cattle, horses, etc.) Sedimentation

Clearcutting Dredging

Other (specify):

Selective cutting X Row-crop or orchard farming

Woody debris removal Nutrient enrichment, e.g. nuisance algae

Toxic pollutants Other (specify):

Shrub/sapling removal

**NOT SURE** Have any of the disturbances YES <u>NO</u> identified above caused or Choose "recovered" and appeared to cause more than Assign a score 1, 3 or 6, Assign a score of 9 since trivial alterations to the or an intermediate there are no or no assign a score of 6. wetland's natural habitat. score, depending on apparent modifications. degree of recovery from the disturbance.

| Select | Select one score or double check adjoining numbers and average the score.  |  |  |
|--------|--|--|--|
| 9pts   | NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.  |  |  |
| 6pts   | ts RECOVERED. The wetland appears to have recovered from past alterations.   |  |  |
| 3pts   | s RECOVERING. The wetland appears to be in the process of recovering from past alterations.  |  |  |
| 1pt    | RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. |  |  |

4c Avg. = **4.50** 

Metric 4 Total

| Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section. |   |   |   |  |  |
|---|---|---|---|--|--|
| 5pts - >10m sq sphagnum or other moss or other vernal pools   |   | 5 | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat  |  |  |
|   | Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) |   | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |  |  |

| (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) |  | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |  |
|---|--|---|--|
| 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   |  | 10 pts - Supports species Deemed in Need of<br>Management by TWRA or TN Special Concern by TDEC   |  |

Metric 5 Total 5

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  6a. Wetland Vegetation Communities Check each community present both vertically and horizontally within the wetland with an area of at least 0.1 hectares or 1000m <sup>2</sup> (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.                                    | Score |
|--|-------|
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            | 0     |
| <b>2)Emergent</b> Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.  |       |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     | 0     |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". | 4     |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   | 0     |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   | 0     |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |  |
|----------------|---|--|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |  |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |  |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |  |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |  |
|---|--|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |  |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |  |
| 3 | High 4 ha (9.88 acres) or more               |  |

| <b>6b.</b> Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |   |  |  |
|--|---|--|--|
| 5pts   | HIGH Wetland has a high degree of interspersion                       |  |  |
| 4pts   | MODERATELY HIGH Wetland has a moderately high degree of interspersion |  |  |
| 3pts   | MODERATE Wetland has a moderate degree of interspersion               |  |  |
| 2pts   | MODERATELY LOW Wetland has a moderately low degree of interspersion   |  |  |
| 1pt  | LOW Wetland has a low degree of interspersion.                        |  |  |
| 0pt  | NONE Wetland has no plan view interspersion                           |  |  |

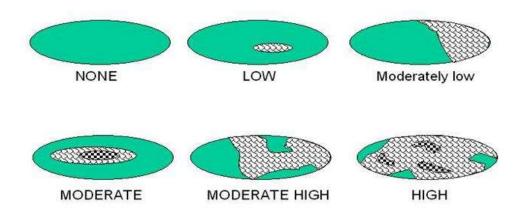


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

|  | <b>6c. Coverage of Invasive Plant Species.</b> Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score.                         |    |  |
|--|---|----|--|
| -5pts  | Extensive >75% areal cover of invasive species  |    |  |
| -3pts  | Moderate 25-75% areal cover of invasive species   |    |  |
| -1pts  | Sparse 5-25% areal cover of invasive species  | -1 |  |
| 0pt  | Nearly absent. <5% areal cover of invasive species  |    |  |
| 1pt  | Absent  |    |  |
|  | <b>6d. Microtopography</b> . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopographic habitat features often present in wetlands. |    |  |
| Vegetat  | ted hummocks and tussocks   |    |  |
| Coarse woody debris >15cm (6in) in diameter  |   | 3  |  |
| Standing dead trees >25cm (10in) diameter at breast height   |   | 3  |  |
| Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction |   | .5 |  |

| Table 6. Cover scale for microtopographic habitat features |   |  |  |  |
|--|---|--|--|--|
| Microtopographic habitat quality                           | Narrative description   |  |  |  |
| 0  | Feature is absent or functionally absent from the wetland   |  |  |  |
| 1  | Feature is present in the wetland in very small amounts or if more common, of low quality                 |  |  |  |
| 2  | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |  |  |  |
| 3  | Present in moderate or greater amounts and of the highest quality   |  |  |  |

Metric 6 Total 13.5

### **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 2    |
|-----------------------------------|---|------|
|                                   | Metric 2: Buffers and surrounding land use                  | 7    |
|                                   | Metric 3: Hydrology   | 18   |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 12   |
|                                   | Metric 5: Special Wetland Communities                       | 5    |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 13.5 |
|                                   | TOTAL SCORE   | 58   |

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Rank = Moderate

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)

# Quantitative Rating Tennessee Rapid Assessment Method

W008 9/21/2022

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN) >25 acres (middle TN)             |                        | >10 acres (east TN *)  |   |
|------|---|------------------------|------------------------|---|
| 5pts | ots 25 - <50 acres (west TN) 10- 25 acres (middle TN) |                        | 7-<10 acres (east TN*) |   |
| 4pts | s 10 - <25 acres (west TN) 7-< 25acres (middle TN)    |                        | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)                                | 3< 7 acres (middle TN) | 1-<3 acres (east TN)   | 3 |
| 2pts | 0.3 - <3 acres (west TN)                              |                        | 0.5-<1 acres (east TN) |   |
| 1pt  | 0.1 - <0.3 acres(west TN)                             | <0.5 acres (middle TN) | <0.5 acres (east TN)   |   |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2 | Table 2. Metric to English conversion table with visual estimation sizes. |                 |               |               |      |         |           |
|---------|---|-----------------|---------------|---------------|------|---------|-----------|
| acres   | ft²   | yd <sup>2</sup> | ft on<br>side | yd on<br>side | ha   | m²      | m on side |
| 50      | 2,177,983   | 241,998         | 1476          | 492           | 20.2 | 202,000 | 449       |
| 25      | 1,088,992   | 120,999         | 1044          | 348           | 10.1 | 101,000 | 318       |
| 10      | 435,596   | 48,340          | 660           | 220           | 4.1  | 41,000  | 203       |
| 3       | 130,679   | 14,520          | 362           | 121           | 1.2  | 12,000  | 110       |
| 0.3     | 13,067  | 1,452           | 114           | 38            | 0.12 | 1,200   | 35        |
| 0.1     | 4,356   | 484             | 66            | 22            | 0.04 | 400     | 20        |

|                | Q |
|----------------|---|
| Metric 1 Total | 5 |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| <b>2a. Average Buffer Width (ABW).</b> Calculate the average buffer width and select only one score. To calculate ABW, estimate buffer width on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 100m, 25m, 10m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses are not buffers, e.g. active row cropping, paved areas, housing developments, etc. |  |             |          |  |  |
|---|--|-------------|----------|--|--|
| 7pts WIDE. >50m (164ft) or more around perimeter.   |  |             |          |  |  |
| 4pts  | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.   |             |          |  |  |
| 1pt   | NARROW. 10m to <25m (32 to <82ft) around the perimeter.  | 1           |          |  |  |
| 0pts  | VERY NARROW. <10m (<32ft) around perimeter.  |             | 2a Avg.= |  |  |
|   | ensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the indominant land use(s) outside the wetland's buffer zone. | ntensity of | 1.00     |  |  |
| 7pts  | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.   |             |          |  |  |
| 5pts  | LOW. Old fallow field, shrub land, early successional young forest, etc.   |             | 1        |  |  |
| 3pts  | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.  |             |          |  |  |
| 1pt   | HIGH. urban, industrial, row cropping, mining, construction, etc.  | 1           | 2b Avg.= |  |  |

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Metric 2 Total 2.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| wetlands  | <b>3a. Sources of Water.</b> Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values.  |   |  |  |  |  |  |  |
|---|---|---|--|--|--|--|--|--|
| 5pts  | High pH groundwater (7.5-9.0)   | 5 |  |  |  |  |  |  |
| 3pts  | Other groundwater   |   |  |  |  |  |  |  |
| 1pts  | Precipitation   |   |  |  |  |  |  |  |
| 3pts  | Seasonal surface water  |   |  |  |  |  |  |  |
| 5pts  | Perennial surface water (lake or stream)  |   |  |  |  |  |  |  |
| 3b. Con   | nectivity. Select all that apply and sum score  |   |  |  |  |  |  |  |
| 1pt 100 year floodplain. "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used. |   |   |  |  |  |  |  |  |
| 1pt   | 1pt Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. |   |  |  |  |  |  |  |
| 1pt   | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a pother nearby wetland or upland habitat areas.   | 0 |  |  |  |  |  |  |
| 1pt   | Part of riparian corridor.  | 0 |  |  |  |  |  |  |
| depth is  | <b>imum water depth.</b> Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland whe greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 seful in answering this question.   |   |  |  |  |  |  |  |
| 3 pts   | >0.7m (27.6in)  | 3 |  |  |  |  |  |  |
| 2pts  | 0.4 to 0.7m (15.7 to 27.6in)  |   |  |  |  |  |  |  |
| 1pt   | <0.4m (<15.7in)   |   |  |  |  |  |  |  |
| <b>3d. Duration of inundation/saturation.</b> Select one or double check and average the scores if duration is uncertain. The use of ACOE 1987 Manual secondary indicators is necessary and expected in order to properly answer this question.   |   |   |  |  |  |  |  |  |
| 4pts  | Semi-permanently to permanently inundated or saturated  |   |  |  |  |  |  |  |
| 3pts Regularly inundated or saturated 4   |   |   |  |  |  |  |  |  |
| 2pts  | Seasonally inundated  |   |  |  |  |  |  |  |
| 1pt   | Seasonally saturated in the upper 30cm (12in) of soil   |   |  |  |  |  |  |  |

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3d Avg = 4.00

**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

Check all that are observed present in or near the wetland.

| X | ditch(es), in or near the wetland   |   | point source discharges to the (non-stormwater)   |
|---|---|---|---|
|   | tile(s), in or near the wetland  dike(s), in or near the wetland  weir(s), in or near the wetland |   | filling/grading activities in or near the wetland |
|   |   |   | road beds/RR beds in or near the wetland          |
|   |   |   | dredging activities in or near the wetland        |
|   | stormwater inputs (addition of water)   | Х | other (specify) agricultural field                |

<u>NO</u>

**YES** 

wetland has not recovered from past modifications, and/or the modifications are ongoing.

| identified above caused or appear<br>to have caused more than trivial<br>alterations to the wetland's natural<br>hydrologic regime. |   | Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance. | Assign a score of 12 since there are no or no apparent modifications. | Choose "recove<br>assign a score |       |  |
|---|---|---|---|----------------------------------|-------|--|
| Select one or double check adjoining numbers and average the score.   |   |   |   |                                  | score |  |
| 12pts   | pts NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator. |   |   |                                  |       |  |
| 7pts  | RECOVERED. The wetland appears to have recovered from past modifications.                                     |   |   |                                  |       |  |
| 3pts RECOVERING. The wetland appears to be in the process of recovering from past modifications.                                    |   |   |   |                                  |       |  |
| 1pt   | RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the                          |   |   |                                  |       |  |

3e Avg= **1.00** 

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Have any of the disturbances

Metric 3 Total 14.00

**NOT SURE** 

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

| 4a. Substrate/Soil Disturbance. Select one or double check and average. This question evaluates physical disturbances to the soil and surface substrates of the wetland. Note also that the labels on the scoring categories are intended to be descriptive but not controlling. In some instances, it may be more appropriate to consider the scoring categories as fixed locations on a disturbance continuum, from very high to very low or no disturbance.             |  |   | x x    | mples of substrate/soil disturba<br>y):<br>_filling and grading<br>_plowing<br>_grazing (hooves)<br>_vehicle use (off-road vehicles,<br>_sedimentation<br>_dredging, and other mechanic | construction vehicles)                    |          |         |
|--|--|---|--------|---|---|----------|---------|
|  | Have any of soil or substrate disturbances caused or   | YES   |        | <u>NO</u>   | NOT SURE                                  |          |         |
|  | than trivial alterations to the wetland's natural soils an interest dependence of the dependence of th | a score 1, 2 or 3, o<br>ermediate score,<br>ding on degree of<br>overy from the<br>listurbance. |        | Assign a score of 4 since there are no or no apparent modifications.  | Choose "recovered"<br>assign a score of 3 |          |         |
| s  | elect one or double check adjoining nun  | nbers and averag  | ge th  | ne score.   |   |          |         |
| 4  | ots NONE OR NONE APPARENT. The evaluator.  | ere are no disturb  | banc   | es or no disturbances apparent  | to the                                    |          |         |
| 3  | ots RECOVERED. The wetland appear  | ers to have recove  | ered   | from past disturbances.   |   |          |         |
| 2  | ots RECOVERING. The wetland appe   | ars to be in the pr   | roce   | ss of recovering from past distu  | rbances.                                  |          |         |
| 1  | ot RECENT OR NO RECOVERY. The not recovered from past disturband   |   |        |   | etland has                                | 1        | 4a Avg. |
| <b>4b. Habitat development.</b> Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD. |  |   |        |   |   |          |         |
| 71   | ots EXCELLENT. Wetland appears to  | represent the bes   | est of | f its type or class.  |   |          | _       |
| 6pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  |  |   |        |   |   |          |         |
| 5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.  |  |   |        |   |   |          |         |
| 4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.   |  |   |        |   | _   |          |         |
| 3  | 3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.   |   |        |   |   |          |         |
| 2  | ots POOR TO FAIR. Wetland appear   | s to be a poor to fa  | fair e | example of its type or class.   |   |          |         |
| 1  | disturbances successional state etc  |   |        |   |   | 4b Avg = |         |

SR Ripley II W008

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

| Check all that are observed present in or near the wetland |   |  |  |  |  |
|--|---|--|--|--|--|
| Mowing   |   | Herbaceous layer/aquatic bed removal     |  |  |  |
| Grazing (cattle, horses, etc.)                             |   | Sedimentation                            |  |  |  |
| Clearcutting   |   | Dredging                                 |  |  |  |
| Selective cutting  | Х | Row-crop or orchard farming              |  |  |  |
| Woody debris removal                                       |   | Nutrient enrichment, e.g. nuisance algae |  |  |  |
| Toxic pollutants   |   | Other (specify):                         |  |  |  |
|  |   |  |  |  |  |

| Have any of the disturbances identified above caused or                           | <u>YES</u>  | <u>NO</u>  | NOT SURE                                    |
|---|---|--|---|
| appeared to cause more than trivial alterations to the wetland's natural habitat. | Assign a score 1, 3 or 6, or an intermediate score, depending on degree of recovery from the disturbance. | Assign a score of 9 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 6. |

Other (specify):

Shrub/sapling removal

| Select one score or double check adjoining numbers and average the score. |  |   |  |  |
|---|--|---|--|--|
| 9pts  | 9pts NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.   |   |  |  |
| 6pts  | Spts RECOVERED. The wetland appears to have recovered from past alterations.   |   |  |  |
| 3pts  | 3pts RECOVERING. The wetland appears to be in the process of recovering from past alterations.   |   |  |  |
| 1pt   | RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. | 1 |  |  |

4c Avg. = **1.00** 

Metric 4 Total

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| 3 9   |   |   |  |
|---|---|---|--|
| 5pts - >10m sq sphagnum or other moss or other vernal pools   | 5 | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat  |  |
| Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) |   | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |  |
| 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   |   | 10 pts - Supports species Deemed in Need of Management by TWRA or TN Special Concern by TDEC  |  |

Metric 5 Total  $\underline{5}$ 

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  |       |
|--|-------|
| <b>6a. Wetland Vegetation Communities</b> Check each community present <u>both vertically and horizontally</u> within the wetland with an area of at least 0.1 hectares or 1000m <sup>2</sup> (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.   | Score |
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            | 0     |
| 2)Emergent Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.   |       |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     | 0     |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". | 4     |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   | 0     |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   | 0     |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |
|----------------|---|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |
|---|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |
| 3 | High 4 ha (9.88 acres) or more               |

| <b>6b.</b> Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |   | Score |
|--|---|-------|
| 5pts   | HIGH Wetland has a high degree of interspersion                       |       |
| 4pts   | MODERATELY HIGH Wetland has a moderately high degree of interspersion |       |
| 3pts   | MODERATE Wetland has a moderate degree of interspersion               | 3     |
| 2pts   | MODERATELY LOW Wetland has a moderately low degree of interspersion   |       |
| 1pt  | LOW Wetland has a low degree of interspersion.                        |       |
| 0pt  | NONE Wetland has no plan view interspersion                           |       |

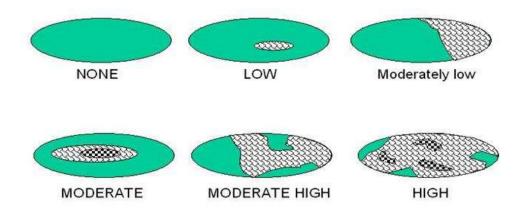


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

| <b>6c. Coverage of Invasive Plant Species</b> . Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score.                       |  |    |  |
|--|--|----|--|
| -5pts  | Extensive >75% areal cover of invasive species     |    |  |
| -3pts  | Moderate 25-75% areal cover of invasive species    |    |  |
| -1pts  | Sparse 5-25% areal cover of invasive species       | -1 |  |
| 0pt  | Nearly absent. <5% areal cover of invasive species |    |  |
| 1pt  | Absent   |    |  |
| <b>6d. Microtopography</b> . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopograhic habitat features often present in wetlands. |  |    |  |
| Vegetated hummocks and tussocks  |  |    |  |
| Coarse woody debris >15cm (6in) in diameter  |  |    |  |
| Standing dead trees >25cm (10in) diameter at breast height   |  |    |  |
| Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction                                     |  |    |  |

| Table 6. Cover scale for microtopographic habitat features |   |  |  |  |
|--|---|--|--|--|
| Microtopographic habitat quality                           | Narrative description   |  |  |  |
| 0  | Feature is absent or functionally absent from the wetland   |  |  |  |
| 1  | Feature is present in the wetland in very small amounts or if more common, of low quality                 |  |  |  |
| 2  | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |  |  |  |
| 3  | Present in moderate or greater amounts and of the highest quality   |  |  |  |

Metric 6 Total 8

### **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 3  |
|-----------------------------------|---|----|
| Non-HGM<br>Quantitative<br>Rating | Metric 2: Buffers and surrounding land use                  | 2  |
|                                   | Metric 3: Hydrology   | 14 |
|                                   | Metric 4: Habitat   | 5  |
|                                   | Metric 5: Special Wetland Communities                       | 5  |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 8  |
|                                   | TOTAL SCORE   | 37 |

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Rank = Low

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)

## Quantitative Rating Tennessee Rapid Assessment Method

W009 9/21/2022

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN)       | >25 acres (middle TN)     | >10 acres (east TN *)  |   |
|------|---------------------------|---------------------------|------------------------|---|
| 5pts | 25 - <50 acres (west TN)  | 10- 25 acres (middle TN)  | 7-<10 acres (east TN*) |   |
| 4pts | 10 - <25 acres (west TN)  | 7-< 25acres (middle TN)   | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)    | 3< 7 acres (middle TN)    | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)  | 0.5- <3 acres (middle TN) | 0.5-<1 acres (east TN) | 2 |
| 1pt  | 0.1 - <0.3 acres(west TN) | <0.5 acres (middle TN)    | <0.5 acres (east TN)   |   |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2 | Table 2. Metric to English conversion table with visual estimation sizes. |                 |               |               |      |         |           |
|---------|---|-----------------|---------------|---------------|------|---------|-----------|
| acres   | ft²   | yd <sup>2</sup> | ft on<br>side | yd on<br>side | ha   | m²      | m on side |
| 50      | 2,177,983   | 241,998         | 1476          | 492           | 20.2 | 202,000 | 449       |
| 25      | 1,088,992   | 120,999         | 1044          | 348           | 10.1 | 101,000 | 318       |
| 10      | 435,596   | 48,340          | 660           | 220           | 4.1  | 41,000  | 203       |
| 3       | 130,679   | 14,520          | 362           | 121           | 1.2  | 12,000  | 110       |
| 0.3     | 13,067  | 1,452           | 114           | 38            | 0.12 | 1,200   | 35        |
| 0.1     | 4,356   | 484             | 66            | 22            | 0.04 | 400     | 20        |

|                | 0 |
|----------------|---|
| Metric 1 Total | 2 |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| buffer v<br>25m, 1 | erage Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW, width on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 0m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses , e.g. active row cropping, paved areas, housing developments, etc. | 100m,        |          |
|--------------------|---|--------------|----------|
| 7pts               | WIDE. >50m (164ft) or more around perimeter.  |              |          |
| 4pts               | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.  | 4            |          |
| 1pt                | NARROW. 10m to <25m (32 to <82ft) around the perimeter.   |              |          |
| 0pts               | VERY NARROW. <10m (<32ft) around perimeter.   |              | 2a Avg.= |
|                    | ensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the dominant land use(s) outside the wetland's buffer zone.  | intensity of | 4.00     |
| 7pts               | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  |              |          |
| 5pts               | LOW. Old fallow field, shrub land, early successional young forest, etc.  |              |          |
| 3pts               | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.   | 3            |          |
| 1pt                | HIGH. urban, industrial, row cropping, mining, construction, etc.   |              | 2b Avg.= |
|                    |   |              | -3.00    |

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Metric 2 Total 7.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| wetland  | <b>3a. Sources of Water.</b> Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values.  |      |  |
|----------|---|------|--|
| 5pts     | High pH groundwater (7.5-9.0)   |      |  |
| 3pts     | Other groundwater   |      |  |
| 1pts     | Precipitation   | 1    |  |
| 3pts     | Seasonal surface water  |      |  |
| 5pts     | Perennial surface water (lake or stream)  |      |  |
| 3b. Con  | nectivity. Select all that apply and sum score  |      |  |
| 1pt      | 100 year floodplain. "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.   | 0    |  |
| 1pt      | Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. | 1    |  |
| 1pt      | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.  | 0    |  |
| 1pt      | Part of riparian corridor.  | 0    |  |
| depth is | <b>3c. Maximum water depth.</b> Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland when its water depth is greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 Manual will be useful in answering this question.  |      |  |
| 3 pts    | >0.7m (27.6in)  |      |  |
| 2pts     | 0.4 to 0.7m (15.7 to 27.6in)  |      |  |
| 1pt      | <0.4m (<15.7in)   | 1    |  |
|          | ation of inundation/saturation. Select one or double check and average the scores if duration is uncertain. The use of anual secondary indicators is necessary and expected in order to properly answer this question.  | ACOE |  |
| 4pts     | Semi-permanently to permanently inundated or saturated  |      |  |
| 3pts     | Regularly inundated or saturated  |      |  |
| 2pts     | Seasonally inundated  |      |  |
| 1pt      | Seasonally saturated in the upper 30cm (12in) of soil   | 1    |  |
|          |   |      |  |

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3d Avg = 1.00

**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

Check all that are observed present in or near the wetland.

| X | ditch(es), in or near the wetland     |   | point source discharges to the (non-stormwater)   |
|---|---------------------------------------|---|---|
|   | tile(s), in or near the wetland       | Х | filling/grading activities in or near the wetland |
|   | dike(s), in or near the wetland       |   | road beds/RR beds in or near the wetland          |
|   | weir(s), in or near the wetland       |   | dredging activities in or near the wetland        |
|   | stormwater inputs (addition of water) |   | other (specify) agricultural field                |

| identifie<br>to have<br>alteratio   | ny of the disturbances di above caused or appear caused more than trivial ons to the wetland's natural gic regime. | YES  Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance. | NO Assign a score of 12 since there are no or no apparent modifications. | <u>NOT SUF</u><br>Choose "recove<br>assign a score | ered" and |
|---|--|--|--|--|-----------|
| Select one or double check adjoining numbers and average the score.   |  |  |  |  | score     |
| 12pts NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator. |  |  |  |  |           |
| 7pts  | RECOVERED. The wetlar  | nd appears to have recovered fro   | m past modifications.  |  |           |
| 3pts RECOVERING. The wetland appears to be in the process of recovering from past modifications.                |  |  | 3  |  |           |
| 1pt   |  | ERY. The modifications have occurred from past modifications, and/or t   | •  | or the   |           |

3e Avg= **3.00** 

SR Ripley II

Metric 3 Total 7.00

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

| _                                       |   | To ovariación enlegia caren  | any determine the detail of  |                | of the distance to the weight  |   |      |      |
|---|---|--|--|----------------|--|---|------|------|
| v c c c c c c c c c c c c c c c c c c c | check an<br>listurban<br>vetland,<br>categorie<br>controllin<br>o consid  | strate/Soil Disturbance. d average. This question ices to the soil and surfact Note also that the labels des are intended to be described. In some instances, it mer the scoring categories are continuum, from very lace. | evaluates physical e substrates of the on the scoring triptive but not lay be more appropriate as fixed locations on a | x              | amples of substrate/soil disturbate/soil distu | construction vehicles)                          |      |      |
|   | disturb<br>appea<br>than to   | any of soil or substrate bances caused or ar to have caused more rivial alterations to the adds natural soils  | YES  Assign a score 1, 2 or 3 an intermediate score depending on degree recovery from the disturbance.                 | <del>)</del> , | NO Assign a score of 4 since there are no or no apparent modifications.  | NOT SURE Choose "recovered" assign a score of 3 |      |      |
| S                                       | Select or   | ne or double check adjo  | ining numbers and aver   | age            | the score.   |   |      |      |
| 4                                       | 4pts NONE OR NONE APPARENT. There are no disturbances or no disturbances apparent to the evaluator.   |  |  |                |  |   |      |      |
| 3                                       | 3pts RECOVERED. The wetland appears to have recovered from past disturbances.   |  |  |                |  |   |      |      |
| 2                                       | 2pts RECOVERING. The wetland appears to be in the process of recovering from past disturbances.   |  |  |                |  |   |      |      |
| 1                                       | not recovered from post disturbances, and/or the disturbances are anguing   |  |  |                | 4a Avg.=<br>2.00   |   |      |      |
| r.<br>T                                 | ating of I<br>his ques  | how well-developed the w<br>stion presumes knowledge   | etland is in comparison to   | othe<br>and    | nis question asks the evaluator to<br>er ecologically and/or hydrogeom<br>the range in quality typical of the<br>DERATELY GOOD.  | orphically similar wetla                        | nds. |      |
| 7                                       | 'pts  | EXCELLENT. Wetland   | appears to represent the b   | oest o         | of its type or class.  |   |      |      |
| 6                                       | opts  | vits VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.  |  |                |  |   |      |      |
| 5                                       | 5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent. |  |  |                |  |   |      |      |
| 4                                       | 4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  |  |  |                |  |   |      |      |
| 3                                       | FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.             |  |  |                |  |   |      |      |
| 2                                       | 2pts  | POOR TO FAIR. Wetlan   | nd appears to be a poor to   | fair           | example of its type or class.  |   |      |      |
| 1                                       | disturbances successional state etc   |  |  |                |  | 4b Avg.=  |      |      |
|   |   |  |  |                |  |   |      | 0.00 |

SR Ripley II W009

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

Check all that are observed present in or near the wetland

| Mowing                         |   | Herbaceous layer/aquatic bed removal     |
|--------------------------------|---|--|
| Grazing (cattle, horses, etc.) |   | Sedimentation                            |
| Clearcutting                   |   | Dredging                                 |
| Selective cutting              | Х | Row-crop or orchard farming              |
| Woody debris removal           |   | Nutrient enrichment, e.g. nuisance algae |
| Toxic pollutants               |   | Other (specify):                         |
| Shrub/sapling removal          |   | Other (specify):                         |

| Have any of the disturbances identified above caused or                           | <u>YES</u>  | <u>NO</u>  | NOT SURE                                    |
|---|---|--|---|
| appeared to cause more than trivial alterations to the wetland's natural habitat. | Assign a score 1, 3 or 6,<br>or an intermediate<br>score, depending on<br>degree of recovery from<br>the disturbance. | Assign a score of 9 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 6. |

| Select one score or double check adjoining numbers and average the score. |  |   |
|---|--|---|
| 9pts  | NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.  |   |
| 6pts  | RECOVERED. The wetland appears to have recovered from past alterations.  |   |
| 3pts  | RECOVERING. The wetland appears to be in the process of recovering from past alterations.  | 3 |
| 1pt   | RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. |   |

4c Avg. = 3.00

Metric 4 Total

Metric 5. Special wetland communities.

Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| 5pts - >10m sq sphagnum or other moss or other vernal pools | 2 | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat

| 5pts - >10m sq sphagnum or other moss or other vernal pools   | 2 | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat  |
|---|---|---|
| Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) |   | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |
| 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   |   | 10 pts - Supports species Deemed in Need of<br>Management by TWRA or TN Special Concern by TDEC   |

Metric 5 Total 2

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  6a. Wetland Vegetation Communities Check each community present both vertically and horizontally within the wetland with an area of at least 0.1 hectares or 1000m² (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.  | Score |  |
|--|-------|--|
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            | 0     |  |
| 2)Emergent Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.   | 0     |  |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     |       |  |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". | 1     |  |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   |       |  |
| 6)Open water The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.  |       |  |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |
|----------------|---|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |
|---|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |
| 3 | High 4 ha (9.88 acres) or more               |

| <b>6b.</b> Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |   |  |  |  |  |  |
|--|---|--|--|--|--|--|
| 5pts   | HIGH Wetland has a high degree of interspersion                       |  |  |  |  |  |
| 4pts   | MODERATELY HIGH Wetland has a moderately high degree of interspersion |  |  |  |  |  |
| 3pts   | MODERATE Wetland has a moderate degree of interspersion               |  |  |  |  |  |
| 2pts   | MODERATELY LOW Wetland has a moderately low degree of interspersion   |  |  |  |  |  |
| 1pt  | LOW Wetland has a low degree of interspersion.                        |  |  |  |  |  |
| 0pt  | NONE Wetland has no plan view interspersion                           |  |  |  |  |  |

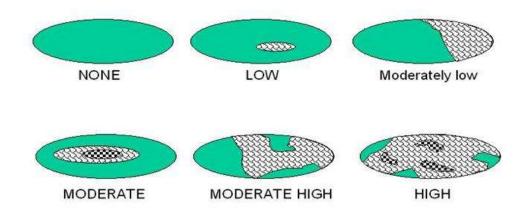


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

| <b>6c. Coverage of Invasive Plant Species.</b> Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score.                        |   |    |  |  |  |  |  |
|--|---|----|--|--|--|--|--|
| -5pts  | -5pts Extensive >75% areal cover of invasive species  |    |  |  |  |  |  |
| -3pts  | Moderate 25-75% areal cover of invasive species   | -3 |  |  |  |  |  |
| -1pts  | -1pts Sparse 5-25% areal cover of invasive species  |    |  |  |  |  |  |
| 0pt  | 0pt Nearly absent. <5% areal cover of invasive species  |    |  |  |  |  |  |
| 1pt  | Absent  |    |  |  |  |  |  |
| <b>6d. Microtopography</b> . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopograhic habitat features often present in wetlands. |   |    |  |  |  |  |  |
| Vegetated hummocks and tussocks  |   |    |  |  |  |  |  |
| Coarse woody debris >15cm (6in) in diameter  |   |    |  |  |  |  |  |
| Standing dead trees >25cm (10in) diameter at breast height   |   |    |  |  |  |  |  |
|  | ian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support ction, or habitat for frog reproduction |    |  |  |  |  |  |

| Table 6. Cover scale for         | able 6. Cover scale for microtopographic habitat features   |  |  |  |  |  |  |
|----------------------------------|---|--|--|--|--|--|--|
| Microtopographic habitat quality | Narrative description   |  |  |  |  |  |  |
| 0                                | Feature is absent or functionally absent from the wetland   |  |  |  |  |  |  |
| 1                                | Feature is present in the wetland in very small amounts or if more common, of low quality                 |  |  |  |  |  |  |
| 2                                | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |  |  |  |  |  |  |
| 3                                | Present in moderate or greater amounts and of the highest quality   |  |  |  |  |  |  |

Metric 6 Total

### **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 2  |
|-----------------------------------|---|----|
|                                   | Metric 2: Buffers and surrounding land use                  | 7  |
|                                   | Metric 3: Hydrology   | 7  |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 8  |
|                                   | Metric 5: Special Wetland Communities                       | 2  |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 1  |
|                                   | TOTAL SCORE   | 27 |

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Rank = Low

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)

#### W010 9/22/2022

### Quantitative Rating Tennessee Rapid Assessment Method

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN)       | 2 acres (west TN) >25 acres (middle TN) >10 acres (east TN *) |                        |   |
|------|---------------------------|---|------------------------|---|
| 5pts | 25 - <50 acres (west TN)  | 5 - <50 acres (west TN) 10- 25 acres (middle TN)              |                        |   |
| 4pts | 10 - <25 acres (west TN)  | 7-< 25acres (middle TN)                                       | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)    | 3< 7 acres (middle TN)  | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)  | 0.5- <3 acres (middle TN)                                     | 0.5-<1 acres (east TN) |   |
| 1pt  | 0.1 - <0.3 acres(west TN) | <0.5 acres (middle TN)  | <0.5 acres (east TN)   | 1 |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2   | . Metric to Eng | glish conversi | on table | with visual est | imation s | izes.   |     |  |
|---|-----------------|----------------|----------|-----------------|-----------|---------|-----|--|
| acres ft <sup>2</sup> yd <sup>2</sup> ft on yd on ha m <sup>2</sup> m |                 |                |          |                 |           |         |     |  |
| 50  | 2,177,983       | 241,998        | 1476     | 492             | 20.2      | 202,000 | 449 |  |
| 25  | 1,088,992       | 120,999        | 1044     | 348             | 10.1      | 101,000 | 318 |  |
| 10  | 435,596         | 48,340         | 660      | 220             | 4.1       | 41,000  | 203 |  |
| 3   | 130,679         | 14,520         | 362      | 121             | 1.2       | 12,000  | 110 |  |
| 0.3   | 13,067          | 1,452          | 114      | 38              | 0.12      | 1,200   | 35  |  |
| 0.1   | 4,356           | 484            | 66       | 22              | 0.04      | 400     | 20  |  |

|                       | 1 |
|-----------------------|---|
| <b>Metric 1 Total</b> | 1 |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| <b>2a. Average Buffer Width (ABW).</b> Calculate the average buffer width and select only one score. To calculate ABW, estimate buffer width on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 100m, 25m, 10m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses are not buffers, e.g. active row cropping, paved areas, housing developments, etc. |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|
| 7pts  | WIDE. >50m (164ft) or more around perimeter.   |  |  |  |  |  |  |
| 4pts  | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.   |  |  |  |  |  |  |
| 1pt   | 1pt NARROW. 10m to <25m (32 to <82ft) around the perimeter.  |  |  |  |  |  |  |
| 0pts  | 0pts VERY NARROW. <10m (<32ft) around perimeter.   |  |  |  |  |  |  |
|   | <b>2b.</b> Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone. |  |  |  |  |  |  |
| 7pts  | 7pts VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  |  |  |  |  |  |  |
| 5pts  | 5pts LOW. Old fallow field, shrub land, early successional young forest, etc.  |  |  |  |  |  |  |
| 3pts  | 3pts MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.   |  |  |  |  |  |  |
| 1pt   | 1pt HIGH. urban, industrial, row cropping, mining, construction, etc.  |  |  |  |  |  |  |

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Metric 2 Total 1.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| <b>3a. Sources of Water.</b> Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values. |  |   |  |  |  |  |
|--|--|---|--|--|--|--|
| 5pts   | High pH groundwater (7.5-9.0)  |   |  |  |  |  |
| 3pts   | Other groundwater  |   |  |  |  |  |
| 1pts   | Precipitation  | 1 |  |  |  |  |
| 3pts   | Seasonal surface water   |   |  |  |  |  |
| 5pts   | Perennial surface water (lake or stream)   |   |  |  |  |  |
| 3b. Con  | nectivity. Select all that apply and sum score   |   |  |  |  |  |
| 1pt 100 year floodplain. "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.    |  |   |  |  |  |  |
| 1pt  | Between stream/lake and other human land use. This question asks whether the wetland is located between a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. |   |  |  |  |  |
| 1pt  | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.   | 0 |  |  |  |  |
| 1pt  | Part of riparian corridor.   | 0 |  |  |  |  |
| depth is   | mum water depth. Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland when greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 seful in answering this question.   |   |  |  |  |  |
| 3 pts  | >0.7m (27.6in)   |   |  |  |  |  |
| 2pts   | 0.4 to 0.7m (15.7 to 27.6in)   |   |  |  |  |  |
| 1pt  | <0.4m (<15.7in)  | 0 |  |  |  |  |
|  | 3d. Duration of inundation/saturation. Select one or double check and average the scores if duration is uncertain. The use of ACOE 1987 Manual secondary indicators is necessary and expected in order to properly answer this question.   |   |  |  |  |  |
| 4pts   | Semi-permanently to permanently inundated or saturated   |   |  |  |  |  |
| 3pts   | Regularly inundated or saturated   |   |  |  |  |  |
| 2pts   | Seasonally inundated   |   |  |  |  |  |
| 1pt  | Seasonally saturated in the upper 30cm (12in) of soil  | 1 |  |  |  |  |

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3d Avg = 1.00

**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

Check all that are observed present in or near the wetland.

| X | ditch(es), in or near the wetland     |   | point source discharges to the (non-stormwater)   |
|---|---------------------------------------|---|---|
|   | tile(s), in or near the wetland       |   | filling/grading activities in or near the wetland |
|   | dike(s), in or near the wetland       |   | road beds/RR beds in or near the wetland          |
|   | weir(s), in or near the wetland       |   | dredging activities in or near the wetland        |
|   | stormwater inputs (addition of water) | Х | other (specify) agricultural field                |

| Have any of the disturbances identified above caused or appear to have caused more than trivial alterations to the wetland's natural hydrologic regime. |   | fied above caused or appear ve caused more than trivial tions to the wetland's natural Assign a score 1, 3 or 7, or an intermediate score, |  | NOT SUF<br>Choose "recove<br>assign a score | red" and |  |  |
|---|---|--|--|---|----------|--|--|
| Select o  | Select one or double check adjoining numbers and average the score.   |  |  |   |          |  |  |
| 12pts   | 12pts NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator. |  |  |   |          |  |  |
| 7pts  | s RECOVERED. The wetland appears to have recovered from past modifications.                                     |  |  |   |          |  |  |
| 3pts  | 3pts RECOVERING. The wetland appears to be in the process of recovering from past modifications.                |  |  |   |          |  |  |

RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the wetland has not recovered from past modifications, and/or the modifications are ongoing.

3e Avg=

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Metric 3 Total 3.00

W010

1pt

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

|   |   |   | *   |  |                                    |           |   |               |  |
|---|---|---|---|--|------------------------------------|-----------|---|---------------|--|
| 4a. Substrate/Soil Disturbance. Select one or double check and average. This question evaluates physical disturbances to the soil and surface substrates of the wetland. Note also that the labels on the scoring categories are intended to be descriptive but not controlling. In some instances, it may be more appropriate to consider the scoring categories as fixed locations on a disturbance continuum, from very high to very low or no disturbance.  Examples of substrate/soil disturbance include (circle all the apply): filling and gradingplowinggrazing (hooves)  vehicle use (off-road vehicles, construction vehicles) sedimentation X dredging, and other mechanical disturbances to the selection of the apply): |   |   |   |  |                                    |           |   |               |  |
| Have any of soil or substrate disturbances caused or appear to have caused more than trivial alterations to the wetland's natural soils  Have any of soil or substrate  YES  Assign a score 1, 2 or 3, an intermediate score, depending on degree or recovery from the disturbance.   |   | €,  | NO Assign a score of 4 since there are no or no apparent modifications. | NOT SURE  Choose "recovered" assign a score of 3 |                                    |           |   |               |  |
| s   | elect o   | ne or double check adjo   | ining numbers and aver  | age  | the score.                         |           |   |               |  |
|   | pts   |   |   |  | nces or no disturbances apparent   | t to the  |   |               |  |
| 3   | pts   | RECOVERED. The wetl   | and appears to have reco  | vere   | d from past disturbances.          |           |   | 7             |  |
| 2   | pts   | RECOVERING. The wet   | land appears to be in the   | proc   | cess of recovering from past distu | ırbances. |   |               |  |
|   | pt  | RECENT OR NO RECO   |   | have   | e occurred recently, and/or the w  |           | 1 | 4a Avg        |  |
| <b>4b. Habitat development.</b> Select only one and assign score. This question asks the evaluator to assign an overall qualitative rating of how well-developed the wetland is in comparison to other ecologically and/or hydrogeomorphically similar wetlands. This question presumes knowledge of the types of wetlands and the range in quality typical of the region or access to data from reference standard examples. If unsure, score as GOOD or MODERATELY GOOD.  |   |   |   |  |                                    |           |   |               |  |
| 7   | pts   | EXCELLENT. Wetland  | appears to represent the I  | best (   | of its type or class.              |           |   |               |  |
| 6   | pts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.                            |   |   |  |                                    |           |   |               |  |
| 5   | 5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent. |   |   |  |                                    |           |   |               |  |
| 4   | 4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  |   |   |  |                                    |           |   |               |  |
| 3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  |   |   |   |  |                                    |           |   |               |  |
| 2   | 2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.   |   |   |  |                                    |           |   |               |  |
| 1   | pt  | pt POOR. Wetland appears <u>not</u> to be a good example of its type or class because of past or present disturbances, successional state, etc. |   |  |                                    |           |   |               |  |
|   |   |   |   |  |                                    |           | - | <b>-</b> 1.00 |  |

SR Ripley II W010

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

| Chack all that are observed | present in or near the wetland        |
|-----------------------------|---------------------------------------|
| CHECK All that are observed | i Dieselii III Oi lieai lile Welialiu |

| Mowing                         |   | Herbaceous layer/aquatic bed removal     |
|--------------------------------|---|--|
| Grazing (cattle, horses, etc.) |   | Sedimentation                            |
| Clearcutting                   |   | Dredging                                 |
| Selective cutting              | Х | Row-crop or orchard farming              |
| Woody debris removal           |   | Nutrient enrichment, e.g. nuisance algae |
| Toxic pollutants               |   | Other (specify):                         |
| Shrub/sapling removal          |   | Other (specify):                         |

| Have any of the disturbances identified above caused or                           | <u>YES</u>  | <u>NO</u>  | NOT SURE                                    |
|---|---|--|---|
| appeared to cause more than trivial alterations to the wetland's natural habitat. | Assign a score 1, 3 or 6,<br>or an intermediate<br>score, depending on<br>degree of recovery from<br>the disturbance. | Assign a score of 9 since there are no or no apparent modifications. | Choose "recovered" and assign a score of 6. |

| Select | Select one score or double check adjoining numbers and average the score.  |   |
|--------|--|---|
| 9pts   | NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.  |   |
| 6pts   | RECOVERED. The wetland appears to have recovered from past alterations.  |   |
| 3pts   | RECOVERING. The wetland appears to be in the process of recovering from past alterations.  | 1 |
| 1pt    | RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. |   |

4c Avg. = **1.00** 

Metric 4 Total

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| 5pts - >10m sq sphagnum or other moss or other vernal pools   | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat  |
|---|---|
| Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |
| 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   | 10 pts - Supports species Deemed in Need of<br>Management by TWRA or TN Special Concern by TDEC   |

| Metric 5 Total  | 0 |
|-----------------|---|
| MICHIC J I OLAI |   |

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  6a. Wetland Vegetation Communities Check each community present both vertically and horizontally within the   | Score |
|--|-------|
| wetland with an area of at least 0.1 hectares or 1000m² (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.   |       |
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            | 0     |
| <b>2)Emergent</b> Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.  | 0     |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     | 0     |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". | 0     |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   | 0     |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   | 0     |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |
|----------------|---|
| 0              | The vegetation community is either  1) absent from wetland or   |
|                | 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |
|---|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |
| 3 | High 4 ha (9.88 acres) or more               |

| 6b. Hor | rizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon Figure 1. | Score |
|---------|---|-------|
| 5pts    | HIGH Wetland has a high degree of interspersion   |       |
| 4pts    | MODERATELY HIGH Wetland has a moderately high degree of interspersion   |       |
| 3pts    | MODERATE Wetland has a moderate degree of interspersion   |       |
| 2pts    | MODERATELY LOW Wetland has a moderately low degree of interspersion   |       |
| 1pt     | LOW Wetland has a low degree of interspersion.  | 1     |
| 0pt     | NONE Wetland has no plan view interspersion   |       |

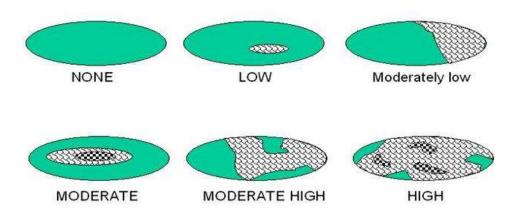


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

|  | <b>6c. Coverage of Invasive Plant Species.</b> Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score. |       |
|--|---|-------|
| -5pts  | Extensive >75% areal cover of invasive species  |       |
| -3pts  | Moderate 25-75% areal cover of invasive species   |       |
| -1pts  | Sparse 5-25% areal cover of invasive species  |       |
| 0pt  | Nearly absent. <5% areal cover of invasive species  | 0     |
| 1pt  | Absent  |       |
| <b>6d. Microtopography</b> . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopograhic habitat features often present in wetlands. |   | Score |
| Vegetated hummocks and tussocks  |   | 0     |
| Coarse woody debris >15cm (6in) in diameter  |   |       |
| Standing dead trees >25cm (10in) diameter at breast height   |   |       |
| Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction                                     |   |       |

| Table 6. Cover scale for microtopographic habitat features |   |  |  |
|--|---|--|--|
| Microtopographic habitat quality                           | Narrative description   |  |  |
| 0  | Feature is absent or functionally absent from the wetland   |  |  |
| 1  | Feature is present in the wetland in very small amounts or if more common, of low quality                 |  |  |
| 2  | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |  |  |
| 3  | Present in moderate or greater amounts and of the highest quality   |  |  |

Metric 6 Total

### **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 1 |
|-----------------------------------|---|---|
|                                   | Metric 2: Buffers and surrounding land use                  | 1 |
|                                   | Metric 3: Hydrology   | 3 |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 3 |
|                                   | Metric 5: Special Wetland Communities                       | 0 |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 1 |
|                                   | TOTAL SCORE   | 9 |

SR Ripley II

Rank = Low

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)

## W011 **Quantitative Rating**

9/22/2022

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

**Tennessee Rapid Assessment Method** 

| 6pts | >50 acres (west TN)       | >25 acres (middle TN)     | >10 acres (east TN *)  |   |
|------|---------------------------|---------------------------|------------------------|---|
| 5pts | 25 - <50 acres (west TN)  | 10- 25 acres (middle TN)  | 7-<10 acres (east TN*) |   |
| 4pts | 10 - <25 acres (west TN)  | 7-< 25acres (middle TN)   | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)    | 3< 7 acres (middle TN)    | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)  | 0.5- <3 acres (middle TN) | 0.5-<1 acres (east TN) |   |
| 1pt  | 0.1 - <0.3 acres(west TN) | <0.5 acres (middle TN)    | <0.5 acres (east TN)   | 1 |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2. Metric to English conversion table with visual estimation sizes. |           |         |      |     |      |         |           |
|---|-----------|---------|------|-----|------|---------|-----------|
| acres ft <sup>2</sup> yd <sup>2</sup> ft on yd on ha m <sup>2</sup>       |           |         |      |     |      |         | m on side |
| 50  | 2,177,983 | 241,998 | 1476 | 492 | 20.2 | 202,000 | 449       |
| 25  | 1,088,992 | 120,999 | 1044 | 348 | 10.1 | 101,000 | 318       |
| 10  | 435,596   | 48,340  | 660  | 220 | 4.1  | 41,000  | 203       |
| 3   | 130,679   | 14,520  | 362  | 121 | 1.2  | 12,000  | 110       |
| 0.3   | 13,067    | 1,452   | 114  | 38  | 0.12 | 1,200   | 35        |
| 0.1   | 4,356     | 484     | 66   | 22  | 0.04 | 400     | 20        |

|                | 1 |
|----------------|---|
| Metric 1 Total | I |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| buffer v<br>25m, 10 | erage Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW, exidth on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 10m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses a e.g. active row cropping, paved areas, housing developments, etc. | 00m,       |          |
|---------------------|---|------------|----------|
| 7pts                | WIDE. >50m (164ft) or more around perimeter.  |            |          |
| 4pts                | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.  |            |          |
| 1pt                 | NARROW. 10m to <25m (32 to <82ft) around the perimeter.   |            |          |
| 0pts                | VERY NARROW. <10m (<32ft) around perimeter.   | 0          | 2a Avg.= |
|                     | ensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the indominant land use(s) outside the wetland's buffer zone.  | tensity of | 0.00     |
| 7pts                | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  |            |          |
| 5pts                | LOW. Old fallow field, shrub land, early successional young forest, etc.  |            |          |
| 3pts                | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.   |            |          |
| 1pt                 | HIGH. urban, industrial, row cropping, mining, construction, etc.   | 1          | 2b Avg.= |

SR Ripley II

Metric 2 Total 1.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| wetland   | rces of Water. Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflect swith certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water conrery high quality wetlands or can have high functions and values.   |   |  |  |  |
|---|---|---|--|--|--|
| 5pts  | High pH groundwater (7.5-9.0)   |   |  |  |  |
| 3pts  | Other groundwater   |   |  |  |  |
| 1pts  | Precipitation   | 1 |  |  |  |
| 3pts  | Seasonal surface water  |   |  |  |  |
| 5pts  | Perennial surface water (lake or stream)  |   |  |  |  |
| 3b. Con   | nectivity. Select all that apply and sum score  |   |  |  |  |
| 1pt 100 year floodplain. "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used. |   |   |  |  |  |
| 1pt   | Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. | 0 |  |  |  |
| 1pt   | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.  | 0 |  |  |  |
| 1pt   | Part of riparian corridor.  | 0 |  |  |  |
| depth is  | <b>imum water depth.</b> Select only one and assign score. The evaluator <i>does not</i> need to actually observe the wetland whe greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 seful in answering this question.   |   |  |  |  |
| 3 pts   | >0.7m (27.6in)  |   |  |  |  |
| 2pts  | 0.4 to 0.7m (15.7 to 27.6in)  |   |  |  |  |
| 1pt   | <0.4m (<15.7in)   | 0 |  |  |  |
|   | 3d. Duration of inundation/saturation. Select one or double check and average the scores if duration is uncertain. The use of ACOE 1987 Manual secondary indicators is necessary and expected in order to properly answer this question.  |   |  |  |  |
| 4pts  | Semi-permanently to permanently inundated or saturated  |   |  |  |  |
| 3pts  | Regularly inundated or saturated  |   |  |  |  |
| 2pts  | Seasonally inundated  |   |  |  |  |
| 1pt Seasonally saturated in the upper 30cm (12in) of soil 1   |   |   |  |  |  |
|   |   |   |  |  |  |

SR Ripley II

3d Avg = 1.00

**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

Check all that are observed present in or near the wetland.

| X | ditch(es), in or near the wetland     |   | point source discharges to the (non-stormwater)   |
|---|---------------------------------------|---|---|
|   | tile(s), in or near the wetland       | Х | filling/grading activities in or near the wetland |
|   | dike(s), in or near the wetland       |   | road beds/RR beds in or near the wetland          |
|   | weir(s), in or near the wetland       |   | dredging activities in or near the wetland        |
|   | stormwater inputs (addition of water) | Χ | other (specify) agricultural field                |

NO

<u>YES</u>

| to have<br>alteratio | d above caused or appear<br>caused more than trivial<br>ons to the wetland's natural<br>gic regime.          | Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance. | Assign a score of 12 since there are no or no apparent modifications. | Choose "recove<br>assign a score |       |  |
|----------------------|--|---|---|----------------------------------|-------|--|
| Select o             | one or double check adjoini  | ng numbers and average the s  | score.  |                                  | score |  |
| 12pts                | ts NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator. |   |   |                                  |       |  |
| 7pts                 | RECOVERED. The wetland appears to have recovered from past modifications.                                    |   |   |                                  |       |  |
| 3pts                 | RECOVERING. The wetland appears to be in the process of recovering from past modifications.                  |   |   |                                  |       |  |

RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the

wetland has not recovered from past modifications, and/or the modifications are ongoing.

3e Avg=

SR Ripley II

Have any of the disturbances

Metric 3 Total 3.00

**NOT SURE** 

W011

1pt

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

| _                      |  | no ovalación oriodia caron   | any dotominio trio dotadi c  |             | of the distansance to the Wellan   |   |      |               |
|------------------------|--|--|--|-------------|--|---|------|---------------|
| d<br>w<br>c<br>c<br>td | heck an<br>listurbar<br>vetland<br>ategorie<br>ontrollin<br>o consid | strate/Soil Disturbance, and average. This question naces to the soil and surface. Note also that the labels of as are intended to be described in some instances, it may be the scoring categories are continuum, from very lace. | evaluates physical e substrates of the on the scoring criptive but not hay be more appropriate as fixed locations on a |             | amples of substrate/soil disturba ply):filling and gradingplowinggrazing (hooves)vehicle use (off-road vehicles, _sedimentation X_dredging, and other mechanic | construction vehicles)                          |      |               |
|                        | distur<br>appea<br>than t  | any of soil or substrate<br>bances caused or<br>ar to have caused more<br>rivial alterations to the<br>nd's natural soils  | YES  Assign a score 1, 2 or 3 an intermediate score depending on degree recovery from the disturbance.                 | €,          | NO Assign a score of 4 since there are no or no apparent modifications.  | NOT SURE Choose "recovered" assign a score of 3 |      |               |
| S                      | elect o  | ne or double check adjo  | ining numbers and aver   | age         | the score.   |   |      |               |
| 4                      | pts  | NONE OR NONE APPA evaluator.   | RENT. There are no distu   | ırban       | nces or no disturbances apparent   | to the  |      |               |
| 3                      | pts  | RECOVERED. The wetl  | and appears to have reco   | vere        | d from past disturbances.  |   |      |               |
| 2                      | pts  | RECOVERING. The wet  | land appears to be in the  | proc        | ess of recovering from past distu  | ırbances.                                       |      |               |
| 1                      | pt   |  | VERY. The disturbances disturbances, and/or the  |             | e occurred recently, and/or the wronger are ongoing.   | etland has                                      | 1    | 4a Avg.       |
| ra<br>T                | ating of<br>his que  | how well-developed the w   | retland is in comparison to<br>e of the types of wetlands  | othe<br>and | nis question asks the evaluator to<br>er ecologically and/or hydrogeom<br>the range in quality typical of the<br>DERATELY GOOD.                                | orphically similar wetla                        | nds. |               |
| 7                      | pts  | EXCELLENT. Wetland   | appears to represent the I   | best (      | of its type or class.  |   |      |               |
| 6                      | pts  | VERY GOOD. Wetland a characteristics which wo  |  | d exa       | ample of its type or class but is la   | cking in  |      |               |
| 5                      | pts  |  | ars to be a good example and state, or other reasons   |             | type or class but because of pas<br>not excellent.   | st or present                                   |      |               |
| 4                      | pts  | MODERATELY GOOD.   | Wetland appears to be a  | fair t      | to good example of its type or cla   | ISS.  |      |               |
| 3                      | pts  |  | to be a moderately good successional state, etc. is  |             | nple of its type or class but becar<br>good.   | use of past                                     |      |               |
| 2                      | pts  | POOR TO FAIR. Wetlan   | nd appears to be a poor to   | o fair      | example of its type or class.  |   |      |               |
| 1                      | pt   | POOR. Wetland appear disturbances, succession  |  | ole of      | f its type or class because of pas   | t or present                                    | 1    | 4b Avg.=      |
|                        |  |  |  |             |  |   |      | <b>-</b> 1.00 |

SR Ripley II W011

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

Check all that are observed present in or near the wetland

Mowing Herbaceous layer/aquatic bed removal

Grazing (cattle, horses, etc.) Sedimentation

Clearcutting Dredging

Selective cutting X Row-crop or orchard farming

Woody debris removal Nutrient enrichment, e.g. nuisance algae

Have any of the disturbances identified above caused or appeared to cause more than Assign a score 1, 3 or 6, Assign a score of 9 since Choose "recovered" and

or an intermediate

score, depending on

degree of recovery from the disturbance.

Other (specify):

there are no or no

apparent modifications.

Toxic pollutants

trivial alterations to the

wetland's natural habitat.

| Select | one score or double check adjoining numbers and average the score.   | Sco | re |
|--------|--|-----|----|
| 9pts   | NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.  |     |    |
| 6pts   | RECOVERED. The wetland appears to have recovered from past alterations.  |     |    |
| 3pts   | RECOVERING. The wetland appears to be in the process of recovering from past alterations.  | T - | 1  |
| 1pt    | RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. |     |    |

4c Avg. =

Metric 4 Total

assign a score of 6.

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| <b>5 5</b>  | 3  |      |
|---|--|------|
| 5pts - >10m sq sphagnum or other moss or other vernal pools   | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat   |      |
| Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) | 5 pts - Wetland contains and is a buffer for a headwastream or wetland contributes significantly to the wat water quality of 303(d) listed stream and/or to surface and/or to ground water | ater |
| 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   | 10 pts - Supports species Deemed in Need of Management by TWRA or TN Special Concern by T  | TDEC |

| Metric 5 Total | 0 |
|----------------|---|
|                |   |

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  6a. Wetland Vegetation Communities Check each community present both vertically and horizontally within the wetland with an area of at least 0.1 hectares or 1000m² (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.  | Score |
|--|-------|
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            | 0     |
| <b>2)Emergent</b> Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.  | 0     |
| 3)Shrub Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.                     | 0     |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". | 0     |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   | 0     |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   | 0     |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |
|----------------|---|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |
|---|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |
| 3 | High 4 ha (9.88 acres) or more               |

| <b>6b.</b> Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |   | Score |
|--|---|-------|
| 5pts   | HIGH Wetland has a high degree of interspersion                       |       |
| 4pts   | MODERATELY HIGH Wetland has a moderately high degree of interspersion |       |
| 3pts   | MODERATE Wetland has a moderate degree of interspersion               |       |
| 2pts   | MODERATELY LOW Wetland has a moderately low degree of interspersion   |       |
| 1pt  | LOW Wetland has a low degree of interspersion.                        | 1     |
| 0pt  | NONE Wetland has no plan view interspersion                           |       |

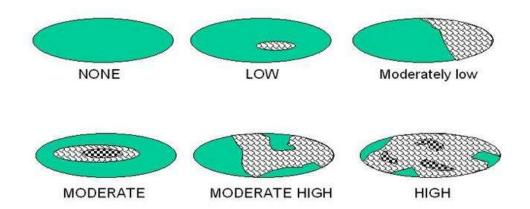


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

| <b>6c. Coverage of Invasive Plant Species.</b> Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score. |   |   |  |
|---|---|---|--|
| -5pts   | Extensive >75% areal cover of invasive species  |   |  |
| -3pts   | Moderate 25-75% areal cover of invasive species   |   |  |
| -1pts   | Sparse 5-25% areal cover of invasive species  |   |  |
| 0pt   | Nearly absent. <5% areal cover of invasive species  | 0 |  |
| 1pt   | Absent  |   |  |
|   | <b>6d. Microtopography</b> . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. Evaluate various microtopographic habitat features often present in wetlands. |   |  |
| Vegetated hummocks and tussocks   |   |   |  |
| Coarse  | Coarse woody debris >15cm (6in) in diameter   |   |  |
| Standing dead trees >25cm (10in) diameter at breast height  |   |   |  |
| Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction              |   |   |  |

|                                     | r microtopographic habitat features   |
|-------------------------------------|---|
| Microtopographic<br>habitat quality | Narrative description   |
| 0                                   | Feature is absent or functionally absent from the wetland   |
| 1                                   | Feature is present in the wetland in very small amounts or if more common, of low quality                 |
| 2                                   | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3                                   | Present in moderate or greater amounts and of the highest quality   |

Metric 6 Total

# **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 1 |
|-----------------------------------|---|---|
|                                   | Metric 2: Buffers and surrounding land use                  | 1 |
|                                   | Metric 3: Hydrology   | 3 |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 3 |
|                                   | Metric 5: Special Wetland Communities                       | 0 |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 1 |
|                                   | TOTAL SCORE   | 9 |

SR Ripley II

Rank = Low

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)

# **Quantitative Rating Tennessee Rapid Assessment Method**

W012 9/22/2022

Metric 1. Wetland area (max 6 pts). Estimate the area of wetland and select the appropriate size class and assign score. Estimated areas should clearly place the wetland within the appropriate class.

| 6pts | >50 acres (west TN)       | >25 acres (middle TN)     | >10 acres (east TN *)  |   |
|------|---------------------------|---------------------------|------------------------|---|
| 5pts | 25 - <50 acres (west TN)  | 10- 25 acres (middle TN)  | 7-<10 acres (east TN*) |   |
| 4pts | 10 - <25 acres (west TN)  | 7-< 25acres (middle TN)   | 3-<7 acres (east TN*)  |   |
| 3pts | 3 - <10 acres(west TN)    | 3< 7 acres (middle TN)    | 1-<3 acres (east TN)   |   |
| 2pts | 0.3 - <3 acres (west TN)  | 0.5- <3 acres (middle TN) | 0.5-<1 acres (east TN) |   |
| 1pt  | 0.1 - <0.3 acres(west TN) | <0.5 acres (middle TN)    | <0.5 acres (east TN)   | 1 |

<sup>\*</sup>More applicable to West Tennessee; use with discretion in Middle Tennessee, Consult TDEC-DWR Natural Resources Unit for use in East Tennessee.

| Table 2 | Table 2. Metric to English conversion table with visual estimation sizes. |                 |               |               |      |         |           |
|---------|---|-----------------|---------------|---------------|------|---------|-----------|
| acres   | ft²   | yd <sup>2</sup> | ft on<br>side | yd on<br>side | ha   | m²      | m on side |
| 50      | 2,177,983   | 241,998         | 1476          | 492           | 20.2 | 202,000 | 449       |
| 25      | 1,088,992   | 120,999         | 1044          | 348           | 10.1 | 101,000 | 318       |
| 10      | 435,596   | 48,340          | 660           | 220           | 4.1  | 41,000  | 203       |
| 3       | 130,679   | 14,520          | 362           | 121           | 1.2  | 12,000  | 110       |
| 0.3     | 13,067  | 1,452           | 114           | 38            | 0.12 | 1,200   | 35        |
| 0.1     | 4,356   | 484             | 66            | 22            | 0.04 | 400     | 20        |

|                | 4 |
|----------------|---|
|                | 1 |
| Metric 1 Total | I |

Metric 2. Upland buffers and intensity of surrounding land uses (Max 14 points). Wetlands without upland "buffers", or that are located where human land use is more intensive, are often, but not always, more degraded and often have lower wildlife habitat resource value.

| buffer v<br>25m, 1 | erage Buffer Width (ABW). Calculate the average buffer width and select only one score. To calculate ABW, evidth on each side (max of 50m) and divide by the number of sides. Example: ABW of a wetland with buffers of 10m and 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land uses , e.g. active row cropping, paved areas, housing developments, etc. | 00m, |          |  |  |
|--------------------|---|------|----------|--|--|
| 7pts               | WIDE. >50m (164ft) or more around perimeter.  |      |          |  |  |
| 4pts               | MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.  |      | ]        |  |  |
| 1pt                | NARROW. 10m to <25m (32 to <82ft) around the perimeter.   |      | ]        |  |  |
| 0pts               | VERY NARROW. <10m (<32ft) around perimeter.   | 0    | 2a Avg.= |  |  |
|                    | <b>2b.</b> Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of the predominant land use(s) outside the wetland's buffer zone.  |      |          |  |  |
| 7pts               | VERY LOW. 2 <sup>nd</sup> growth or older forest, prairie, barren, wildlife area, etc.  |      | ]        |  |  |
| 5pts               | LOW. Old fallow field, shrub land, early successional young forest, etc.  |      | ]        |  |  |
| 3pts               | MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.   |      | 1        |  |  |
| 1pt                | HIGH. urban, industrial, row cropping, mining, construction, etc.   | 1    | 2b Avg.= |  |  |
|                    |   | •    | - 1.00   |  |  |

SR Ripley II

Metric 2 Total 1.00

Metric 3. Hydrology (Max 30 points). This metric evaluates the wetland's water budget, hydroperiod, the hydrologic connectivity of the wetland to other surface waters, and the degree to which the wetland's hydrology has been altered by human activity. A wetland can receive no more than 30 points for Metric 3 even though it is possible to score more than 30 points.

| <b>3a. Sources of Water.</b> Select all that apply and sum the score. This question relates to a wetland's water budget. It also is reflective that wetlands with certain types of water sources, or multiple water sources, e.g. high pH groundwater or perennial surface water connections, can be very high quality wetlands or can have high functions and values. |   |   |  |  |
|--|---|---|--|--|
| 5pts   | High pH groundwater (7.5-9.0)   |   |  |  |
| 3pts   | Other groundwater   |   |  |  |
| 1pts   | Precipitation   | 1 |  |  |
| 3pts   | Seasonal surface water  |   |  |  |
| 5pts   | Perennial surface water (lake or stream)  |   |  |  |
| 3b. Coni   | nectivity. Select all that apply and sum score  |   |  |  |
| 1pt  | 100 year floodplain. "Floodplain" is defined as "the relatively level land next to a stream or river channel that is periodically submerged by flood waters. It is composed of alluvium deposited by the present stream or river when it floods." Where they are available, flood insurance rate maps (FIRMs) and flood boundary and floodway maps may be used.   | 0 |  |  |
| 1pt  | Between stream/lake and other human land use. This question asks whether the wetland is located <u>between</u> a surface water and a different adjacent land use, such that run-off from the adjacent land use could flow through wetland before it discharges into the surface water buffering it. "Different adjacent land uses" include agricultural, commercial, industrial, mining, or residential uses. | 1 |  |  |
| 1pt  | Part of a larger wetland or upland complex. This question asks whether the wetland is in physical proximity to, or a other nearby wetland or upland habitat areas.  | 0 |  |  |
| 1pt  | Part of riparian corridor.  | 0 |  |  |
| depth is   | mum water depth. Select only one and assign score. The evaluator does not need to actually observe the wetland when greatest in order to award the maximum points for this question. The use of secondary indicators, as outlined in the 1987 seful in answering this question.   |   |  |  |
| 3 pts  | >0.7m (27.6in)  |   |  |  |
| 2pts   | 0.4 to 0.7m (15.7 to 27.6in)  |   |  |  |
| 1pt  | <0.4m (<15.7in)   | 1 |  |  |
|  | <b>3d. Duration of inundation/saturation.</b> Select one or double check and average the scores if duration is uncertain. The use of ACOE 1987 Manual secondary indicators is necessary and expected in order to properly answer this question.   |   |  |  |
| 4pts   | Semi-permanently to permanently inundated or saturated  |   |  |  |
| 3pts   | Regularly inundated or saturated  |   |  |  |
| 2pts   | Seasonally inundated  |   |  |  |
| 1pt  | Seasonally saturated in the upper 30cm (12in) of soil   | 1 |  |  |

SR Ripley II

3d Avg = 1.00

**3e. Modifications to natural hydrologic regime.** Check all observable modifications from list below. Score by selecting the most appropriate description of the wetland. Scores may be double checked and averaged. This question asks the evaluator to assess the "intactness" of, or lack of disturbance to, the natural hydrologic regime of the type of wetland that is being evaluated.

Once the evaluator has listed all possible past and ongoing disturbances, the evaluator should check the most appropriate category to describe the present state of the wetland. In instances where the evaluator believes that a wetland falls between two categories, or where the evaluator is uncertain as to which category is appropriate, it is appropriate to choose more than one and average the score.

The evaluator may check one or several of these possible disturbances, yet still determine that the natural hydrologic regime is intact. However, see Metric 4 where these same disturbances may be habitat alterations.

Check all that are observed present in or near the wetland.

| X | ditch(es), in or near the wetland     |   | point source discharges to the (non-stormwater)   |
|---|---------------------------------------|---|---|
|   | tile(s), in or near the wetland       | Х | filling/grading activities in or near the wetland |
|   | dike(s), in or near the wetland       |   | road beds/RR beds in or near the wetland          |
|   | weir(s), in or near the wetland       |   | dredging activities in or near the wetland        |
|   | stormwater inputs (addition of water) | Х | other (specify) agricultural field                |

**YES** 

wetland has not recovered from past modifications, and/or the modifications are ongoing.

<u>NO</u>

| to have<br>alteration   | d above caused or appear<br>caused more than trivial<br>ons to the wetland's natural<br>gic regime. | Assign a score 1, 3 or 7, or an intermediate score, depending on degree of recovery from the disturbance. | Assign a score of 12 since there are no or no apparent modifications. | Choose "recove<br>assign a score |   |
|---|---|---|---|----------------------------------|---|
| Select one or double check adjoining numbers and average the score.   |   |   |   | score                            |   |
| 12pts NONE OR NONE APPARENT. There are no modifications or no modifications that are apparent to the evaluator. |   |   |   |                                  |   |
| 7pts RECOVERED. The wetland appears to have recovered from past modifications.                                  |   |   |   |                                  |   |
| 3pts RECOVERING. The wetland appears to be in the process of recovering from past modifications.                |   |   |   |                                  |   |
| 1pt   | ot RECENT OR NO RECOVERY. The modifications have occurred recently occurred, and/or the             |   |   |                                  | 1 |

3e Avg= **1.00** 

SR Ripley II

Have any of the disturbances

Metric 3 Total 5.00

**NOT SURE** 

Metric 4. Habitat Alteration and Development (Max 20 points). While hydrology may be the single most important determinant for the establishment and maintenance of specific types of wetlands and wetland processes, there is a range of other factors and activities which affect wetland quality and cause disturbances to wetlands that are unrelated to hydrology. These disturbances are termed "habitat alteration." In many instances, items checked as hydrologic disturbances in Question 3e will present as alterations to a wetland's habitat or disruptions in its development (successional state). In some instances, a disturbance may be appropriately considered under both Metric 3 and Metric 4. To determine the appropriate metric scores, the evaluator should carefully determine the actual cause of the disturbance to the wetland.

|                           | ,   |  |             |  |  |        |               |
|---------------------------|---|--|-------------|--|--|--------|---------------|
| di<br>w<br>ca<br>to<br>di | a. Substrate/Soil Disturbance. neck and average. This question sturbances to the soil and surface etland. Note also that the labels of ategories are intended to be desc pontrolling. In some instances, it may consider the scoring categories sturbance continuum, from very l sturbance. | evaluates physical e substrates of the on the scoring criptive but not nay be more appropriate as fixed locations on a | apr         | amples of substrate/soil disturba<br>ply):<br>filling and grading<br>plowing<br>grazing (hooves)<br>vehicle use (off-road vehicles,<br>sedimentation<br>dredging, and other mechanic | construction vehicles)                           |        |               |
|                           | Have any of soil or substrate<br>disturbances caused or<br>appear to have caused more<br>than trivial alterations to the<br>wetland's natural soils   | YES  Assign a score 1, 2 or 3 an intermediate score depending on degree recovery from the disturbance.                 | €,          | NO Assign a score of 4 since there are no or no apparent modifications.  | NOT SURE  Choose "recovered" assign a score of 3 |        |               |
| s                         | elect one or double check adjo  | ining numbers and aver   | age         | the score.   |  |        |               |
| 4                         | 4pts NONE OR NONE APPARENT. There are no disturbances or no disturbances apparent to the evaluator.   |  |             |  |  |        |               |
| 3                         | ots RECOVERED. The wetl   | and appears to have reco   | vere        | d from past disturbances.  |  |        |               |
|                           | 2pts RECOVERING. The wetland appears to be in the process of recovering from past disturbances.   |  |             |  |  |        |               |
|                           | 1pt RECENT OR NO RECOVERY. The disturbances have occurred recently, and/or the wetland has  |  |             |  |  | 4a Avg |               |
| ra<br>T                   | b. Habitat development. Select<br>ting of how well-developed the w<br>his question presumes knowledg<br>ference standard examples. If ur  | etland is in comparison to<br>e of the types of wetlands   | othe<br>and | er ecologically and/or hydrogeom<br>the range in quality typical of the  | orphically similar wetla                         | nds.   |               |
| 7                         | 7pts EXCELLENT. Wetland appears to represent the best of its type or class.   |  |             |  |  |        |               |
| 6                         | Opts VERY GOOD. Wetland appears to be a very good example of its type or class but is lacking in characteristics which would make it excellent.   |  |             |  |  |        |               |
| 5                         | 5pts GOOD. Wetland appears to be a good example of its type or class but because of past or present disturbances, successional state, or other reasons, is not excellent.   |  |             |  |  |        |               |
| 4                         | 4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.  |  |             |  |  |        |               |
| 3                         | 3pts FAIR. Wetland appears to be a moderately good example of its type or class but because of past or present disturbances, successional state, etc. is not good.  |  |             |  |  |        |               |
| 2                         | 2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.   |  |             |  |  |        |               |
| 1                         | pt POOR. Wetland appears <u>not</u> to be a good example of its type or class because of past or present disturbances, successional state, etc.   |  |             |  | 4b Avg.  |        |               |
| _                         |   |  |             |  |  | -      | <b>-</b> 1.00 |

SR Ripley II W012

**4c. Habitat alteration.** This question evaluates the "intactness" the natural habitat of the type of wetland that is being evaluated. This question does not discriminate between wetlands with different types of habitat. Check all possible alterations that are observed. All available information, field visits, aerial photos, maps, etc. can be used to identify possible alterations. Evaluate whether the alteration is trivial in relation to the wetlands overall habitat. Select the most appropriate score that best describes the present state of the wetland. It is appropriate to "double check" and average scores. **The evaluator may check one or several of these possible disturbances, yet still determine that the natural habitat is intact.** 

Check all that are observed present in or near the wetland

| Mowing                         |   | Herbaceous layer/aquatic bed removal     |
|--------------------------------|---|--|
| Grazing (cattle, horses, etc.) |   | Sedimentation                            |
| Clearcutting                   |   | Dredging                                 |
| Selective cutting              | Х | Row-crop or orchard farming              |
| Woody debris removal           |   | Nutrient enrichment, e.g. nuisance algae |
| Toxic pollutants               |   | Other (specify):                         |
| Shrub/sapling removal          |   | Other (specify):                         |

|  | NOT SURE                                    |
|--|---|
| there are no or no apparent modifications. | Choose "recovered" and assign a score of 6. |
| 1  | there are no or no                          |

| Select | Select one score or double check adjoining numbers and average the score.  |   |
|--------|--|---|
| 9pts   | NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.  |   |
| 6pts   | RECOVERED. The wetland appears to have recovered from past alterations.  |   |
| 3pts   | RECOVERING. The wetland appears to be in the process of recovering from past alterations.  | 1 |
| 1pt    | RECENT OR NO RECOVERY. The alterations have occurred recently, and/or the wetland has not recovered from past alterations, and/or the alterations are ongoing. |   |

4c Avg. = **1.00** 

Metric 4 Total

Metric 5. Special wetland communities. Assign points in left column if the wetland meets the associated criteria below. Refer to Narrative Rating for guidance. If wetland scores over 30 points within Metric 5 further determination needed to assess if the wetland exhibits outstanding ecological or recreational values as discussed in the Narrative Rating Section.

| 5pts - >10m sq sphagnum or other moss or other vernal pools   | 5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat  |
|---|---|
| Ecological community with global rank (NatureServe): G1 (10pts), G2 (5pts), G2/G3 (3pts) or uncommon ecological resource in the ecoregion (habitat and/or species diversity, geology, wetland type, distribution/occurrence) (10 pts) | 5 pts - Wetland contains and is a buffer for a headwater stream or wetland contributes significantly to the water water quality of 303(d) listed stream and/or to surface or and/or to ground water |
| 10 pts - Older-aged mature forested wetland avg. DBH >= 30 inches   | 10 pts - Supports species Deemed in Need of Management by TWRA or TN Special Concern by TDEC  |

| Metric 5 Total  | 0 |
|-----------------|---|
| motile o l'otal |   |

| Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).  6a. Wetland Vegetation Communities Check each community present both vertically and horizontally within the wetland with an area of at least 0.1 hectares or 1000m² (0.2471 acres). Assign a score of 0 to 3 using Table 3 for 1-4 or Table 5 for 5-6. Sum the scores for the classes present.  | Score |
|--|-------|
| 1)Aquatic Bed Includes areas of wetlands dominated by plants that grow principally on or below the surface of the water for most of the growing season in most years. Floating aquatic species like duckweed ( <i>Lemna</i> spp., <i>Spirodela</i> spp.) are excluded from definition of "aquatic bed." Aquatic beds often occur as a distinct zone as an "understory" below shrubs or trees.                            | 0     |
| <b>2)Emergent</b> Includes areas of wetlands dominated by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. Common names for emergent communities include marsh, wet meadow, wet prairie, sedge meadow, and fens.  | 1     |
| <b>3)Shrub</b> Includes areas of wetlands dominated by woody vegetation less than 1m (3ft.) - 6m (20 ft) tall with a dbh of <3in. The plant species include true shrubs, young trees, or trees or shrubs that are small or stunted because of environmental conditions. Shrub wetlands may represent a successional stage leading to a forested wetland or they may be relatively stable plant communities.              | 0     |
| <b>4)Forested</b> Includes wetlands or areas of wetlands characterized by woody vegetation greater than 6m (20ft) or taller. Forested wetlands have an overstory of trees and often contain an understory of young trees and shrubs and an herbaceous layer, although the young tree/shrub and herbaceous layers can be largely missing from some types of forested wetlands. Some forested wetlands are "vernal pools". | 0     |
| <b>5)Mudflats</b> The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB <sub>3</sub> ) described in Cowardin et al. (1979) and includes areas of wetlands characterized by exposed or shallowly inundated substrates with vegetative cover less than 30%.   | 0     |
| <b>6)Open water</b> The "open water" class is equivalent to the "open water - unknown bottom" class in Cowardin et al. (1979) and includes areas that are 1) inundated, 2) un-vegetated, and 3) and "open", i.e. there is no "canopy" of any type of vegetation.   | 0     |

Table 3. Use this table to assign a cover score for Metric 6a to each of the vegetation communities identified on the preceding page. Refer to Table 4 for narrative description of "low," "moderate," and "high" quality.

| Cover<br>Scale | Description   |  |
|----------------|---|--|
| 0              | The vegetation community is either  1) absent from wetland or 2) Comprises less than 0.1 ha (.2471 acres) of contiguous area within the wetland   |  |
| 1              | Vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of low or moderate quality, or  2) if it comprises a significant part of the wetland's vegetation and is of low quality             |  |
| 2              | Thee vegetation community is present and either,  1) comprises a significant part of the wetland's vegetation and is of moderate quality, or  2) the vegetation community comprises a small part of the wetland's vegetation but is of high quality |  |
| 3              | The vegetation community is of high quality and comprises a significant part, or more, of the wetland's vegetation  |  |

Table 4. Use this table in conjunction with Table 3 to determine what is a "low", "moderate," or " high" quality community.

| Narrative | Description   |
|-----------|---|
| Low       | Low species richness and a predominance of invasive, non-native, or disturbance tolerant "weedy" species.   |
| Moderate  | Native species are the dominant component of the vegetation, although non-native or disturbance tolerant "weedy" species can also be present, and species richness is moderate to moderately high, but generally without the presence of rare, threatened, or endangered species. |
| High      | A predominance of native species, with non-native species absent or virtually absent, and high species diversity and/or the presence of rare, threatened or endangered species.   |

Table 5. Mudflat and open water community cover scale.

| 0 | Absent <0.1 ha (0.247 acres)                 |  |
|---|--|--|
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres)        |  |
| 2 | Moderate 1 ha to < 4 ha (2.47 to 9.88 acres) |  |
| 3 | High 4 ha (9.88 acres) or more               |  |

| <b>6b.</b> Horizontal (plan view) interspersion. Evaluate the wetland from a "plan view," i.e. as if the looking down upon it. See Figure 1. |  |  |  |  |
|--|--|--|--|--|
| 5pts   | HIGH Wetland has a high degree of interspersion                        |  |  |  |
| 4pts   | MODERATELY HIGH Wetland has a moderately high degree of interspersion  |  |  |  |
| 3pts   | MODERATE Wetland has a moderate degree of interspersion                |  |  |  |
| 2pts   | ts MODERATELY LOW Wetland has a moderately low degree of interspersion |  |  |  |
| 1pt  | LOW Wetland has a low degree of interspersion.                         |  |  |  |
| 0pt  | NONE Wetland has no plan view interspersion                            |  |  |  |

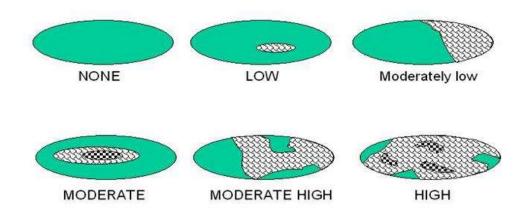


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

| <b>6c. Coverage of Invasive Plant Species.</b> Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for official list. Select only one and assign score. |  |       |  |  |
|---|--|-------|--|--|
| -5pts   | Extensive >75% areal cover of invasive species   |       |  |  |
| -3pts   | Moderate 25-75% areal cover of invasive species  |       |  |  |
| -1pts   | Sparse 5-25% areal cover of invasive species   |       |  |  |
| 0pt   | Nearly absent. <5% areal cover of invasive species   | 0     |  |  |
| 1pt   | Absent   |       |  |  |
|   | rotopography. Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. e various microtopograhic habitat features often present in wetlands. | Score |  |  |
| Vegeta  | Vegetated hummocks and tussocks  |       |  |  |
| Coarse  | Coarse woody debris >15cm (6in) in diameter  |       |  |  |
| Standing dead trees >25cm (10in) diameter at breast height  |  |       |  |  |
|   | Amphibian breeding habitat, e.g. vernal pools with standing water of sufficient duration and depth to support reproduction, or habitat for frog reproduction               |       |  |  |

| Table 6. Cover scale for         | r microtopographic habitat features   |
|----------------------------------|---|
| Microtopographic habitat quality | Narrative description   |
| 0                                | Feature is absent or functionally absent from the wetland   |
| 1                                | Feature is present in the wetland in very small amounts or if more common, of low quality                 |
| 2                                | Feature is present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3                                | Present in moderate or greater amounts and of the highest quality   |

Metric 6 Total 2

# **NON-HGM TRAM Summary Worksheet**

|                                   | Metric 1: Size  | 1  |
|-----------------------------------|---|----|
|                                   | Metric 2: Buffers and surrounding land use                  | 1  |
|                                   | Metric 3: Hydrology   | 5  |
| Non-HGM<br>Quantitative<br>Rating | Metric 4: Habitat   | 3  |
|                                   | Metric 5: Special Wetland Communities                       | 0  |
|                                   | Metric 6: Plant communities, interspersion, microtopography | 2  |
|                                   | TOTAL SCORE   | 12 |

SR Ripley II

Rank = Low

"Wetland Conditions with an overall score of 100-75 are considered Exceptional Tennessee Waters. Wetlands with a score of 74-45 are considered to have moderate resource value, and wetland with a score of 44 and below have a low resource value." (TRAM 2015, pg 2)



#### Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Vers   | ion 1.5 (Fillable Form) |              |  |  |  |
|---|-------------------------|--------------|--|--|--|
| Named Waterbody: Hyde Creek   | Date/Time: 9/19/22      |              |  |  |  |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   |                         | Project ID : |  |  |  |
| Site Name/Description: S001   |                         | SR Ripley II |  |  |  |
| Site Location: Forested area near agricultural cotton field   |                         |              |  |  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta        | ble 1.       |  |  |  |
| Previous Rainfall (7-days) : 0.03"  | ble 1.                  |              |  |  |  |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USAC                           | Precipitation Tool      |              |  |  |  |
| Watershed Size: 29,327.89   | le                      |              |  |  |  |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded                                     | eb Soil Survey          |              |  |  |  |
| Surrounding Land Use : Forested, Agricultural (cotton)  |                         |              |  |  |  |
| Degree of historical alteration to natural channel morphology & hvdrology (select one & describe fully in Notes) : Slight |                         |              |  |  |  |
| Primary Field Indicators Observed   |                         |              |  |  |  |

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase                       | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

| Overall Hydrologic Determination = STREAM         |  |
|---|--|
| Secondary Indicator Score (if applicable) = 24.00 |  |
| Justification / Notes :                           |  |
| Evidence of spoil piles, overgrown                |  |
| R45B5   |  |
| S1  |  |
|   |  |
|   |  |

| A. Geomorphology (Subtotal = 12.00                             | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 1   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 1   |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 3   |

| <b>B.</b> Hydrology (Subtotal = 6.00                | Absent | Weak | Moderate | Strong |            |
|---|--------|------|----------|--------|------------|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0          |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 1          |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5        |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | <b>7</b> 1 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1          |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5        |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 24.00                                       |  |
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| Under Normal Conditions, Wa<br>Conveyance if Secondary Ind |  |

| Notes: |  |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



# Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Torribodos Bivision of Water Resources, Vere  | ion no (i mabio i onni) |                         |
|---|-------------------------|-------------------------|
| Named Waterbody: UNT to Hyde Creek  |                         | Date/Time: 9/19/22      |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin                               |                         | Project ID :            |
| Site Name/Description: S002   |                         | SR Ripley II            |
| Site Location: Runs through agricultural field  |                         |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta        | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta       | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :     | CE Antecedent F         | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderdal       | le                      |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA We         | eb Soil Survey          |
| Surrounding Land Use : Forested, Agricultural (cotton & corn)                         |                         |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Severe       | y (select one & desc    | cribe fully in Notes) : |
|   | •                       |                         |

## **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase                       | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

| Overall Hydrologic Determination = STREAM         |  |
|---|--|
| Secondary Indicator Score (if applicable) = 21.50 |  |
| Justification / Notes: S2                         |  |
| Straightened through field.                       |  |
| Bank Width: 2-6'                                  |  |
| Bank height: 2-8'                                 |  |
| Blue line on NHD                                  |  |
| Substrate: clay/silt                              |  |

| A. Geomorphology (Subtotal = 9.00                              | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1        |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1        |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>1</b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | <b></b>  |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| B. Hydrology (Subtotal = 6.00                       | Absent           | Weak | Moderate | Strong |     |
|---|------------------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0                | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0                | 1    | 2        | 3      | 2   |
| 16. Leaf litter in channel                          | 1.5              | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0                | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0                | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No = 0 Yes = 1.5 |      | 1.5      |        |     |

| C. Biology (Subtotal = 6.50                    | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2   |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0   |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0   |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 1   |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0   |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0   |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0   |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $21.50$ |
|------------------------|
|------------------------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

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| 5.Macrobenthos (record type & abundance): beetles |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



# Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termessee Division of Water Nesources   | s, version 1.5 (i illable i onn)                 |
|---|--|
| Named Waterbody: UNT to Hyde Creek  | Date/Time: 9/20/22                               |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin                           | Project ID :                                     |
| Site Name/Description: S003   | SR Ripley II                                     |
| Site Location: Runs through agricultural field along property b                   | boundary   |
| HUC (12 digit): Cane Creek Upper 080102080701                                     | Latitude: See Table 1.                           |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                          |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : | JSACE Antecedent Precipitation Tool              |
| Watershed Size: 29,327.89   | County: Lauderdale                               |
| Soil Type(s) / Geology : Loring silt loam, 5 to 8 percent slopes, ero             | oded Source: USDA Web Soil Survey                |
| Surrounding Land Use: Forested, Agricultural (cotton & corn)                      | )  |
| Degree of historical alteration to natural channel morphology & hyderate          | drology (select one & describe fully in Notes) : |
|   |  |

## **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

| Overall Hydrologic Determination = STREAM   |  |
|---|--|
| Secondary Indicator Score (if applicable) = 16.00   |  |
| Justification / Notes :   |  |
| Property ditch line; R6: Ephemeral Jurisdiction; Relic stream; No WWC feeding; Bed and Bank |  |
| Bank Width: 1-3'  |  |
| Bank height: 2-6'   |  |
| Substrate: mud/silt   |  |
| S3  |  |

| A. Geomorphology (Subtotal = 8.50                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 3.50                       | Absent | Weak | Moderate | Strong | Τ   |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 16.00  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



# Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Torribodos Bivision of Water Resources, Vere  | ion no (i masio i omi) |                         |
|---|------------------------|-------------------------|
| Named Waterbody: UNT to Hyde Creek  |                        | Date/Time: 9/20/22      |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   |                        | Project ID :            |
| Site Name/Description: S004   |                        | SR Ripley II            |
| Site Location: Runs through agricultural field  |                        |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta       | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta      | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC | CE Antecedent F        | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda       | le                      |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded           | Source: USDA We        | eb Soil Survey          |
| Surrounding Land Use : Forested, Agricultural (cotton & corn)                                   |                        |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Severe                 | y (select one & desc   | cribe fully in Notes) : |
|   | _                      |                         |

## **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

| Overall Hydrologic Determination = STREAM                  |
|--|
| Secondary Indicator Score (if applicable) = 15.00          |
| Justification / Notes: S4                                  |
| Infield fall of ragweed and horsetail woods clear channel. |
| Bank Width: 2-6'   |
| Bank height: 2-6'  |
| R6   |
| Well defined channel with OHWM and defined bed and bank    |

| A. Geomorphology (Subtotal = 7.50                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 1   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0.5 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 4.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 3.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 1 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 15.00   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



# Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

|   | 1011 110 (1 maiore 1 01111) |                         |  |  |  |  |
|---|-----------------------------|-------------------------|--|--|--|--|
| Named Waterbody: Hyde Creek   |                             | Date/Time: 9/20/22      |  |  |  |  |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   |                             | Project ID :            |  |  |  |  |
| Site Name/Description: S005   | Site Name/Description: S005 |                         |  |  |  |  |
| Site Location: Runs through agricultural field  |                             |                         |  |  |  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | <sup>Latitude:</sup> See Ta | ble 1.                  |  |  |  |  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta           | ble 1.                  |  |  |  |  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC | CE Antecedent F             | Precipitation Tool      |  |  |  |  |
| Watershed Size: 29,327.89   | County: Lauderda            | le                      |  |  |  |  |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded           | Source: USDA We             | eb Soil Survey          |  |  |  |  |
| Surrounding Land Use : Forested, Agricultural (cotton & corn)                                   |                             |                         |  |  |  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Severe                 | gy (select one & desc       | cribe fully in Notes) : |  |  |  |  |
|   |                             |                         |  |  |  |  |

## **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

| Overall Hydrologic Determination = STREAM   |  |
|---|--|
| Secondary Indicator Score (if applicable) = 20.00   |  |
| Justification / Notes: S5   |  |
| Ragweed in channel infield. Zero veg in channel in forested areas. Severe H.A. due to straightening in field. |  |
| Bank Width: 2-8'  |  |
| Bank height: 2-8'   |  |
| R4  |  |
| Silt/mud bottom   |  |

| A. Geomorphology (Subtotal = 12.00                             | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5        |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1          |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 1          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 1          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | <b>]</b> 1 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 5.00                       | Absent | Weak | Moderate  | Strong |     |
|---|--------|------|-----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2         | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2         | 3      | 0.5 |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5       | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1         | 1.5    | 1.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes = 1.5 |        | 1.5 |

| C. Biology (Subtotal = 3.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 1 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

### Notes:

| 11.Grade controls: culvert                                |
|---|
| 15.Water in channel and >48 hours since sig. rain: 1 pool |
|   |
|   |
|   |
|   |
|   |
|   |
|   |

<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

## **Hydrologic Determination Field Data Sheet**

| Date/Time: 9/20/2   Assessors/Affiliation: Benjamin Burdette and Jake Irvin   Site Name/Description: S006   SR Ripley II  | Tennessee Division of Water Resources, Vers   | ion 1.5 (Fillable Forr      | n)               |                    |  |
|---|---|-----------------------------|------------------|--------------------|--|
| Site Name/Description: S006  Site Name/Description: S007  Site Name/Description: S007  Site Name/Description: S007  HUC (12 digit): Cane Creek Upper 080102080701  Previous Rainfall (7-days): 0.03"  Precipitation this Season vs. Normal: elevated  Source of recent & seasond precip, data:  Source of recent & seasond precip, data:  Soil Type(s) / Geology: Maneral allown: 15 50 percent dispose, searably erood, scripton plates. Adar all Sci. 2: 29,327.89  Soil Type(s) / Geology: Maneral allown: 15 50 percent dispose, searably erood, scription plates. Adar all Sci. 2: 29,327.89  Soil Type(s) / Geology: Maneral allown: 15 50 percent dispose, searably erood, scription plates. Adar all Sci. 2: 29,327.89  Soil Type(s) / Geology: Maneral allown: 15 50 percent dispose, searably erood, scription plates. Adar all Sci. 2: 29,327.89  Soil Type(s) / Geology: Maneral allown: 15 50 percent dispose, searably erood, scription plates. Adar all Sci. 2: 29,327.89  Soil Type(s) / Geology: Maneral allown: 15 50 percent dispose, searably erood, scription plates. Adar all Sci. 2: 29,327.89  Soil Type(s) / Geology: Maneral allown: 15 50 percent dispose, searably erood, scription plates. Adar all Sci. 2: 29,327.89  County: Lauderdale  Source: USDA Web Soil Survey  Soil Type(s) / Geology: Maneral allown: 15 50 percent dispose, searably erood, scription plates. Adar allown: 15 50 percent dispose, scalar plates. Adar allown: 15 50 percent dispose, sca | Named Waterbody: Hyde Creek   |                             | Date             | e/Time: 9/20/22    |  |
| Site Location: Starts off-site; flows into riser and flows into forested area off-site  HUC (12 digit): Cane Creek Upper 080102080701  Previous Rainfall (7-days): 0.03"  Precipitation this Season vs. Normal: Source of recent & seasonal precip. data:  Watershed Size: 29,327.89  Soil Type(s) / Geology: Normal: | Assessors/Affiliation: Benjamin Burdette and Jake Irvin   | Proj                        | Project ID :     |                    |  |
| HUC (12 digit): Cane Creek Upper 080102080701  Previous Rainfall (7-days) : 0.03"  Precipitation this Season vs. Normal : elevated  | Site Name/Description: S006   |                             | SR               | SR Ripley II       |  |
| Previous Rainfall (7-days): 0.03"  Precipitation this Season vs. Normal: elevated  Watershed Size: 29,327.89  Soil Type(s) / Geology: Materpres altown. 12 to 20 percard alepses, society ended, receiper phase. Author altowards a Seasonal precipitation to natural channel morphology & Normal altown to natural channel morphology & Select one & describe fully in Notes)  Severe  Primary Field Indicators Observed  Primary Indicators  NO YES  1. Hydrologic feature exists solely due to a process discharge  Primary Indicators  1. Hydrologic feature exists solely due to a process discharge  2. Defined bed and bank absent, vegetation composed of upland and FACU species  Precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of insteady occurring ground water table connection  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  Cuidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Deverall Hydrologic Determination = STREAM  | Site Location: Starts off-site; flows into riser and flows into foreste   | d area off-site             |                  |                    |  |
| Precipitation this Season vs. Normal: elevated USACE Antecedent Precipitation To Source of recent & seasonal precip, data: Country: Lauderdale Soil Type(s) / Geology: Mempite sit boam, 12 to 23 percent above, severally ecoded. Forthern phases, Addr sit Source: USDA Web Soil Survey Surrounding Land Use: Forested, Agricultural (cotton & corn)  Degree of historical alteration to natural channel morohology (select one & describe fully in Notes) Severe  Primary Field Indicators Observed  Primary Indicators No YES  1. Hydrologic feature exists solely due to a process discharge ✓ WWC  2. Defined bed and bank absent, vegetation composed of upland and FACU species ✓ WWC  3. Watercourse dry anytime during February through April 15th, under normal N/A WWC  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection ✓ Stream  8. Flowing water in channel and 7 days since last precip > 0.1" in local watershed ✓ Stream  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5   | HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See 7             | Table 1          | -                  |  |
| Watershed Size : 29,327.89  Soil Type(s) / Geology : Mercepits sill blant. 12 to 2 percent depose, secently eroded, reinfam prosec, Adder sill.  Soil Type(s) / Geology : Mercepits sill blant. 12 to 2 percent depose, secently eroded, reinfam prosec, Adder sill.  Source: USDA Web Soil Survey  Surrounding Land Use : Forested, Agricultural (cotton & corn)  Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes)  Severe  Primary Field Indicators Observed  Primary Indicators  NO YES  1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species  3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of fish (except Gambusia)  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  | Previous Rainfall (7-days) : 0.03"  | Longitude: See 7            | able 1           |                    |  |
| Soil Type(s) / Geology: Mempitia silitar. 12 to 20 percent slopes. Severelly encoded, northern phases. Add or silk  Source: USDA Web Soil Survey  Surrounding Land Use: Forested, Agricultural (cotton & corn)  Degree of historical alteration to natural channel morohology (select one & describe fully in Notes)  Severe  Primary Field Indicators Observed  Primary Indicators  Primary Indicators  NO YES  1. Hydrologic feature exists solely due to a process discharge  2. Defined bed and bank absent, vegetation composed of upland and FACU species  3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5   |   | CE Antecedent               | Preci            | pitation Tool      |  |
| Degree of historical alteration to natural channel morpholoav & hvdrology (select one & describe fully in Notes) Severe  Primary Field Indicators Observed  Primary Indicators  Primary Indicators  NO YES  1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection  Presence of naturally occurring ground water table connection  Presence of naturally occurring ground water table connection  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  | Watershed Size: 29,327.89   | County: Laudero             | lale             |                    |  |
| Primary Field Indicators Observed  Primary Indicators  1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed 9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM  | Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase; Adler silt loam, 0 to 2 percent slopes, occasionally flooded                         | Source: USDA V              | Veb Sc           | oil Survey         |  |
| Primary Field Indicators Observed  Primary Indicators  1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species ✓ WWC 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed 9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM  | Surrounding Land Use: Forested, Agricultural (cotton & corn)  |                             |                  |                    |  |
| Primary Indicators  1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except *Gambusia*) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed 9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM  |   | gy (select one & de         | scribe f         | fully in Notes) :  |  |
| 1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except <i>Gambusia</i> ) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed 9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM   | Primary Field Indicators Obser  | ved                         |                  |                    |  |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species   ✓ WWC  3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of fish (except Gambusia)  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM  | Primary Indicators  |                             | NO               | YES                |  |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM   | Hydrologic feature exists solely due to a process discharge   |                             | <b>✓</b>         | WWC                |  |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except <i>Gambusia</i> )  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM   | 2. Defined bed and bank absent, vegetation composed of upland and F   | ACU species                 | <b>✓</b>         | WWC                |  |
| to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM   |   | normal N/A                  |                  | wwc                |  |
| aquatic phase  6. Presence of fish (except *Gambusia*)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM  |   | ect response                | <b>√</b>         | WWC                |  |
| 6. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM  |   | month                       | <b>✓</b>         | Stream             |  |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM   |   |                             | <b>✓</b>         | Stream             |  |
| 9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM  | 7. Presence of naturally occurring ground water table connection  |                             | <u> </u>         | Stream             |  |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM   | 8. Flowing water in channel and 7 days since last precip >0.1" in local v   | vatershed                   | <b>✓</b>         | Stream             |  |
| assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = STREAM   | 9. Evidence watercourse has been used as a supply of drinking water   |                             | <b>✓</b>         | Stream             |  |
|   | In the absence of a primary indicator, or other definitive evidence, con on page 2 of this sheet, and provide score  Guidance for the interpretation and scoring of both the primary & se | mplete the secondary below. | eviden ary indic | ce.<br>cator table |  |
| Secondary indicator Score (if applicable) = 23.00   |   |                             |                  |                    |  |
|   | Secondary indicator Score (if applicable) = 23.00   |                             |                  |                    |  |

**Justification / Notes:** Intermittent Centerline 5 ft S6

| A. Geomorphology (Subtotal = 10.00                             | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 1   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| <b>B.</b> Hydrology (Subtotal = 5.50                | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 1   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 7.50                    | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 1   |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0   |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0   |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0.5 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0   |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0   |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0   |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\frac{23.00}{}$  |   |
|--|---|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points | r |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



# Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

|   | ,                       |                    |
|---|-------------------------|--------------------|
| Named Waterbody: UNT to Hyde Creek  | Date/Time: 9/20/22      |                    |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   |                         | Project ID :       |
| Site Name/Description: S007   |                         | SR Ripley II       |
| Site Location: Starts off-site; flows into S6   |                         |                    |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta        | ıble 1.            |
| Previous Rainfall (7-days) : 0.03"  | ble 1.                  |                    |
| Precipitation this Season vs. Normal : elevated USAG Source of recent & seasonal precip. data :   | CE Antecedent F         | Precipitation Tool |
| Watershed Size: 29,327.89   | County: Lauderda        | le                 |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase; Adler silt loam, 0 to 2 percent slopes, occasionally flooded | eb Soil Survey          |                    |
| Surrounding Land Use : Forested, Agricultural (cotton & corn)   |                         |                    |
| Degree of historical alteration to natural channel morphology & hydrolog Moderate   | cribe fully in Notes) : |                    |
|   | _                       |                    |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

| Overall Hydrologic Determination = STREAM         |   |
|---|---|
| Secondary Indicator Score (if applicable) = 19.50 |   |
| Justification / Notes :                           |   |
| Bank height: 1-6 ft                               | _ |
| Bank width: 2-6 ft                                |   |
| Substrate: silt/mud                               |   |
| S7  |   |
|   |   |

| A. Geomorphology (Subtotal = 9.50                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0.5 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 1   |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| <b>B.</b> Hydrology (Subtotal = $3.50$              | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 6.50                    | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0   |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0   |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0   |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0   |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0   |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0   |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 19.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



# Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termoded Bivision of Water Recognices, Very  | sion no (i masio i omi) |                         |
|--|-------------------------|-------------------------|
| Named Waterbody: UNT to Hyde Creek   |                         | Date/Time: 9/21/22      |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin  |                         | Project ID :            |
| Site Name/Description: S008  |                         | SR Ripley II            |
| Site Location: Starts with WWC 21; flows from corn field into fore                             | sted area off-site      |                         |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Ta        | able 1.                 |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Ta       | ıble 1.                 |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USA | CE Antecedent F         | Precipitation Tool      |
| Watershed Size: 29,327.89  | County: Lauderda        | le                      |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded          | Source: USDA We         | eb Soil Survey          |
| Surrounding Land Use : Forested, Agricultural  |                         |                         |
| Degree of historical alteration to natural channel morphology & hydrolo Severe                 | gy (select one & des    | cribe fully in Notes) : |
|  |                         |                         |

## **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

| Overall Hydrologic Determination = STREAM                    | Ov   |
|--|------|
| Secondary Indicator Score (if applicable) = <sub>19.25</sub> | Sec  |
| ustification / Notes :                                       | Just |
| S8   | _S8  |
|  |      |
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|  |      |
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| A. Geomorphology (Subtotal = 9.00                              | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1        |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1        |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>1</b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| B. Hydrology (Subtotal = 3.75                       | Absent | Weak | Moderate | Strong |      |
|---|--------|------|----------|--------|------|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0    |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0    |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5  |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5  |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1    |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0.75 |

| C. Biology (Subtotal = 6.50                    | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0   |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0   |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0   |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0   |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0   |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0   |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 19.25 |
|----------------|-------|
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Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

| Notes |  |
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| 11.Grade controls: culvert |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

|  | , ,                   |                         |
|--|-----------------------|-------------------------|
| Named Waterbody: UNT to Hyde Creek   | Date/Time: 9/21/22    |                         |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin  | Project ID :          |                         |
| Site Name/Description: S009  |                       | SR Ripley II            |
| Site Location: Cornfield   |                       |                         |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Ta      | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Ta     | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC  | CE Antecedent F       | Precipitation Tool      |
| Watershed Size: 29,327.89  | County: Lauderda      | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase; Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase | Source: USDA We       | eb Soil Survey          |
| Surrounding Land Use : Agricultural (corn)   |                       |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Absent  | gy (select one & desc | cribe fully in Notes) : |
|  |                       |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = STREAM                   |
|---|
| econdary Indicator Score (if applicable) = <sub>19.00</sub> |
| stification / Notes :                                       |
| Bank height: 1-4 ft   |
| Bank width: 1-6 ft  |
| Substrate: silt/mud   |
| Connects to W8  |
| S9  |

| A. Geomorphology (Subtotal = 8.50                              | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5      |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1        |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>1</b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| Recent alluvial deposits                                       | 0      | 0.5  | 1        | 1.5    | 0        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 1        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| B. Hydrology (Subtotal = 4.00                       | Absent | Weak | Moderate  | Strong |     |
|---|--------|------|-----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2         | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2         | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5       | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes = 1.5 |        | 1.5 |

| C. Biology (Subtotal = 6.50                    | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0   |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0   |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0   |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0   |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0   |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0   |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 19.00   |
|----------------|---|
|                | litions, Watercourse is a Wet Weather<br>andary Indicator Score < 19 points |

| Notes: |  |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Torribodos Bivision of Water Resources, Vere   | 1011 1.0 (1 mable 1 01111)                 |
|--|--|
| Named Waterbody: UNT to Hyde Creek   | Date/Time: 9/21/22                         |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin  | Project ID:                                |
| Site Name/Description: S010  | SR Ripley II                               |
| Site Location: Cornfield   | ·  |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :  | CE Antecedent Precipitation Too            |
| Watershed Size: 29,327.89  | County: Lauderdale                         |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded; Loring silt loam, 5 to 8 percent slopes, severely eroded | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural (corn)   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Moderate  | y (select one & describe fully in Notes) : |
|  |  |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = S           | STREAM |
|--|--------|
| Secondary Indicator Score (if applicable) = 21 | 1.00   |
| Justification / Notes :                        |        |
| Bank height: 1-4 ft                            |        |
| Bank width: 1-6 ft                             |        |
| Connects from OW1 via overflow culvert         |        |
| S10  |        |
|  |        |

| A. Geomorphology (Subtotal = 10.00                             | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5      |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>1</b> |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>1</b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 1        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| B. Hydrology (Subtotal = 4.50                       | Absent           | Weak | Moderate | Strong |     |
|---|------------------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0                | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0                | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5              | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0                | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0                | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No = 0 Yes = 1.5 |      | 1.5      |        |     |

| C. Biology (Subtotal = 6.50                    | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3   |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0   |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0   |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0   |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0   |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0   |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0   |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\frac{2}{}$ | .00   |
|-----------------------------|---|
|                             | ons, Watercourse is a Wet Weather<br>lary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Termicode Bivision of Water Recourses, Vere   | 1011 1.0 (1 mable 1 01111)                  |
|---|---|
| Named Waterbody: UNT to Hyde Creek  | Date/Time: 9/21/22                          |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   | Project ID :                                |
| Site Name/Description: S011   | SR Ripley II                                |
| Site Location: Cornfield  |   |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                      |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                     |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC | CE Antecedent Precipitation Tool            |
| Watershed Size: 29,327.89   | County: Lauderdale                          |
| Soil Type(s) / Geology : Memphis silt loam, 20 to 40 percent slopes, northern phase             | Source: USDA Web Soil Survey                |
| Surrounding Land Use : Forested; Easement   |   |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                 | gy (select one & describe fully in Notes) : |
|   |   |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = STREAM         |
|---|
| Secondary Indicator Score (if applicable) = 19.50 |
| Justification / Notes :                           |
| Bank height: 1-4 ft                               |
| Bank width: 2-6 ft                                |
| Substrate: silt/gravel                            |
| S11   |
|   |

| A. Geomorphology (Subtotal = 10.50                             | Absent | Weak | Moderate | Strong |         |
|--|--------|------|----------|--------|---------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3       |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2       |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1       |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1       |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0       |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1       |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0       |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5     |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0       |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1       |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0       |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | <b></b> |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0       |

| B. Hydrology (Subtotal = 4.00                       | Absent           | Weak | Moderate | Strong |     |
|---|------------------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0                | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0                | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5              | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0                | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0                | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No = 0 Yes = 1.5 |      | 1.5      |        |     |

| C. Biology (Subtotal = 5.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 19.50   |  |
|----------------|---|--|
|                | ditions, Watercourse i<br>ondary Indicator Scor |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Total Cood Biviol of Water Recognition, Vere  | den 1.0 (i mable i enti) |                         |
|---|--------------------------|-------------------------|
| Named Waterbody: UNT to Hyde Creek  |                          | Date/Time: 9/21/22      |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   |                          | Project ID :            |
| Site Name/Description: S012   |                          | SR Ripley II            |
| Site Location: Forested area near road  |                          |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta         | able 1.                 |
| Previous Rainfall (7-days) : 0.03" Longitude: See Tal   |                          | ıble 1.                 |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :                   | CE Antecedent F          | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda         | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase | Source: USDA We          | eb Soil Survey          |
| Surrounding Land Use : Forested; Easement   |                          |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                     | gy (select one & desc    | cribe fully in Notes) : |
|   |                          |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = STREAM         |  |
|---|--|
| Secondary Indicator Score (if applicable) = 20.00 |  |
| Justification / Notes :                           |  |
| Bank height: 1-4 ft                               |  |
| Bank width: 2-4 ft                                |  |
| Substrate: silt/gravel/sand                       |  |
| Starts at WWC35 end                               |  |
| S12   |  |

| A. Geomorphology (Subtotal = 11.50                             | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 2          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1          |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | <b>1</b> 1 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 4.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 1   |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 20.00 |
|----------------|-------|
|                |       |

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

| Notes |  |
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| 11.Grade controls: culvert |  |
|----------------------------|--|
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

|   | 1011 110 (1 maiore 1 01111) |                         |
|---|-----------------------------|-------------------------|
| Named Waterbody: UNT to Hyde Creek  |                             | Date/Time: 9/21/22      |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   |                             | Project ID :            |
| Site Name/Description: S013   |                             | SR Ripley II            |
| Site Location: Natural in forest; filled with veg in soybean field; he                          | avily altered/straig        | htened                  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta            | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta           | ble 1.                  |
| Precipitation this Season vs. Normal : elevated USAC Source of recent & seasonal precip. data : | CE Antecedent F             | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda            | le                      |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded           | Source: USDA We             | eb Soil Survey          |
| Surrounding Land Use : Forested; Agricultural   |                             |                         |
| Degree of historical alteration to natural channel morphology & hydrolog<br>Severe              | gy (select one & desc       | cribe fully in Notes) : |
|   | _                           |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = STREAM         |
|---|
| Secondary Indicator Score (if applicable) = 20.00 |
| ustification / Notes :                            |
| Bank height: not collected                        |
| Bank width: 4 ft                                  |
| R4  |
| S13   |
|   |

| A. Geomorphology (Subtotal = 10.50                             | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1          |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| Recent alluvial deposits                                       | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | <b>7</b> 0 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| <b>B.</b> Hydrology (Subtotal = 5.00                | Absent | Weak | Moderate | Strong |            |
|---|--------|------|----------|--------|------------|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0          |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0          |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5        |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | <b>7</b> 1 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1          |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5        |

| C. Biology (Subtotal = 4.50                    | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2   |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2   |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0   |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0   |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0   |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0   |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0   |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0   |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 20.00   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Tollifeddod Bividion of Water Recognices, Vere  | ien ite (i masie i enni)         |  |  |  |
|---|----------------------------------|--|--|--|
| Named Waterbody: UNT to Hyde Creek  | Date/Time: 9/21/22               |  |  |  |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   | Project ID :                     |  |  |  |
| Site Name/Description: S014   | SR Ripley II                     |  |  |  |
| Site Location: Tie to S013  |                                  |  |  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.           |  |  |  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.          |  |  |  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC                       | CE Antecedent Precipitation Tool |  |  |  |
| Watershed Size: 29,327.89   | County: Lauderdale               |  |  |  |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded                                  | Source: USDA Web Soil Survey     |  |  |  |
| Surrounding Land Use : Forested; Agricultural   |                                  |  |  |  |
| Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Note Slight |                                  |  |  |  |
|   |                                  |  |  |  |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = STREAM         |
|---|
| Secondary Indicator Score (if applicable) = 22.50 |
| Justification / Notes :                           |
| Bank height: 1-4 ft                               |
| Bank width: 2-4 ft                                |
| Substrate: silt/mud                               |
| S14   |
|   |

| A. Geomorphology (Subtotal = 11.50                             | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>1</b>   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1          |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 1          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | <b>]</b> 1 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| <b>B.</b> Hydrology (Subtotal = 5.00                | Absent | Weak | Moderate | Strong |            |
|---|--------|------|----------|--------|------------|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0          |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0          |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5        |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | <b>7</b> 1 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1          |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5        |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 22.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

|   | ,  |
|---|--|
| Named Waterbody: UNT to Hyde Creek  | Date/Time: 9/21/22                         |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   | Project ID :                               |
| Site Name/Description: S015   | SR Ripley II                               |
| Site Location: Likely crosses road to W9; Ditched; Soybean                                      |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : elevated USAC Source of recent & seasonal precip. data : | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded            | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Forested; Agricultural   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Severe                 | gy (select one & describe fully in Notes): |
|   |  |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = STREAM         |
|---|
| Secondary Indicator Score (if applicable) = 19.00 |
| Justification / Notes :                           |
| Bank height: 1-3 ft                               |
| Bank width: 2-4 ft                                |
| Substrate: silt/mud                               |
| S15   |
|   |

| A. Geomorphology (Subtotal = $9.50$                            | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | <b>1</b> |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>1</b> |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>1</b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| Recent alluvial deposits                                       | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| <b>B.</b> Hydrology (Subtotal = 5.00                | Absent | Weak | Moderate | Strong |            |
|---|--------|------|----------|--------|------------|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0          |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0          |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5        |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | <b>7</b> 1 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1          |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5        |

| C. Biology (Subtotal = 4.50                    | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2          |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2          |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0          |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0          |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0          |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0          |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | <b>7</b> o |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0          |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 19.00 | Total Points = | 19.00 |
|----------------------|----------------|-------|
|----------------------|----------------|-------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

### Notes:

| 11.Grade controls: culvert |  |  |
|----------------------------|--|--|
| 24.Amphibians: frogs       |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Torriboddo Bividion of Water Reddanded, Vere  | 1011 1.0 (1 mable 1 01111)                |
|---|---|
| Named Waterbody: UNT to Hyde Creek  | Date/Time: 9/21/22                        |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   | Project ID :                              |
| Site Name/Description: S016   | SR Ripley II                              |
| Site Location: Connects to S15; Ditched   |   |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                    |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                   |
| Precipitation this Season vs. Normal: elevated USAC Source of recent & seasonal precip. data:   | CE Antecedent Precipitation Tool          |
| Watershed Size: 29,327.89   | County: Lauderdale                        |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded; Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase | Source: USDA Web Soil Survey              |
| Surrounding Land Use : Forested; Agricultural   |   |
| Degree of historical alteration to natural channel morphology & hydrolog Severe   | y (select one & describe fully in Notes): |
|   |   |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = STREAM         |
|---|
| Secondary Indicator Score (if applicable) = 23.50 |
| Justification / Notes :                           |
| Bank height: 2-6 ft                               |
| Bank width: 2-6 ft                                |
| Substrate: silt/mud/gravel                        |
| S16   |
|   |

| A. Geomorphology (Subtotal = 12.50                             | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 2   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 2   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 1   |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| <b>B.</b> Hydrology (Subtotal = 5.00                | Absent | Weak | Moderate | Strong |            |
|---|--------|------|----------|--------|------------|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0          |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0          |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5        |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | <b>7</b> 1 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1          |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5        |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 23.50  | - |
|----------------|--|---|
|                | ditions, Watercourse<br>ondary Indicator Sco |   |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Named Waterbody: UNT to Hyde Creek  |                      | Date/Time: 9/22/22      |
|---|----------------------|-------------------------|
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   |                      | Project ID :            |
| Site Name/Description: S017   |                      | SR Ripley II            |
| Site Location: South of WWC 53; flows from agricultural field to of                                 | fsite                |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta     | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta    | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC     | CE Antecedent F      | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda     | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase | Source: USDA We      | eb Soil Survey          |
| Surrounding Land Use : Forested; agricultural   |                      |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Absent                     | y (select one & desc | cribe fully in Notes) : |
|   |                      |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = STREAM         |  |
|---|--|
| Secondary Indicator Score (if applicable) = 23.00 |  |
| Justification / Notes :                           |  |
| Bank height: 4-20 ft                              |  |
| Bank width: 4-15 ft                               |  |
| Heavily incised banks                             |  |
| S17   |  |
|   |  |

| A. Geomorphology (Subtotal = 12.50                             | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| 1. Continuous bed and bank                                     | 0      | 1    | 2        | 3      | 3        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2        |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1        |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <u> </u> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 3        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| B. Hydrology (Subtotal = 4.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 23.00  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Telliessee Division of Water Nesources, vers  | ion 1.5 (i liable i omi)       |  |  |  |
|---|--------------------------------|--|--|--|
| Named Waterbody: UNT to Hyde Creek  | Date/Time: 9/22/               |  |  |  |
| Assessors/Affiliation: Benjamin Burdette and Jake Irvin   | Project ID :                   |  |  |  |
| Site Name/Description: S018   | SR Ripley II                   |  |  |  |
| Site Location: Starts at WWC54 end; Borders property line quickly   | y runs off-site                |  |  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.         |  |  |  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.        |  |  |  |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :                                       | CE Antecedent Precipitation To |  |  |  |
| Watershed Size: 29,327.89   | County: Lauderdale             |  |  |  |
| Soil Type(s) / Geology: Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase                     | Source: USDA Web Soil Survey   |  |  |  |
| Surrounding Land Use : Forested   |                                |  |  |  |
| Degree of historical alteration to natural channel morphology & hvdrology (select one & describe fully in Notes  Absent |                                |  |  |  |
|   |                                |  |  |  |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = STREAM         |  |
|---|--|
| Secondary Indicator Score (if applicable) = 21.50 |  |
| Justification / Notes :                           |  |
| Bank height: 2-10 ft                              |  |
| Bank width: 2-10 ft                               |  |
| Substrate: silt/mud/gravel                        |  |
| Heavily incised banks; Similar to S17             |  |
| S18   |  |

| A. Geomorphology (Subtotal = 11.00                             | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2        |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>1</b> |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>1</b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 3        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| B. Hydrology (Subtotal = 4.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 21.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| ,  |   |
|--|---|
| Named Waterbody: N/A   | Date/Time: 9/19/22                          |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  | Project ID :                                |
| Site Name/Description: E001  | SR Ripley II                                |
| Site Location: Forested area near cotton field and site boundary                               | ·   |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Table 1.                      |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Table 1.                     |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USA | CE Antecedent Precipitation Tool            |
| Watershed Size: 29,327.89  | County: Lauderdale                          |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded           | Source: USDA Web Soil Survey                |
| Surrounding Land Use : Forested, Agricultural (cotton)   |   |
| Degree of historical alteration to natural channel morphology & hydrolog Absent                | gy (select one & describe fully in Notes) : |
|  | _   |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |   |
|---|---|
| Secondary Indicator Score (if applicable) = 15.00         |   |
| Justification / Notes :                                   |   |
| R6 - Jurisdictional                                       | _ |
| BH: 1-3 ft  |   |
| BW: 2-4 ft  |   |
| Defined bed and bank                                      |   |
| WWC 1   |   |

| A. Geomorphology (Subtotal = 6.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1          |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| Recent alluvial deposits                                       | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | <b>7</b> 0 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0          |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong    |     |
|---|--------|------|----------|-----------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3         | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3         | NA  |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0         | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5       | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5       | 1   |
| 19. Hydric soils in channel bed or sides of channel | No = 0 |      | Yes      | Yes = 1.5 |     |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 15.00   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Named Waterbody: N/A  |                       | Date/Time: 9/19/22      |
|---|-----------------------|-------------------------|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                       | Project ID :            |
| Site Name/Description: E002   |                       | SR Ripley II            |
| Site Location: Forested area near cotton field and site boundary                                |                       |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta      | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta     | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC | CE Antecedent F       | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda      | le                      |
| Soil Type(s) / Geology : Morganfield silt loam, occasionally flooded                            | Source: USDA We       | eb Soil Survey          |
| Surrounding Land Use : Forested, Agricultural (cotton)  |                       |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Absent                 | gy (select one & desc | cribe fully in Notes) : |
|   |                       |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |  |  |  |  |
|---|--|--|--|--|--|
| Secondary Indicator Score (if applicable) = 12.00         |  |  |  |  |  |
| Justification / Notes :                                   |  |  |  |  |  |
| Short, went into the woods and flows into to Stream 5.    |  |  |  |  |  |
| BH: 1-2 ft  |  |  |  |  |  |
| BW: 2ft   |  |  |  |  |  |
| Substrate: sand/silt                                      |  |  |  |  |  |
| WWC 2   |  |  |  |  |  |

| A. Geomorphology (Subtotal = 5.50                              | Absent | Weak | Moderate | Strong |         |
|--|--------|------|----------|--------|---------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2       |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1       |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0       |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0       |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0       |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b></b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0       |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0       |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0       |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 2       |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0       |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5     |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0       |

| <b>B.</b> Hydrology (Subtotal = 2.50                | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | NA  |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No = 0 |      | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 12.00   |   |
|--|---|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points | r |

| Notes : |  |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termessee Division of Water Resources, Vers   | ion 1.5 (i mable i onni)                   |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/19/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin                                 | Project ID :                               |
| Site Name/Description: E003   | SR Ripley II                               |
| Site Location: Forested area near cotton field and site boundary                      |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :     | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Forested, Agricultural (cotton)                                |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent       | y (select one & describe fully in Notes) : |
|   | 1  |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |   |
|---|---|
| Secondary Indicator Score (if applicable) = 14.00         |   |
| Justification / Notes :                                   | _ |
| Flows from field into Stream 2                            |   |
| BH: 2 ft  |   |
| BW: 2ft   |   |
| Substrate: silt   |   |
| WWC 3   |   |

| A. Geomorphology (Subtotal = 6.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 2          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 1.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | NA  |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0   |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 14.00   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



BH: 0-1 ft BW: 1-5 ft WWC 4

# Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Vers   | ion 1.5 (Fillable Form                    | )                          |                   |
|---|---|----------------------------|-------------------|
| Named Waterbody: N/A  |   | Date                       | e/Time: 9/19/22   |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |   | Proj                       | ject ID :         |
| Site Name/Description: E004   |   | SR I                       | Ripley II         |
| Site Location: In cotton field  |   |                            |                   |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See T                           | able 1                     | <br>              |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See T                          |                            |                   |
| Precinitation this Season vs. Normal:   | CE Antecedent                             |                            |                   |
| Watershed Size: 29,327.89   | County: Lauderda                          | ale                        |                   |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded & Memphis silt loam, 8 to 12 percent slopes, severely eroded, northern phase  | Source: USDA W                            | eb Sc                      | oil Survey        |
| Surrounding Land Use : Agricultural (cotton)  | I   |                            | · ·               |
| Degree of historical alteration to natural channel morphology & hydrolog Absent   | gy (select one & des                      | scribe 1                   | fully in Notes) : |
| Primary Field Indicators Obser  | ved                                       |                            |                   |
| Primary Indicators  |   | ОИ                         | YES               |
| Hydrologic feature exists solely due to a process discharge   |   | ✓                          | WWC               |
| 2. Defined bed and bank absent, vegetation composed of upland and F   |   | ✓                          | WWC               |
| <ol><li>Watercourse dry anytime during February through April 15th, under r<br/>precipitation / groundwater conditions</li></ol>  | normal N/A                                |                            | WWC               |
| <ol> <li>Daily flow and precipitation records showing feature only flows in director to rainfall</li> </ol>   | ect response [                            | <b>✓</b>                   | WWC               |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase  | month [                                   | <b>✓</b>                   | Stream            |
| 6. Presence of fish (except <i>Gambusia</i> )   | Ī   | <b>✓</b>                   | Stream            |
| 7. Presence of naturally occurring ground water table connection  |   | 7                          | Stream            |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local v   | vatershed                                 | ✓                          | Stream            |
| 9. Evidence watercourse has been used as a supply of drinking water   |   | ✓                          | Stream            |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further assessors may choose to score secondary indicator.  In the absence of a primary indicator, or other definitive evidence, coron page 2 of this sheet, and provide score | ors as supporting on the secondary below. | e <b>viden</b><br>ry indic | cator table       |
| Guidance for the interpretation and scoring of both the primary & se<br>TDEC-DWR Guidance For Making Hydrologic Determi   | inations, Version 1.5                     |                            | /ided in          |
| Overall Hydrologic Determination = WET WEATHER COI  | VVEYANCE                                  |                            |                   |
| Secondary Indicator Score (if applicable) = 13.50   |   |                            |                   |
| ustification / Notes :  |   |                            |                   |
| Flows from field into Stream 2  |   |                            |                   |

CN-1612 (Rev. 07/21) 1 of 2 RDA-2366

| A. Geomorphology (Subtotal = 7.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 1          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5        |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>7</b> 1 |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 2          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | NA  |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 1 | 3.50 |
|------------------|------|
|------------------|------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

### Notes:

| 11.Grade controls: Rock fill            |
|---|
| 21.Rooted plants in the thalweg: cotton |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Tollicoso Bivision of Water Recogness, Vere   | 1011 1:0 (1 mable 1 e1111)                 |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/19/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                               |
| Site Name/Description: E005   | SR Ripley II                               |
| Site Location: In cotton & corn fields  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC                   | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded & Memphis silt loam, 8 to 12 | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural (cotton & corn)   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent                                   | y (select one & describe fully in Notes) : |
|   | ·  |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 13.50         |  |
| Justification / Notes :                                   |  |
| Flows from corn field into Stream 2                       |  |
| BH: 0-1 ft  |  |
| BW: 1-5 ft  |  |
| WWC 5   |  |
|   |  |

| A. Geomorphology (Subtotal = 7.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 1          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5        |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>7</b> 1 |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 2          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | NA  |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 1 | 3.50 |
|------------------|------|
|------------------|------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

### Notes:

| 11.Grade controls: Rock fill            |
|---|
| 21.Rooted plants in the thalweg: cotton |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Torribodos Bivision of Water Resources, Vere  | ion no (i mable i onn) |                    |  |  |
|---|------------------------|--------------------|--|--|
| Named Waterbody: N/A  |                        | Date/Time: 9/19/22 |  |  |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :           |                    |  |  |
| Site Name/Description: E006   |                        | SR Ripley II       |  |  |
| Site Location: In cotton & corn fields  |                        |                    |  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta       | ble 1.             |  |  |
| Previous Rainfall (7-days) : 0.03"  | ble 1.                 |                    |  |  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :   | CE Antecedent F        | Precipitation Tool |  |  |
| Watershed Size: 29,327.89   | County: Lauderda       | le                 |  |  |
| Soil Type(s) / Geology: Memphis silt loam, 8 to 12 percent slopes, severely eroded, northern phase                        | Source: USDA We        | eb Soil Survey     |  |  |
| Surrounding Land Use : Agricultural (cotton & corn)   |                        |                    |  |  |
| Degree of historical alteration to natural channel morphology & hvdrology (select one & describe fully in Notes):  Absent |                        |                    |  |  |
|   | •                      | _                  |  |  |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 10.00         |  |
| Justification / Notes :                                   |  |
| Flows from corn field into WWC 5                          |  |
| WWC 6   |  |
|   |  |
|   |  |
|   |  |

| A. Geomorphology (Subtotal = 3.50                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 1   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | NA  |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 10.00  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes: |  |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Versi  | ion 1.5 (Fillable I | Form)        |                   |
|---|---------------------|--------------|-------------------|
| Named Waterbody: N/A  |                     | Date         | e/Time: 9/19/22   |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin                                 |                     | Proj         | ect ID :          |
| Site Name/Description: E007   | SR I                | Ripley II    |                   |
| Site Location: In cotton field  |                     |              |                   |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: Se        | ee Table 1   |                   |
| Previous Rainfall (7-days) : 0.03"  | Longitude: Se       | e Table 1    |                   |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :     | CE Anteced          | ent Preci    | pitation Tool     |
| Watershed Size: 29,327.89   | County: Laud        | lerdale      |                   |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USD         | A Web Sc     | oil Survey        |
| Surrounding Land Use : Agricultural (cotton)  |                     |              |                   |
| Degree of historical alteration to natural channel morphology & hydrolog Absent       | y (select one &     | & describe f | fully in Notes) : |
| Primary Field Indicators Obser  | ved                 |              |                   |
| Primary Indicators  |                     | NO           | YES               |

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 14.50         |  |
| Justification / Notes :                                   |  |
| Flows from cotton field into Stream 2. Highly incised.    |  |
| Bank Height: 1-5'   |  |
| Bank Width: 1-6'  |  |
| Substrate: silt   |  |
| WWC 7   |  |

| A. Geomorphology (Subtotal = 7.00                              | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3 |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1 |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0 |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0 |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0 |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0 |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1 |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0 |

| B. Hydrology (Subtotal = 1.50                       | Absent | Weak | Moderate | Strong |            |
|---|--------|------|----------|--------|------------|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0          |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | NA         |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5        |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | <b>7</b> 0 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0          |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0          |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 14.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Named Waterbody: N/A  |                             | Date/Time: 9/20/22      |
|---|-----------------------------|-------------------------|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                             | Project ID :            |
| Site Name/Description: E008   |                             | SR Ripley II            |
| Site Location: In cotton field  |                             |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | <sup>Latitude:</sup> See Ta | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta           | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC | CE Antecedent F             | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda            | le                      |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded           | Source: USDA We             | eb Soil Survey          |
| Surrounding Land Use : Agricultural (cotton)  |                             |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Absent                 | gy (select one & desc       | cribe fully in Notes) : |
|   | _                           |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |  |  |  |  |
|---|--|--|--|--|--|
| Secondary Indicator Score (if applicable) = 13.00         |  |  |  |  |  |
| Justification / Notes :                                   |  |  |  |  |  |
| Flows from offsite into Stream 5                          |  |  |  |  |  |
| Bank Height: 1-4'   |  |  |  |  |  |
| Bank Width: 1-2'  |  |  |  |  |  |
| Substrate: silt/sand                                      |  |  |  |  |  |
| WWC 8   |  |  |  |  |  |

| A. Geomorphology (Subtotal = 5.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 3.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | NA  |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 13.00  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| ***********   | Termessee Division of Water Nesourc   | Jes, veis | ion 1.5 (i illai | Jie i Oilli) |                         |
|---|---|-----------|------------------|--------------|-------------------------|
| Named Waterbody: N/A  |   |           |                  |              | Date/Time: 9/20/22      |
| Assessors/Affiliation: Benjan                                     | nin Burdette & Jake Irvin   |           |                  |              | Project ID :            |
| Site Name/Description: E009                                       |   |           |                  | SR Ripley II |                         |
| Site Location: In cotton field                                    |   |           |                  |              |                         |
| HUC (12 digit): Cane Creek  | Upper 080102080701  |           | Latitude:        | See Ta       | ble 1.                  |
| Previous Rainfall (7-days) : 0                                    | .03"  |           | Longitude        | See Ta       | ble 1.                  |
| Precipitation this Season vs. Source of recent & seasonal precip. | elevated  | USA       | CE Antec         | edent F      | Precipitation Tool      |
| Watershed Size: 29,327.89   |   |           | County: La       | auderda      | le                      |
| Soil Type(s) / Geology : Adler silt percent s                     | oam, 0 to 2 percent slopes, occasionally flooded; Loring silt loam, opes, severely eroded | 2 to 5    | Source: U        | SDA We       | eb Soil Survey          |
| Surrounding Land Use : Agri                                       | cultural (cotton)   |           |                  |              |                         |
| Degree of historical alteration                                   | n to natural channel morphology & l<br>Absent   | hvdrolog  | gy (select or    | ne & desc    | cribe fully in Notes) : |
|   |   | 0.1       |                  |              |                         |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |
|--|
| Secondary Indicator Score (if applicable) = <sub>18.50</sub>   |
| Justification / Notes :  |
| Flows into Stream 5, Erosional feature w/ OHWM and defined bed and bank. Not intermittent. Sure higher due to depth of incision. |
| Bank Height: 1-10'   |
| Bank Width: 2-8'   |
| Substrate: silt/clay   |
| WWC 9  |

| A. Geomorphology (Subtotal = 8.50                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| <b>B.</b> Hydrology (Subtotal = 4.00                | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = _ | 8.50   |
|------------------|--|
|                  | tions, Watercourse is a Wet Weather<br>ndary Indicator Score < 19 points |

| Notes: |  |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Vers  | ion 1.5 (Filiable Form)                    |
|--|--|
| Named Waterbody: N/A   | Date/Time: 9/20/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin                              | Project ID:                                |
| Site Name/Description: E010  | SR Ripley II                               |
| Site Location: In cotton field   |  |
| HUC (12 digit): Cane Creek Upper 080102080701                                      | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :  | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89  | County: Lauderdale                         |
| Soil Type(s) / Geology : Loring silt loam, 8 to 12 percent slopes, severely eroded | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural (cotton)                                       |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent    | gy (select one & describe fully in Notes): |
| Primary Field Indicators Obser   | ved  |

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 12.00         |  |
| Justification / Notes :                                   |  |
| Flows into to WWC 11, Erosional feature                   |  |
| Bank Height: 1-4'   |  |
| Bank Width: 0-1'  |  |
| Substrate: silt/mud                                       |  |
| WWC 10  |  |

| A. Geomorphology (Subtotal = 5.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 1          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No = 0 |      | Yes      | 0      |     |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 12.00 |
|----------------------|
|----------------------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

| Notes: |
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| 11. Grade controls: culvert |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



| Named Waterbody: N/A  | ion 1.5 (Fillable For | <del>- ´ı</del> |                  |  |  |
|---|-----------------------|-----------------|------------------|--|--|
| ·   |                       |                 | ect ID :         |  |  |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                       |                 |                  |  |  |
| Site Name/Description: E011   | SR F                  | Ripley II       |                  |  |  |
| Site Location: In cotton field  |                       |                 |                  |  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Table 1.              | •               |                  |  |  |
| Previous Rainfall (7-days): 0.03"   | Longitude: See        | Table 1.        |                  |  |  |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USAC   | CE Anteceden          | t Precip        | oitation Tool    |  |  |
| Watershed Size : 29,327.89 County: Lauderda   |                       |                 |                  |  |  |
| Soil Type(s) / Geology: Loring silt loam, 8 to 12 percent slopes, severely eroded; Loring silt loam, 2 to 5 percent Source: USDA We   |                       |                 | il Survey        |  |  |
| Surrounding Land Use : Agricultural (cotton)  |                       |                 |                  |  |  |
| Degree of historical alteration to natural channel morpholoav & hvdrology (select one & describe fully in Notes) : Severe   |                       |                 |                  |  |  |
| Primary Field Indicators Obser  | ved                   |                 |                  |  |  |
| Primary Indicators  |                       | NO              | YES              |  |  |
| Hydrologic feature exists solely due to a process discharge   |                       | <b>✓</b>        | WWC              |  |  |
| Defined bed and bank absent, vegetation composed of upland and FACU species   |                       |                 | WWC              |  |  |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  |                       |                 | WWC              |  |  |
| precipitation / groundwater conditions  | 18/73                 |                 |                  |  |  |
| <ul><li>precipitation / groundwater conditions</li><li>4. Daily flow and precipitation records showing feature only flows in director rainfall</li></ul>  |                       | <b>V</b>        | WWC              |  |  |
| 4. Daily flow and precipitation records showing feature only flows in dire  | ct response           |                 | WWC              |  |  |
| <ul> <li>4. Daily flow and precipitation records showing feature only flows in director rainfall</li> <li>5. Presence of multiple populations of obligate lotic organisms with ≥ 2</li> </ul>   | ct response           |                 |                  |  |  |
| <ul> <li>4. Daily flow and precipitation records showing feature only flows in director rainfall</li> <li>5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase</li> <li>6. Presence of fish (except <i>Gambusia</i>)</li> <li>7. Presence of naturally occurring ground water table connection</li> </ul> | ct response<br>month  |                 | Stream           |  |  |
| <ul> <li>4. Daily flow and precipitation records showing feature only flows in director rainfall</li> <li>5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase</li> <li>6. Presence of fish (except <i>Gambusia</i>)</li> </ul>   | ct response<br>month  | V               | Stream<br>Stream |  |  |

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 18.00         |  |
| Justification / Notes :                                   |  |
| Flows into to Stream 2                                    |  |
| R6  |  |
| WWC 11  |  |
|   |  |
|   |  |

| A. Geomorphology (Subtotal = 9.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>]</b> 1 |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 1 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No = 0 |      | Yes      | 0      |     |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 18.00  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Named Waterbody: N/A  | Date/Time: 9/20/22                          |
|---|---|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                                |
| Site Name/Description: E012   | SR Ripley II                                |
| Site Location: In corn field  | ·   |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                      |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                     |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC   | CE Antecedent Precipitation Tool            |
| Watershed Size: 29,327.89   | County: Lauderdale                          |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase; Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA Web Soil Survey                |
| Surrounding Land Use : Agricultural (corn)  |   |
| Degree of historical alteration to natural channel morphology & hydrolog Slight   | gy (select one & describe fully in Notes) : |
|   | _   |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 12.00         |  |
| Justification / Notes :                                   |  |
| Flows into to Stream 2                                    |  |
| Bank Height: 0-2 ft                                       |  |
| Bank width: 1-2 ft  |  |
| Substrate: silt/mud                                       |  |
| WWC 12  |  |

| A. Geomorphology (Subtotal = 5.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 1          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 12.00 |
|----------------------|
|----------------------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

| Notes: |
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| 11. Grade controls: culvert |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Torrilogge Bivision of Water Researces, Vere  | ion no (i mabio i omi)           |  |  |
|---|----------------------------------|--|--|
| Named Waterbody: N/A  | Date/Time: 9/20/22               |  |  |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                     |  |  |
| Site Name/Description: E013   | SR Ripley II                     |  |  |
| Site Location: In corn field  |                                  |  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.           |  |  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.          |  |  |
| Precipitation this Season vs. Normal : elevated USAC Source of recent & seasonal precip. data :   | CE Antecedent Precipitation Tool |  |  |
| Watershed Size: 29,327.89   | County: Lauderdale               |  |  |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase; Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA Web Soil Survey     |  |  |
| Surrounding Land Use : Agricultural (corn)  |                                  |  |  |
| Degree of historical alteration to natural channel morphology & hvdrology (select one & describe fully in Notes) : Slight   |                                  |  |  |
|   |                                  |  |  |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 9.50          |  |
| Justification / Notes :                                   |  |
| Flows into to Stream 2                                    |  |
| Bank Height: 1-2 ft                                       |  |
| Bank width: 2-4 ft  |  |
| Substrate: silt   |  |
| WWC 13  |  |

| A. Geomorphology (Subtotal = 5.50                              | Absent | Weak | Moderate | Strong |         |
|--|--------|------|----------|--------|---------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3       |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1       |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0       |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0       |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0       |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b></b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0       |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0       |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0       |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1       |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0       |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5     |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0       |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate | Strong | Τ   |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 2.00                    | Absent | Weak | Moderate | Strong |    |
|--|--------|------|----------|--------|----|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 1  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | ]1 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $9.50$  |
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| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Named Waterbody: N/A  | Date/Time: 9/20/22                         |
|---|--|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                               |
| Site Name/Description: E014   | SR Ripley II                               |
| Site Location: Runs from forested property border into corn field   |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :   | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology: Loring silt loam, 5 to 8 percent slopes, eroded; Memphis silt loam, 12 to 20 percent slopes, eroded; Memphis silt loam, 12 to 20 percent slopes, occasionally flooded | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Forested and Agricultural (corn)   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Severe   | gy (select one & describe fully in Notes): |
|   |  |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |  |  |  |  |
|--|--|--|--|--|
| Secondary Indicator Score (if applicable) = 15.50  |  |  |  |  |
| Justification / Notes :  |  |  |  |  |
| Flows into to Stream 2; R6 - Ephemeral JD; Heavy incised w/ significant vegetation in bottom - ragweed |  |  |  |  |
| Bank Height: 2-6 ft  |  |  |  |  |
| Bank width: 2-8 ft   |  |  |  |  |
| Substrate: silt  |  |  |  |  |
| WWC 14   |  |  |  |  |

| A. Geomorphology (Subtotal = 7.50                              | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | <b>1</b> |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0.5      |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0        |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| B. Hydrology (Subtotal = 4.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 15.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

|   | · ,                   |                         |
|---|-----------------------|-------------------------|
| Named Waterbody: N/A  | Date/Time: 9/20/22    |                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                       | Project ID :            |
| Site Name/Description: E015   |                       | SR Ripley II            |
| Site Location: Corn field   |                       |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta      | ıble 1.                 |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta     | ble 1.                  |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USAC     | CE Antecedent F       | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda      | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase | Source: USDA We       | eb Soil Survey          |
| Surrounding Land Use : Agricultural (corn)  |                       |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                     | gy (select one & desc | cribe fully in Notes) : |
|   |                       |                         |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 11.50         |  |
| Justification / Notes :                                   |  |
| Flows into to Stream 6                                    |  |
| Bank Height: 0-4 ft                                       |  |
| Bank width: 1-3 ft  |  |
| Substrate: silt loam                                      |  |
| WWC 15  |  |

| A. Geomorphology (Subtotal = 6.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| 1. Continuous bed and bank                                     | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0          |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | <b>7</b> 0 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 3.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 1 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 11.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termessee Division of Water Resources, Vers   | ion 1.5 (i illabic i onni)                 |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/20/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin                                 | Project ID :                               |
| Site Name/Description: E016   | SR Ripley II                               |
| Site Location: Forested area near property boundary                                   |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :     | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Forested   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent       | gy (select one & describe fully in Notes): |
| B : F: LIL I: ( O)  |  |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 17.50         |  |
| Justification / Notes :                                   |  |
| Flows into to Stream 7; Forested                          |  |
| Bank Height: 0-2 ft                                       |  |
| Bank width: 1-3 ft  |  |
| WWC 16  |  |
|   |  |

| A. Geomorphology (Subtotal = 9.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 1. Continuous bed and bank                                     | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0.5 |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0.5 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points =                          | 17.50 |  |
|---|-------|--|
| Under Normal Cond<br>Conveyance if Seco | *     |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Torribodos Bivision of Water Resources, Vere  | ion no (i mable i onni) |                         |
|---|-------------------------|-------------------------|
| Named Waterbody: N/A  |                         | Date/Time: 9/20/22      |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin                                 |                         | Project ID :            |
| Site Name/Description: E017   |                         | SR Ripley II            |
| Site Location: Cornfield near Stream 6  |                         |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta        | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta       | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :     | CE Antecedent F         | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda        | le                      |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA We         | eb Soil Survey          |
| Surrounding Land Use : Forested; Agricultural (corn)                                  |                         |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight       | gy (select one & desc   | cribe fully in Notes) : |
|   |                         |                         |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 8.50          |  |
| Justification / Notes :                                   |  |
| Heavily vegetated cornfield                               |  |
| Bank Height: 0-2 ft                                       |  |
| Bank width: 2-4 ft  |  |
| WWC 17  |  |
|   |  |

| A. Geomorphology (Subtotal = 4.50                              | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | <b>1</b> |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0        |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0        |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| <b>B.</b> Hydrology (Subtotal = 2.00                | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 2.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 1 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 1 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 8.50  |
|----------------|---|
|                | ditions, Watercourse is a Wet Weather<br>ondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| *   | ,  |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/20/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                               |
| Site Name/Description: E018   | SR Ripley II                               |
| Site Location: Roadside ditch   |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : elevated USAG Source of recent & seasonal precip. data : | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology : see notes  | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural (corn)  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Severe                 | gy (select one & describe fully in Notes): |
|   |  |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |  |  |  |  |
|--|--|--|--|--|
| Secondary Indicator Score (if applicable) = 14.00  |  |  |  |  |
| Justification / Notes: WWC 18  |  |  |  |  |
| Flows into Stream 2  |  |  |  |  |
| Bank Height: 0-1 ft  |  |  |  |  |
| Bank width: 1-2 ft   |  |  |  |  |
| Substrate: silt/gravel   |  |  |  |  |
| Soils: Adler silt loam, 0 to 2 percent slopes, occasionally flooded; Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase |  |  |  |  |

| A. Geomorphology (Subtotal = 6.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1.5 |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $1$ | 4.00 |
|--------------------|------|
|--------------------|------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

| 11.Grade controls: culvert |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| *   | ,  |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/20/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                               |
| Site Name/Description: E019   | SR Ripley II                               |
| Site Location: Roadside ditch   |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : elevated USAG Source of recent & seasonal precip. data : | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology : see notes  | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural (corn)  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Severe                 | gy (select one & describe fully in Notes): |
|   |  |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |
|--|
| Secondary Indicator Score (if applicable) = 13.00  |
| Justification / Notes :  |
| Flows into Stream 2  |
| Bank Height: 0-1 ft  |
| Bank width: 1-2 ft   |
| WWC 19   |
| Soils: Adler silt loam, 0 to 2 percent slopes, occasionally flooded; Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase |

| A. Geomorphology (Subtotal = 5.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.00                       | Absent           | Weak | Moderate | Strong |     |
|---|------------------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0                | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0                | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5              | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0                | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0                | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No = 0 Yes = 1.5 |      | = 1.5    | 0      |     |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 13.00 |
|----------------------|
|----------------------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

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| 11.Grade controls: culvert |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Torribodod Biviolori di Vvator Nocodi cod, Vord   | non no (i mable i omi)                     |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/20/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                               |
| Site Name/Description: E020   | SR Ripley II                               |
| Site Location: Cotton field   |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : elevated USAG Source of recent & seasonal precip. data : | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology : see notes  | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural (corn)  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Severe                 | gy (select one & describe fully in Notes): |
|   | · · · · · · · · · · · · · · · · · · ·      |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 12.00         |  |
| Justification / Notes :                                   |  |
| Flows out into field                                      |  |
| Bank Height: 0-1 ft                                       |  |
| Bank width: 2-6 ft  |  |
| Substrate: silt/mud/gravel                                |  |
| WWC 20  |  |

| A. Geomorphology (Subtotal = 5.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0.5        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0.5        |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent           | Weak | Moderate | Strong |     |
|---|------------------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0                | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0                | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5              | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0                | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0                | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No = 0 Yes = 1.5 |      | 0        |        |     |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 12.00   |   |
|--|---|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points | r |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Version  | on 1.5 (Fillable Form)                     |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/21/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                               |
| Site Name/Description: E021   | SR Ripley II                               |
| Site Location: Cornfield  | •  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USAC | E Antecedent Precipitation Tool            |
| Watershed Size : 29,327.89  | County: Lauderdale                         |
| Soil Type(s) / Geology : Center silt loam, 0 to 3 percent slopes                                | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural (corn)  |  |
| Degree of historical alteration to natural channel morphology & hydrology Absent                | y (select one & describe fully in Notes) : |
| Primary Field Indicators Observ   | ved  |

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |  |  |  |  |
|---|--|--|--|--|--|
| Secondary Indicator Score (if applicable) = 10.50         |  |  |  |  |  |
| Justification / Notes :                                   |  |  |  |  |  |
| Flows into S8   |  |  |  |  |  |
| Bank Height: 0-1 ft                                       |  |  |  |  |  |
| Bank width: 1-2 ft  |  |  |  |  |  |
| Substrate: silt   |  |  |  |  |  |
| WWC 21  |  |  |  |  |  |

| A. Geomorphology (Subtotal = 4.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| <b>B. Hydrology</b> (Subtotal = 2.00                | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 10.50  |  |
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|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes: |  |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



| Tennessee Division of Water Resources, Versi  |  | m)         |                  |
|---|--|------------|------------------|
| Named Waterbody: N/A  |  | Date       | /Time: 9/21/22   |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |  | Proje      | ect ID :         |
| Site Name/Description: E022   |  | SR F       | Ripley II        |
| Site Location: Cornfield  |  |            |                  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See                              | Table 1.   |                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See                             | Table 1.   |                  |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USAC   | E Anteceden                                |            |                  |
| Watershed Size: 29,327.89   | County: Lauder                             | dale       |                  |
| Soil Type(s) / Geology: Memphis silt loam, 8 to 12 percent slopes, severely eroded, northern phase; Adler silt loam, 0 to 2 percent slopes, occasionally flooded  | Source: USDA                               | Web Soi    | il Survey        |
| Surrounding Land Use : Agricultural (corn)  |  |            |                  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent   | y (select one & d                          | escribe fu | ully in Notes):  |
| Primary Field Indicators Obser  | ved  |            |                  |
| Primary Indicators  |  | NO         | YES              |
| Hydrologic feature exists solely due to a process discharge   |  | <b>V</b>   | WWC              |
| 2. Defined bed and bank absent, vegetation composed of upland and F   | ACU species                                | <b>✓</b>   | WWC              |
| 3. Watercourse dry anytime during February through April 15th, under n  | ormal N/A                                  |            | WWC              |
| precipitation / groundwater conditions  | ·  |            | ******           |
| <ol> <li>Daily flow and precipitation records showing feature only flows in dire<br/>to rainfall</li> </ol>   | ·  | <b>✓</b>   | WWC              |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 r<br/>aquatic phase</li> </ol>   | month                                      | <b>V</b>   | Stream           |
| 6. Presence of fish (except Gambusia)   |  | <b>V</b>   | Stream           |
| 7. Presence of naturally occurring ground water table connection  |  | <b>V</b>   | Stream           |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local w   | atershed                                   | <b>✓</b>   | Stream           |
| 9. Evidence watercourse has been used as a supply of drinking water   |  | ✓          | Stream           |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further is assessors may choose to score secondary indicator.  In the absence of a primary indicator, or other definitive evidence, conton on page 2 of this sheet, and provide score.  Guidance for the interpretation and scoring of both the primary & se | rs as supporting applete the second below. | g evidend  | e.<br>ator table |
| TDEC-DWR Guidance For Making Hydrologic Determin  | nations, Version                           |            |                  |

Secondary Indicator Score (if applicable) = 11.00**Justification / Notes:** Flows into S8 Bank Height: 1-3 ft Bank width: 0-1 ft Substrate: silt/sand WWC 22

| A. Geomorphology (Subtotal = 4.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 11.00   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes: |  |  |  |  |
|--------|--|--|--|--|
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termessee Division of Water Nesdurees, vers  | Sion 1.0 (i illable i onn)                 |
|--|--|
| Named Waterbody: N/A   | Date/Time: 9/21/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  | Project ID :                               |
| Site Name/Description: E023  | SR Ripley II                               |
| Site Location: Cornfield   | ·  |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USA   | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89  | County: Lauderdale                         |
| Soil Type(s) / Geology: Memphis silt loam, 8 to 12 percent slopes, severely eroded, northern phase; Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural (corn)   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent  | gy (select one & describe fully in Notes): |
|  | _  |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |  |  |  |  |  |
|---|--|--|--|--|--|--|
| Secondary Indicator Score (if applicable) = 11.50         |  |  |  |  |  |  |
| Justification / Notes :                                   |  |  |  |  |  |  |
| Flows into culvert connected to S8                        |  |  |  |  |  |  |
| Bank Height: 0-2 ft                                       |  |  |  |  |  |  |
| Bank width: 1-6 ft  |  |  |  |  |  |  |
| Substrate: silt/mud                                       |  |  |  |  |  |  |
| WWC 23  |  |  |  |  |  |  |

| A. Geomorphology (Subtotal = 5.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 11.50 |
|----------------|-------|
|----------------|-------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

| Notes |  |
|-------|--|
|       |  |

| 11.Grade controls: culvert |
|----------------------------|
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|                            |
|                            |

<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termessee Division of Water Resources, Vers  | ion 1.5 (i illabic i onni)                 |
|--|--|
| Named Waterbody: N/A   | Date/Time: 9/21/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  | Project ID :                               |
| Site Name/Description: E024  | SR Ripley II                               |
| Site Location: Dirt roadside ditch in corn field   |  |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :  | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89  | County: Lauderdale                         |
| Soil Type(s) / Geology: Memphis silt loam, 8 to 12 percent slopes, severely eroded, northern phase; Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural (corn)   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Moderate  | y (select one & describe fully in Notes) : |
|  | •  |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 11.00         |  |
| Justification / Notes :                                   |  |
| Top of S9   |  |
| Bank Height: 2 ft   |  |
| Bank width: 2 ft  |  |
| WWC 24  |  |
|   |  |

| A. Geomorphology (Subtotal = 6.00                              | Absent | Weak | Moderate | Strong |         |
|--|--------|------|----------|--------|---------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2       |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1       |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0       |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0       |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0       |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b></b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0       |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0       |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0       |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 2       |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5     |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5     |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0       |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate | Strong | Τ   |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 3.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 1 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 11.00 |
|----------------|-------|
|----------------|-------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

| 11.Grade controls: rip-rap |  |
|----------------------------|--|
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Telliessee Di   | vision of water resources, vers | ion 1.5 (Filiable Form) |                        |  |
|---|---------------------------------|-------------------------|------------------------|--|
| Named Waterbody: N/A  |                                 |                         | Date/Time: 9/21/22     |  |
| Assessors/Affiliation: Benjamin Burdette  | & Jake Irvin                    |                         | Project ID :           |  |
| Site Name/Description: E025   |                                 |                         | SR Ripley II           |  |
| Site Location: Corn field   |                                 |                         |                        |  |
| HUC (12 digit): Cane Creek Upper 080102080701 Latitude: See Ta  |                                 |                         | ble 1.                 |  |
| Previous Rainfall (7-days) : 0.03" Longitude: See Ta  |                                 |                         | ble 1.                 |  |
| Precipitation this Season vs. Normal: Source of recent & seasonal precip. data: elevated USACE Antecedent Precipitatio          |                                 |                         | Precipitation Tool     |  |
| Watershed Size : 29,327.89  |                                 | County: Lauderda        | le                     |  |
| Soil Type(s) / Geology: Memphis silt Ioam, 8 to 12 percent slopes, severely eroded, northern phase; Adler silt  Source: USDA We |                                 | eb Soil Survey          |                        |  |
| Surrounding Land Use : Agricultural (corn)  |                                 |                         |                        |  |
| Degree of historical alteration to natural ch<br>Moder  |                                 | gy (select one & desc   | cribe fully in Notes): |  |
| Primary   | Field Indicators Obser          | ved                     |                        |  |

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 11.00         |  |
| Justification / Notes :                                   |  |
| Flows into WWC24  |  |
| Bank Height: 0-1 ft                                       |  |
| Bank width: 2-3 ft  |  |
| WWC 25  |  |
|   |  |

| A. Geomorphology (Subtotal = 4.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 11.00   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes: |  |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Named Waterbody: N/A  |                       | Date/Time: 9/21/22      |
|---|-----------------------|-------------------------|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                       | Project ID :            |
| Site Name/Description: E026   |                       | SR Ripley II            |
| Site Location: Corn field   |                       |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta      | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta     | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :                   | CE Antecedent F       | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda      | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase | Source: USDA We       | eb Soil Survey          |
| Surrounding Land Use : Agricultural (corn)  |                       |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                     | gy (select one & desc | cribe fully in Notes) : |
|   |                       |                         |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 11.50         |  |
| Justification / Notes :                                   |  |
| Connects to S9  |  |
| Bank Height: 0-1 ft                                       |  |
| Bank width: 2-3 ft  |  |
| WWC 26  |  |
|   |  |

| A. Geomorphology (Subtotal = 5.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 11.50 |
|----------------|-------|
|----------------|-------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

| Notes | : |
|-------|---|
|       |   |

| 11.Grade controls: culvert |
|----------------------------|
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



| Hydrologic Determination Field D Tennessee Division of Water Resources, Vers   |                      | )         |                  |
|--|----------------------|-----------|------------------|
| Named Waterbody: N/A   |                      | Date      | /Time: 9/21/22   |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  |                      | Proje     | ect ID :         |
| Site Name/Description: E027  |                      | SR R      | Ripley II        |
| Site Location: Corn field  |                      | ı         |                  |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See T      | able 1.   |                  |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Ta    | able 1.   |                  |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USAC  | CE Antecedent        |           |                  |
| Watershed Size: 29,327.89  | County: Lauderda     | ale       |                  |
| Soil Type(s) / Geology: Loring silt loam, 5 to 8 percent slopes, severely eroded; Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA W       | eb Soi    | I Survey         |
| Surrounding Land Use : Agricultural (corn)   |                      |           |                  |
| Degree of historical alteration to natural channel morphology & hydrolog Slight  | gy (select one & des | scribe fu | ully in Notes) : |
| Primary Field Indicators Obser   | ved                  |           |                  |
| Primary Indicators   | 1                    | 10        | YES              |
| Hydrologic feature exists solely due to a process discharge  |                      | <b>✓</b>  | WWC              |
| 2. Defined bed and bank absent, vegetation composed of upland and F  |                      | <b>✓</b>  | WWC              |
| 3. Watercourse dry anytime during February through April 15th, under r precipitation / groundwater conditions                                  | normal N/A           |           | WWC              |
| Daily flow and precipitation records showing feature only flows in director rainfall   | ect response         | <u> </u>  | WWC              |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase   | month [              | <b>V</b>  | Stream           |
| 6. Presence of fish (except Gambusia)  |                      | <b>✓</b>  | Stream           |
| 7. Presence of naturally occurring ground water table connection   |                      | <b>✓</b>  | Stream           |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local w  | vatershed            | <b>✓</b>  | Stream           |
| 9. Evidence watercourse has been used as a supply of drinking water  |                      | <b>✓</b>  | Stream           |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further assessors may choose to score secondary indicator                                 | rs as supporting e   | videnc    | ee.              |
| In the absence of a primary indicator, or other definitive evidence, cor   | ubiere rue seconda   | ту ппанса | ator table       |

on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |   |
|---|---|
| Secondary Indicator Score (if applicable) = 12.00         |   |
| Justification / Notes :                                   |   |
| Flows into S10  | · |
| Bank Height: 0-1 ft                                       |   |
| Bank width: 1-3 ft  |   |
| Substrate: silt/mud                                       |   |
| WWC 27  |   |

| A. Geomorphology (Subtotal = 5.50                              | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | <b>1</b> |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>1</b> |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0        |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 12.00   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Torringged Biviolot of Water Recognises  | o, version ne (i mable i entr)                   |
|--|--|
| Named Waterbody: N/A   | Date/Time: 9/21/22                               |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  | Project ID :                                     |
| Site Name/Description: E028  | SR Ripley II                                     |
| Site Location: Corn field  |  |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Table 1.                           |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Table 1.                          |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :  | JSACE Antecedent Precipitation Tool              |
| Watershed Size: 29,327.89  | County: Lauderdale                               |
| Soil Type(s) / Geology: Loring silt loam, 5 to 8 percent slopes, severely eroded; Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA Web Soil Survey                     |
| Surrounding Land Use : Agricultural (corn); Forest   |  |
| Degree of historical alteration to natural channel morphology & hy<br>Severe   | drology (select one & describe fully in Notes) : |
|  |  |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 18.00         |  |
| Justification / Notes: WWC 28                             |  |
| Forested; Flows into S10; property line ditch             |  |
| Bank Height: 1-4 ft                                       |  |
| Bank width: 2-6 ft  |  |
| Substrate: silt/sand/gravel                               |  |
| R6  |  |

| A. Geomorphology (Subtotal = 8.00                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | ]1         |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>]</b> 1 |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 1 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | <b>7</b> 0 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 4.00                       | Absent | Weak | Moderate  | Strong |     |
|---|--------|------|-----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2         | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2         | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5       | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes = 1.5 |        | 1.5 |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 18.00  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

|   | ,   |
|---|---|
| Named Waterbody: N/A  | Date/Time: 9/21/22                          |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                                |
| Site Name/Description: E029   | SR Ripley II                                |
| Site Location: Flows from forested area into agricultural field                                     | ·   |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                      |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                     |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC     | CE Antecedent Precipitation Too             |
| Watershed Size: 29,327.89   | County: Lauderdale                          |
| Soil Type(s) / Geology: Memphis silt loam, 2 to 5 percent slopes, moderately eroded, northern phase | Source: USDA Web Soil Survey                |
| Surrounding Land Use : Agricultural; Forest   |   |
| Degree of historical alteration to natural channel morphology & hydrolog Severe                     | gy (select one & describe fully in Notes) : |
|   |   |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |  |  |  |
|---|--|--|--|--|
| Secondary Indicator Score (if applicable) = 11.00         |  |  |  |  |
| Justification / Notes :                                   |  |  |  |  |
| Starts at manmade berm and drops in                       |  |  |  |  |
| Bank Height: 1-2 ft                                       |  |  |  |  |
| Bank width: 2-3 ft  |  |  |  |  |
| Substrate: silt/sand                                      |  |  |  |  |
| WWC 29  |  |  |  |  |

| A. Geomorphology (Subtotal = 6.00                              | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2 |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0 |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1 |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0 |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0 |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0 |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1 |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0 |

| B. Hydrology (Subtotal = 1.00                       | Absent | Weak | Moderate | Strong |   |
|---|--------|------|----------|--------|---|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0 |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0 |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0 |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 11.00   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Named Waterbody: N/A  |                       | Date/Time: 9/21/22      |
|---|-----------------------|-------------------------|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :          |                         |
| Site Name/Description: E030   |                       | SR Ripley II            |
| Site Location: Flows from forested area into agricultural field                                 |                       |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta      | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | ble 1.                |                         |
| Precipitation this Season vs. Normal : elevated USAC Source of recent & seasonal precip. data : | CE Antecedent F       | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda      | le                      |
| Soil Type(s) / Geology : Loring silt loam, 5 to 8 percent slopes, severely eroded               | Source: USDA We       | eb Soil Survey          |
| Surrounding Land Use : Agricultural; Forest   |                       |                         |
| Degree of historical alteration to natural channel morphology & hydrolog<br>Severe              | gy (select one & desc | cribe fully in Notes) : |
|   | _                     |                         |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| · · · · · · · · · · · · · · · · · · · |
|---------------------------------------|
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| A. Geomorphology (Subtotal = 7.00                              | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5      |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0        |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>1</b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 13.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



**WWC 31** 

## Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Total cood Biviolation of Water Recognition, Vere   | ien ite (i masie i enni)                    |
|---|---|
| Named Waterbody: N/A  | Date/Time: 9/21/22                          |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                                |
| Site Name/Description: E031   | SR Ripley II                                |
| Site Location: Corn field   | ·   |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                      |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                     |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC | CE Antecedent Precipitation Tool            |
| Watershed Size: 29,327.89   | County: Lauderdale                          |
| Soil Type(s) / Geology : Loring silt loam, 5 to 8 percent slopes, severely eroded               | Source: USDA Web Soil Survey                |
| Surrounding Land Use : Agricultural; Forest   |   |
| Degree of historical alteration to natural channel morphology & hydrolog Severe                 | gy (select one & describe fully in Notes) : |
|   |   |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE   |
|---|
| Secondary Indicator Score (if applicable) = 15.00   |
| Justification / Notes :   |
| Terraced with risers at each collection point to drop into next level. Only water was in a hole dug in one spot near a basin; Flows into W8 and OW1 |
| Bank Height: 0-1 ft   |
| Bank width: 1-6 ft  |
| Substrate: silt/mud   |

CN-1612 (Rev. 07/21) 1 of 2 RDA-2366

| A. Geomorphology (Subtotal = 7.00                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 1          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 1          |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 1          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | <b>]</b> 1 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 3.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 1   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.50                    | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2   |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2   |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0   |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0   |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0   |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0   |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0   |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0   |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points =                          | 15.00 |  |
|---|-------|--|
| Under Normal Cond<br>Conveyance if Seco | •     |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Named Waterbody: N/A  |                       | Date/Time: 9/21/22     |
|---|-----------------------|------------------------|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                       | Project ID :           |
| Site Name/Description: E032   |                       | SR Ripley II           |
| Site Location: Flows from corn field into forested area   |                       |                        |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Tal     | ble 1.                 |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Tal    | ble 1.                 |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USA0 | CE Antecedent P       | recipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderdal     | е                      |
| Soil Type(s) / Geology : see notes  | Source: USDA We       | b Soil Survey          |
| Surrounding Land Use : Agricultural (corn); Forest  |                       |                        |
| Degree of historical alteration to natural channel morphology & hydrolog Severe                 | gy (select one & desc | ribe fully in Notes) : |
|   |                       |                        |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |
|--|
| Secondary Indicator Score (if applicable) = <sub>12.00</sub>   |
| Justification / Notes: WWC 32  |
| Ends at downspout; flows into S11  |
| Bank Height: 0-1 ft  |
| Bank width: 1-4 ft   |
| Soils: Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase; Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase; |
| Memphis silt loam, 20 to 40 percent slopes, northern phase   |

| A. Geomorphology (Subtotal = 5.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 1   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 2   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 3.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0.5 |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 12.00 |
|----------------------|
|----------------------|

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

#### Notes:

| 11.Grade controls: culvert                                       |
|--|
| 15.Water in channel and >48 hours since sig. rain: water in hole |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Named Waterbody: N/A  |                       | Date/Time: 9/21/22      |
|---|-----------------------|-------------------------|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                       | Project ID :            |
| Site Name/Description: E033   |                       | SR Ripley II            |
| Site Location: Flows from corn field into forested area   |                       |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta      | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta     | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC | CE Antecedent F       | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda      | le                      |
| Soil Type(s) / Geology : Memphis silt loam, 20 to 40 percent slopes, northern phase             | Source: USDA We       | eb Soil Survey          |
| Surrounding Land Use : Agricultural (corn); Forest  |                       |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Severe                 | gy (select one & desc | cribe fully in Notes) : |
|   |                       |                         |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 15.50         |  |
| Justification / Notes :                                   |  |
| Flows into S11  |  |
| Bank Height: 0-2 ft                                       |  |
| Bank width: 2-4 ft  |  |
| Substrate: silt/mud                                       |  |
| WWC 33  |  |

| A. Geomorphology (Subtotal = 7.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5        |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 3          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate | Strong | Τ   |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

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| tes: rge headcuts |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Total cool of training the second of training training to the second of training tra | ion no (i mable i cimi) |                         |
|--|-------------------------|-------------------------|
| Named Waterbody: N/A   |                         | Date/Time: 9/21/22      |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  |                         | Project ID :            |
| Site Name/Description: E034  | SR Ripley II            |                         |
| Site Location: Flows into W9; Top at property boundary; Forested   | area                    |                         |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Ta        | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"   | ble 1.                  |                         |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC  | CE Antecedent F         | Precipitation Tool      |
| Watershed Size: 29,327.89  | County: Lauderda        | le                      |
| Soil Type(s) / Geology : Memphis silt loam, 20 to 40 percent slopes, northern phase  | Source: USDA We         | eb Soil Survey          |
| Surrounding Land Use : Agricultural (corn); Forest; Easement   |                         |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Moderate  | gy (select one & desc   | cribe fully in Notes) : |
|  |                         |                         |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 15.50         |  |
| Justification / Notes :                                   |  |
| Flows from property boundary into W9                      |  |
| Bank Height: 0-2 ft                                       |  |
| Bank width: 1-6 ft  |  |
| Substrate: silt/mud                                       |  |
| WWC 34  |  |

| A. Geomorphology (Subtotal = 6.50                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 1. Continuous bed and bank                                     | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0.5 |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 3.00                       | Absent | Weak | Moderate | Strong |   |
|---|--------|------|----------|--------|---|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0 |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0 |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 1 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0 |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 15.50   |
|----------------|---|
|                | litions, Watercourse is a Wet Weather<br>andary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Torribodod Bividion of Water Recognose, Voice  | son no (masio rom)                          |
|--|---|
| Named Waterbody: N/A   | Date/Time: 9/21/22                          |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  | Project ID:                                 |
| Site Name/Description: E035  | SR Ripley II                                |
| Site Location: Cornfield; Forested area northeastern portion of Sit  | te  |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Table 1.                      |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Table 1.                     |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USA   | CE Antecedent Precipitation Tool            |
| Watershed Size: 29,327.89  | County: Lauderdale                          |
| Soil Type(s) / Geology: Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase; Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase | Source: USDA Web Soil Survey                |
| Surrounding Land Use : Agricultural (corn); Forest   |   |
| Degree of historical alteration to natural channel morphology & hydrolog Slight  | gy (select one & describe fully in Notes) : |
|  |   |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 13.00         |  |
| Justification / Notes :                                   |  |
| Flows into S12  |  |
| Bank Height: 0-2 ft                                       |  |
| Bank width: 1-4 ft  |  |
| Substrate: silt   |  |
| WWC 35  |  |

| A. Geomorphology (Subtotal = 6.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | ]1         |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>]</b> 1 |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b></b>    |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | <b>7</b> 0 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | <b>]</b> 1 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 1   |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points =                          | 13.00 |  |
|---|-------|--|
| Under Normal Cond<br>Conveyance if Seco | *     |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termessee Division of Water Resources, Vers  | ion 1.5 (i mable i onni) |                         |
|--|--------------------------|-------------------------|
| Named Waterbody: N/A   |                          | Date/Time: 9/21/22      |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  | Project ID :             |                         |
| Site Name/Description: E036  |                          | SR Ripley II            |
| Site Location: Cornfield; Forested area northeastern portion of Sit  | е                        |                         |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Ta         | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"   | ble 1.                   |                         |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :  | CE Antecedent F          | Precipitation Tool      |
| Watershed Size: 29,327.89  | County: Lauderda         | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase; Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase | Source: USDA We          | eb Soil Survey          |
| Surrounding Land Use : Agricultural (corn); Forest   |                          |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight  | y (select one & desc     | cribe fully in Notes) : |
| B ' F'   | 1                        |                         |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |          |
|---|----------|
| Secondary Indicator Score (if applicable) = 11.50         |          |
| Justification / Notes :                                   |          |
| Flows into S12  | <u> </u> |
| Bank Height: 0-2 ft                                       |          |
| Bank width: 1-4 ft  |          |
| WWC 36  |          |
|   |          |

| A. Geomorphology (Subtotal = 5.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 11.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



| Tennessee Division of Water Resources, Vers  | ata Sheet<br>ion 1.5 (Fillable F | orm)        |                  |
|--|----------------------------------|-------------|------------------|
| Named Waterbody: N/A   |                                  |             | /Time: 9/21/22   |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  |                                  | Proje       | ect ID:          |
| Site Name/Description: E037  |                                  | SR F        | Ripley II        |
| Site Location: Roadside ditch  |                                  | •           |                  |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See                    | e Table 1.  |                  |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See                   | e Table 1.  |                  |
| Precipitation this Season vs. Normal : elevated USAC USAC  | CE Antecede                      | nt Precip   | oitation Tool    |
| Watershed Size: 29,327.89  | County: Laude                    | erdale      |                  |
| $Soil\ Type(s)\ /\ Geology\ : {\it Memphis\ silt\ loam,\ 5\ to\ 8\ percent\ slopes,\ moderately\ eroded,\ northern\ phase}$                        | Source: USDA                     | Web Soi     | I Survey         |
| Surrounding Land Use : Agricultural (corn); Forest   |                                  |             |                  |
| Degree of historical alteration to natural channel morpholoav & hvdrolog Severe  | y (select one &                  | describe fu | ully in Notes) : |
| Primary Field Indicators Obser   | ved                              |             |                  |
| Primary Indicators   |                                  | NO          | YES              |
| Hydrologic feature exists solely due to a process discharge  |                                  | <b>✓</b>    | WWC              |
| 2. Defined bed and bank absent, vegetation composed of upland and F  | ·                                | <b>✓</b>    | WWC              |
| 3. Watercourse dry anytime during February through April 15th, under r precipitation / groundwater conditions                                      | ormal N/A                        |             | WWC              |
|  |                                  |             |                  |
| <ol> <li>Daily flow and precipitation records showing feature only flows in dire<br/>to rainfall</li> </ol>  | ct response                      | <b>✓</b>    | WWC              |
|  | -                                | ✓<br>✓      | WWC<br>Stream    |
| to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2  | -                                |             |                  |
| to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase  | -                                | <u></u> ✓   | Stream           |
| to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase  6. Presence of fish (except <i>Gambusia</i> ) | month                            | V           | Stream<br>Stream |

on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 7.50          |  |
| Justification / Notes :                                   |  |
| _WWC 37   |  |
| Bank Height: 0-2 ft                                       |  |
| Bank width: 1-3 ft  |  |
|   |  |
|   |  |

| A. Geomorphology (Subtotal = 3.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5        |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 2.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 1 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 1 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 7.50  Under Normal Conditions, Watercourse is a Wet Weather |   |
|--|---|
| Conveyance if Secondary Indicator Score < 19 points                        |   |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Tellilessee Division of   | ater resources, version 1.5 (Finable Form)                   |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/22/22   |
| Assessors/Affiliation: Benjamin Burdette & Jake                                 |  |
| Site Name/Description: E038   | SR Ripley II   |
| Site Location: Soybean field  |  |
| HUC (12 digit): Cane Creek Upper 080102080                                      | 1 Latitude: See Table 1.                                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                                      |
| Precipitation this Season vs. Normal: Source of recent & seasonal precip. data: | USACE Antecedent Precipitation Tool                          |
| Watershed Size: 29,327.89   | County: Lauderdale   |
| Soil Type(s) / Geology: Memphis silt loam, 8 to 12 percent slopes,              | erely eroded, northern phase Source: USDA Web Soil Survey    |
| Surrounding Land Use : Agricultural   |  |
| Degree of historical alteration to natural channel n                            | rpholoav & hvdrology (select one & describe fully in Notes): |
| Primary Field   | dicators Observed  |

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 9.00          |  |
| Justification / Notes :                                   |  |
| Flows to W10  |  |
| Bank Height: 0-1 ft                                       |  |
| Bank width: 1-2 ft  |  |
| WWC 38  |  |
|   |  |

| A. Geomorphology (Subtotal = 3.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate  | Strong | Τ   |
|---|--------|------|-----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2         | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2         | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5       | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes = 1.5 |        | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 9.00  |
|----------------|---|
|                | ditions, Watercourse is a Wet Weather<br>andary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Total cood Biviolation of Water Recognition, Vere  | ien ite (i illasie i enni)                 |
|--|--|
| Named Waterbody: N/A   | Date/Time: 9/22/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  | Project ID :                               |
| Site Name/Description: E039  | SR Ripley II                               |
| Site Location: Soybean field   |  |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC    | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89  | County: Lauderdale                         |
| Soil Type(s) / Geology: Memphis silt loam, 8 to 12 percent slopes, severely eroded, northern phase | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                    | gy (select one & describe fully in Notes): |
|  | •  |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase                       | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 10.00         |  |
| Justification / Notes :                                   |  |
| Flows to W10  |  |
| Bank Height: 0-1 ft                                       |  |
| Bank width: 1-2 ft  |  |
| WWC 39  |  |
|   |  |

| A. Geomorphology (Subtotal = 3.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 10.00   |
|----------------|---|
|                | itions, Watercourse is a Wet Weather<br>ndary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

|   | · · · · · · · · · · · · · · · · · · · |                         |
|---|---------------------------------------|-------------------------|
| Named Waterbody: N/A  |                                       | Date/Time: 9/22/22      |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                                       | Project ID :            |
| Site Name/Description: E040   | SR Ripley II                          |                         |
| Site Location: Soybean field; property line ditch   |                                       |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta                      | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta                     | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :                   | CE Antecedent F                       | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda                      | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase | Source: USDA We                       | eb Soil Survey          |
| Surrounding Land Use : Agricultural   |                                       |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                     | gy (select one & desc                 | cribe fully in Notes) : |
|   |                                       |                         |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |          |
|---|----------|
| Secondary Indicator Score (if applicable) = 14.00         |          |
| Justification / Notes :                                   |          |
| WWC 40  | <u> </u> |
| Bank Height: 0-1 ft                                       |          |
| Bank width: 1-3 ft  |          |
| Substrate: silt/mud                                       |          |
|   |          |

| A. Geomorphology (Subtotal = 6.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 2   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| <b>B.</b> Hydrology (Subtotal = 2.00                | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 14.00   |
|----------------|---|
|                | litions, Watercourse is a Wet Weather<br>andary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Torrilogge Bivision of Water Researces, Vere  | ion no (i mable i onn) |                         |
|---|------------------------|-------------------------|
| Named Waterbody: N/A  |                        | Date/Time: 9/22/22      |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                        | Project ID :            |
| Site Name/Description: E041   |                        | SR Ripley II            |
| Site Location: Soybean field; Flows into W11; Connects to outfall                                   | from W10               |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta       | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta      | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC     | CE Antecedent F        | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda       | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase | Source: USDA We        | eb Soil Survey          |
| Surrounding Land Use : Agricultural   |                        |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                     | gy (select one & desc  | cribe fully in Notes) : |
|   | •                      |                         |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase                       | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 11.00         |  |
| Justification / Notes :                                   |  |
| WWC 41  |  |
| Bank Height: 0-1 ft                                       |  |
| Bank width: 1-4 ft  |  |
| Substrate: silt   |  |
|   |  |

| A. Geomorphology (Subtotal = 5.00                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b></b>    |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | <b>7</b> 0 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate  | Strong |     |
|---|--------|------|-----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2         | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2         | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5       | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes = 1.5 |        | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 11.00  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termessee Division of Water Resources, Vers   | ion 1.5 (i mable i onn)                    |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/22/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                               |
| Site Name/Description: E042   | SR Ripley II                               |
| Site Location: Soybean field  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :                   | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                     | y (select one & describe fully in Notes) : |
|   |  |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 10.00         |  |
| Justification / Notes :                                   |  |
| WWC 42  |  |
| Bank Height: 0-1 ft                                       |  |
| Bank width: 1-4 ft  |  |
|   |  |
|   |  |

| A. Geomorphology (Subtotal = 4.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 10.00  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

|   | ,   |    |
|---|---|----|
| Named Waterbody: N/A  | Date/Time: 9/22/2                         | 22 |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID:                               |    |
| Site Name/Description: E043   | SR Ripley II                              |    |
| Site Location: On forest edge; flows off property   |   |    |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                    |    |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                   |    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC     | CE Antecedent Precipitation Too           | ol |
| Watershed Size: 29,327.89   | County: Lauderdale                        |    |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase | Source: USDA Web Soil Survey              |    |
| Surrounding Land Use : Agricultural; Forested   |   |    |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                     | gy (select one & describe fully in Notes) | :  |
|   |   |    |

#### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | V        | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | ~        | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | V        | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | V        | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>V</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | V        | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | V        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEAT       | HER CONVEYANCE |
|---|----------------|
| Secondary Indicator Score (if applicable) = 14.50 |                |
| Justification / Notes :                           |                |
| WWC 43  | <u> </u>       |
| Bank Height: 1-2 ft                               |                |
| Bank width: 2-5 ft                                |                |
|   |                |
|   |                |

| A. Geomorphology (Subtotal = 6.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| <b>B.</b> Hydrology (Subtotal = 2.50                | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 1 | 4.50  |
|------------------|---|
|                  | itions, Watercourse is a Wet Weather<br>ndary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources,  | Version 1.5 (Fillable Form) |                         |
|---|-----------------------------|-------------------------|
| Named Waterbody: N/A  |                             | Date/Time: 9/22/22      |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                |                         |
| Site Name/Description: E044   |                             | SR Ripley II            |
| Site Location: On forest edge; flows off property   |                             |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta            | ıble 1.                 |
| Previous Rainfall (7-days) : 0.03"  | ble 1.                      |                         |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :               | SACE Antecedent F           | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda            | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern p | eb Soil Survey              |                         |
| Surrounding Land Use : Agricultural; Forested   |                             |                         |
| Degree of historical alteration to natural channel morphology & hvd Slight                      | rology (select one & desc   | cribe fully in Notes) : |
| Primary Field Indicators Ob   | served                      |                         |

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |  |  |  |  |
|---|--|--|--|--|--|
| Secondary Indicator Score (if applicable) = 17.50         |  |  |  |  |  |
| Justification / Notes :                                   |  |  |  |  |  |
| WWC 44  |  |  |  |  |  |
| Bank Height: 1-2 ft                                       |  |  |  |  |  |
| Bank width: 2-3 ft  |  |  |  |  |  |
|   |  |  |  |  |  |
|   |  |  |  |  |  |

| A. Geomorphology (Subtotal = 8.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 3.50                       | Absent | Weak | Moderate | Strong |          |
|---|--------|------|----------|--------|----------|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0        |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0        |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5      |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | <b>1</b> |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1        |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0        |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 17.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termessee Division of Water Resources, Vers   | ion 1.5 (i mable i onni)                    |
|---|---|
| Named Waterbody: N/A  | Date/Time: 9/22/22                          |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                                |
| Site Name/Description: E045   | SR Ripley II                                |
| Site Location: In forest, starts off-site; flows to S13   |   |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                      |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                     |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC | CE Antecedent Precipitation Tool            |
| Watershed Size: 29,327.89   | County: Lauderdale                          |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded           | Source: USDA Web Soil Survey                |
| Surrounding Land Use : Agricultural; Forested   |   |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                 | gy (select one & describe fully in Notes) : |
|   |   |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 18.00         |  |
| Justification / Notes :                                   |  |
| WWC 45  |  |
| Bank Height: 1-4 ft                                       |  |
| Bank width: 2-6 ft  |  |
|   |  |
|   |  |

| A. Geomorphology (Subtotal = 9.50                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 2   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3          |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3          |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0          |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0          |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0          |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0          |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0          |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0          |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 18.00 |
|----------------|-------|
|                |       |

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

| Notes:         |  |  |  |
|----------------|--|--|--|
| Large headcuts |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Named Waterbody: N/A  |                       | Date/Time: 9/22/22      |
|---|-----------------------|-------------------------|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                       | Project ID :            |
| Site Name/Description: E046   |                       | SR Ripley II            |
| Site Location: In forest, starts off-site; flows to S13   |                       |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta      | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta     | ble 1.                  |
| Precipitation this Season vs. Normal : elevated USAC Source of recent & seasonal precip. data : | CE Antecedent F       | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda      | le                      |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded            | Source: USDA We       | eb Soil Survey          |
| Surrounding Land Use : Agricultural; Forested   |                       |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                 | gy (select one & desc | cribe fully in Notes) : |
|   | _                     |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEY | ANCE |
|---|------|
| Secondary Indicator Score (if applicable) = 17.00     |      |
| Justification / Notes :                               |      |
| WWC 46  |      |
| Bank Height: 1-4 ft                                   |      |
| Bank width: 2-4 ft                                    |      |
|   |      |
|   |      |

| A. Geomorphology (Subtotal = 8.50                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3          |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3          |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0          |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0          |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0          |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0          |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0          |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0          |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 17.00   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

|   | ,  |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/22/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                               |
| Site Name/Description: E047   | SR Ripley II                               |
| Site Location: In forest; flows to S13  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded            | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural; Forested   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                 | gy (select one & describe fully in Notes): |
|   |  |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | V        | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | V        | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | V        | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | V        | Stream |
| 6. Presence of fish (except Gambusia)  | V        | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>V</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | V        | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | V        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE    |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
| Secondary Indicator Score (if applicable) = <sub>13.50</sub> |  |  |  |  |  |  |
| Justification / Notes :                                      |  |  |  |  |  |  |
| WWC 47   |  |  |  |  |  |  |
| Bank Height: 1-4 ft  |  |  |  |  |  |  |
| Bank width: 2-4 ft   |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

| A. Geomorphology (Subtotal = 8.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 1. Continuous bed and bank                                     | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 0.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No =   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 1 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants. <sup>2</sup> Focus is on the presence of aquatic or wetland plants.

| Total Points =     | 13.50                | -                |
|--------------------|----------------------|------------------|
| Under Normal Cond  | ditions, Watercourse | is a Wet Weather |
| Conveyance if Seco | ondary Indicator Sco | ore < 19 points  |

| Notes : |  |  |  |
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#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Tollicoso Bivision of Water Recognoses, Vere  | ion no (i masio i omi) |                         |
|---|------------------------|-------------------------|
| Named Waterbody: N/A  |                        | Date/Time: 9/22/22      |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   |                        | Project ID :            |
| Site Name/Description: E048   |                        | SR Ripley II            |
| Site Location: Soybean field; flows to S13  |                        |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta       | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta      | ble 1.                  |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data :   | CE Antecedent F        | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda       | le                      |
| Soil Type(s) / Geology: Convent silt loam, occasionally flooded; Adler silt loam, 0 to 2 percent slopes, occasionally flooded | Source: USDA We        | eb Soil Survey          |
| Surrounding Land Use : Agricultural; Forested   |                        |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight   | y (select one & desc   | cribe fully in Notes) : |
|   |                        |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase                       | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 11.50         |  |
| Justification / Notes :                                   |  |
| WWC 48  |  |
| Bank Height: 0-1 ft                                       |  |
| Bank width: 1-10 ft                                       |  |
|   |  |
|   |  |

| A. Geomorphology (Subtotal = 4.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 1          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 3.00                       | Absent | Weak | Moderate  | Strong |     |
|---|--------|------|-----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2         | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2         | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5       | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1         | 1.5    | 1   |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes = 1.5 |        | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 11.50   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

|   | ,                     |                         |
|---|-----------------------|-------------------------|
| Named Waterbody: N/A  |                       | Date/Time: 9/22/22      |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :          |                         |
| Site Name/Description: E049   | SR Ripley II          |                         |
| Site Location: Soybean field; flows to S13  |                       |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta      | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta     | ble 1.                  |
| Precipitation this Season vs. Normal : elevated USAC Source of recent & seasonal precip. data : | CE Antecedent F       | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda      | le                      |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded            | Source: USDA We       | eb Soil Survey          |
| Surrounding Land Use : Agricultural; Forested   |                       |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                 | gy (select one & desc | cribe fully in Notes) : |
|   |                       |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 16.00         |  |
| Justification / Notes :                                   |  |
| Heavily incised with headcut from off-site                |  |
| Bank Height: 2-4 ft                                       |  |
| Bank width: 2-4 ft  |  |
| WWC 49  |  |
|   |  |

| A. Geomorphology (Subtotal = 7.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 2          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 16.00  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Named Waterbody: N/A  | Date/Time: 9/22/22                         |
|---|--|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                               |
| Site Name/Description: E050   | SR Ripley II                               |
| Site Location: Soybean field; flows to S16  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC   | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded; Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural; Forested   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Moderate   | gy (select one & describe fully in Notes): |
|   |  |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |
|---|
| Secondary Indicator Score (if applicable) = 13.50         |
| Justification / Notes :                                   |
| Heavily incised with headcut from off-site                |
| Bank Height: 0-1 ft                                       |
| Bank width: 1 ft  |
| WWC 50  |
|   |

| A. Geomorphology (Subtotal = 7.00                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | <b>]</b> 1 |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>1</b>   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | <b>7</b> 0 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | <b>1</b>   |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| <b>B.</b> Hydrology (Subtotal = 2.50                | Absent | Weak | Moderate | Strong | Τ   |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 13.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termessee Division of Water Resources, Vers   | non 1.5 (Finable Form)                     |
|---|--|
| Named Waterbody: N/A  | Date/Time: 9/22/22                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                               |
| Site Name/Description: E051   | SR Ripley II                               |
| Site Location: Soybean field; flows to S16  |  |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                     |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                    |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC   | CE Antecedent Precipitation Tool           |
| Watershed Size: 29,327.89   | County: Lauderdale                         |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded; Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase | Source: USDA Web Soil Survey               |
| Surrounding Land Use : Agricultural; Forested   |  |
| Degree of historical alteration to natural channel morphology & hydrolog Slight   | gy (select one & describe fully in Notes): |
|   |  |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>✓</b> | WWC    |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase                       | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| Evidence watercourse has been used as a supply of drinking water   | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |   |
|---|---|
| Secondary Indicator Score (if applicable) = 10.50         |   |
| Justification / Notes :                                   |   |
| WWC 51  | _ |
| Bank Height: 1-5 ft                                       |   |
| Bank width: 2-4 ft  |   |
|   |   |
|   |   |

| A. Geomorphology (Subtotal = 4.50                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0          |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.00                       | Absent | Weak | Moderate  | Strong |     |
|---|--------|------|-----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2         | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2         | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5       | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes = 1.5 |        | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 1 | 0.50   |
|------------------|--|
|                  | ions, Watercourse is a Wet Weather<br>dary Indicator Score < 19 points |

| Notes: |  |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1,5 (Fillable Form)

| Tollicoso Bivision of Water Recognoses, Vere  | 1011 1:0 (1 mable 1 cm)                   |
|---|---|
| Named Waterbody: N/A  | Date/Time: 9/22/22                        |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :                              |
| Site Name/Description: E052   | SR Ripley II                              |
| Site Location: Soybean field  |   |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                    |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                   |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC   | CE Antecedent Precipitation Tool          |
| Watershed Size: 29,327.89   | County: Lauderdale                        |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded; Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase | Source: USDA Web Soil Survey              |
| Surrounding Land Use : Agricultural; Forested   |   |
| Degree of historical alteration to natural channel morphology & hydrolog Slight   | y (select one & describe fully in Notes): |
| Primary Field Indicators Obser  | wod                                       |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 17.50         |  |
| Justification / Notes :                                   |  |
| R6  |  |
| Bank Height: 1-5 ft                                       |  |
| Bank width: 2-4 ft  |  |
| WWC 52  |  |
|   |  |

| A. Geomorphology (Subtotal = 8.50                              | Absent | Weak | Moderate | Strong |          |
|--|--------|------|----------|--------|----------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3        |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1        |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0        |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1        |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0        |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>1</b> |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0        |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0        |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1        |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5      |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0        |

| B. Hydrology (Subtotal = 3.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 17.50   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Termessee Division of Water Nesdurees, vers   | sion 1.5 (i mable i onn)                  |
|---|---|
| Named Waterbody: N/A  | Date/Time: 9/22/2                         |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID:                               |
| Site Name/Description: E053   | SR Ripley II                              |
| Site Location: Connects to S17 off-site   |   |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Table 1.                    |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Table 1.                   |
| Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USA      | CE Antecedent Precipitation To            |
| Watershed Size: 29,327.89   | County: Lauderdale                        |
| Soil Type(s) / Geology: Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase | Source: USDA Web Soil Survey              |
| Surrounding Land Use : Agricultural; Forested   |   |
| Degree of historical alteration to natural channel morphology & hydrolog Absent                     | gy (select one & describe fully in Notes) |
|   |   |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | ✓        | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 17.50         |  |
| Justification / Notes :                                   |  |
| Very heavily eroded                                       |  |
| Bank Height: 1-15 ft                                      |  |
| Bank width: 2-4 ft  |  |
| WWC 53  |  |
|   |  |

| A. Geomorphology (Subtotal = 8.00                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b></b>    |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 3          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | <b>7</b> 0 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 3.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 1.5 |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\frac{17.50}{}$  |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Torritococo Biviolori di Water Neccurece, Vere   | ion no (i mable i onn) |                         |
|--|------------------------|-------------------------|
| Named Waterbody: N/A   |                        | Date/Time: 9/22/22      |
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin  |                        | Project ID :            |
| Site Name/Description: E054  |                        | SR Ripley II            |
| Site Location: Starts in soybean; flows into woods off-site and con  | nects to S18 back      | on-site                 |
| HUC (12 digit): Cane Creek Upper 080102080701  | Latitude: See Ta       | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"   | Longitude: See Ta      | ble 1.                  |
| Precipitation this Season vs. Normal : elevated USAC Source of recent & seasonal precip. data :  | CE Antecedent F        | Precipitation Tool      |
| Watershed Size: 29,327.89  | County: Lauderda       | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase; Memphis silt loam, 2 to 5 percent slopes, moderately eroded, northern phase | Source: USDA We        | eb Soil Survey          |
| Surrounding Land Use : Agricultural; Forested  |                        |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Absent  | gy (select one & desc  | cribe fully in Notes) : |
|  |                        |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| Hydrologic feature exists solely due to a process discharge  | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>V</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | wwc    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>V</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>V</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |  |
|---|--|
| Secondary Indicator Score (if applicable) = 15.50         |  |
| Justification / Notes :                                   |  |
| WWC 54  |  |
| Bank Height: Not collected in field                       |  |
| Bank width: 2 ft  |  |
|   |  |
|   |  |

| A. Geomorphology (Subtotal = 7.00                              | Absent | Weak | Moderate | Strong |            |
|--|--------|------|----------|--------|------------|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3          |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1          |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0          |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0          |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0          |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | <b>7</b> 0 |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0          |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0          |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 2          |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0          |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5        |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0          |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1   |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 1   |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 6.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 15.50  |  |
|----------------|--|--|
|                | ditions, Watercourse<br>ondary Indicator Sco |  |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

| Named Waterbody: N/A  |                       | Date/Time: 9/22/22      |
|---|-----------------------|-------------------------|
| Assessors/Affiliation: Benjamin Burdette & Jake Irvin   | Project ID :          |                         |
| Site Name/Description: E055   | SR Ripley II          |                         |
| Site Location: Soybean field in eastern portion of site   |                       |                         |
| HUC (12 digit): Cane Creek Upper 080102080701   | Latitude: See Ta      | ble 1.                  |
| Previous Rainfall (7-days) : 0.03"  | Longitude: See Ta     | ble 1.                  |
| Precipitation this Season vs. Normal : elevated USAC Source of recent & seasonal precip. data :     | CE Antecedent F       | Precipitation Tool      |
| Watershed Size: 29,327.89   | County: Lauderda      | le                      |
| Soil Type(s) / Geology: Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase | Source: USDA We       | eb Soil Survey          |
| Surrounding Land Use : Agricultural; Forested   |                       |                         |
| Degree of historical alteration to natural channel morphology & hydrolog Slight                     | gy (select one & desc | cribe fully in Notes) : |
|   | _                     |                         |

### **Primary Field Indicators Observed**

| Primary Indicators   | NO       | YES    |
|--|----------|--------|
| 1. Hydrologic feature exists solely due to a process discharge   | <b>✓</b> | WWC    |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <b>✓</b> | WWC    |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions |          | WWC    |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <b>V</b> | WWC    |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month<br/>aquatic phase</li> </ol>  | <b>V</b> | Stream |
| 6. Presence of fish (except Gambusia)  | <b>✓</b> | Stream |
| 7. Presence of naturally occurring ground water table connection   | <b>✓</b> | Stream |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <b>✓</b> | Stream |
| 9. Evidence watercourse has been used as a supply of drinking water  | <b>✓</b> | Stream |

NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

| Overall Hydrologic Determination = WET WEATHER CONVEY | YANCE |
|---|-------|
| Secondary Indicator Score (if applicable) = 12.50     |       |
| Justification / Notes :                               |       |
| WWC 55  |       |
| Bank Height: 0-2 ft                                   |       |
| Bank width: 1-4 ft                                    |       |
|   |       |
|   |       |

| A. Geomorphology (Subtotal = 6.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 3   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1   |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 0   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 0   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 2.50                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0   |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | 1.5 |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 19. Hydric soils in channel bed or sides of channel | No:    | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = 4.00                    | Absent | Weak | Moderate | Strong |   |
|--|--------|------|----------|--------|---|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 2 |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = | 12.50 |
|----------------|-------|
| TOTAL TOTALS - |       |

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

| Notes :                          |  |  |  |
|----------------------------------|--|--|--|
| Notes : Headcut at property line |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Vers   | sion 1.5 (Fillable F                              | orm)         |                  |
|---|---|--------------|------------------|
| Named Waterbody:UNT to Hyde Creek   |   | Date         | /Time:11/1/23    |
| Assessors/Affiliation: I. Maldonado, L. Thiem   |   |              | ect ID :         |
| Site Name/Description: E056   |   |              | ey II            |
| Site Location: Ripley, TN   |   |              |                  |
| HUC (12 digit):Upper Cane Creek 080102080701  | Latitude: 35.                                     | 725686       |                  |
| Previous Rainfall (7-days) :1.91  | Longitude:_89                                     | .52668       |                  |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :   | aHS and USACE An                                  |              | ipitation Tool   |
| Watershed Size: 29327.89  | County:Laude                                      | erdale       |                  |
| Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded   | Source: USD/                                      | A Wb Soil    | Survy            |
| Surrounding Land Use : Agriculture  | 1   |              |                  |
| Degree of historical alteration to natural channel morphology & hydrology Absent  | gy (select one &                                  | describe fu  | ully in Notes) : |
| Primary Field Indicators Obse   | rved  |              |                  |
| Primary Indicators  |   | NO           | YES              |
| Hydrologic feature exists solely due to a process discharge   |   |              | WWC              |
| 2. Defined bed and bank absent, vegetation composed of upland and F   | ACU species                                       | <b>V</b>     | WWC              |
| 3. Watercourse dry anytime during February through April 15th, under precipitation / groundwater conditions   | normal<br>N/A                                     |              | WWC              |
| 4. Daily flow and precipitation records showing feature only flows in director to rainfall  | ect response                                      | V            | WWC              |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase  | month   | ~            | Stream           |
| 6. Presence of fish (except Gambusia)   |   | <b>V</b>     | Stream           |
| 7. Presence of naturally occurring ground water table connection  |   | <b>V</b>     | Stream           |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed   |   |              | Stream           |
| 9. Evidence watercourse has been used as a supply of drinking water   |   | ~            | Stream           |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further assessors may choose to score secondary indicator.  In the absence of a primary indicator, or other definitive evidence, co on page 2 of this sheet, and provide score | ors as supportions as supportions as supportions. | ng evidenc   | e.               |
| on page 2 of this sheet, and provide score  | = DEIUW.  |              |                  |
| Guidance for the interpretation and scoring of both the primary & so  | econdary indicat                                  | ors is provi | ded in           |

| Overall Hydrologic Determination = WET WEATHER CONVEYANCE |
|---|
| Secondary Indicator Score (if applicable) = 13.00         |
| Justification / Notes :                                   |
|   |
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|   |

| <b>A. Geomorphology</b> (Subtotal = $6.00$                     | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0.5 |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | NA  |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |  |
|--|--------|------|----------|--------|---|--|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\underline{13.00}$   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Vers  | on 1.5 (Fillable Form)                          |                               |                  |
|--|---|-------------------------------|------------------|
| Named Waterbody: UNT to Hyde Creek   |   | Date/Time:11/1/23             |                  |
| Assessors/Affiliation: I. Maldonado, L. Thiem  |   | _                             | ect ID :         |
| Site Name/Description: E057  |   | Riple                         | y II             |
| Site Location:Ripley, TN   |   | I                             |                  |
| HUC (12 digit):Upper Cane Creek 080102080701   | Latitude: 35.724                                | 552                           | -                |
| Previous Rainfall (7-days) :1.91   | Longitude: -89.52                               | 5986                          |                  |
| Precipitation this Season vs. Normal : low Source of recent & seasonal precip. data :  | HS and USACE Anteced                            | ent Prec                      | ipitation Tool   |
| Watershed Size : 29327.89  | County:Lauderda                                 | ıle                           |                  |
| Soil Type(s) / Geology :Adler silt loam, 0 to 2 percent slopes, occasionally flooded   | Source:USDA W                                   | b Soil                        | Survy            |
| Surrounding Land Use : Agriculture   |   |                               |                  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent  | y (select one & dese                            | cribe fu                      | ılly in Notes) : |
| Primary Field Indicators Obser   | ved   |                               |                  |
| Primary Indicators   | N   | 0                             | YES              |
| Hydrologic feature exists solely due to a process discharge  |   |                               | WWC              |
| 2. Defined bed and bank absent, vegetation composed of upland and F.   |   |                               | WWC              |
| 3. Watercourse dry anytime during February through April 15th, under n precipitation / groundwater conditions  | ormal N/A                                       |                               | WWC              |
| Daily flow and precipitation records showing feature only flows in director to rainfall  | ct response                                     |                               | WWC              |
| <ul><li>5. Presence of multiple populations of obligate lotic organisms with ≥ 2 is</li></ul>  | month _   |                               |                  |
| aquatic phase  | L   | /                             | Stream           |
| 6. Presence of fish (except Gambusia)  |   | /                             | Stream           |
| 7. Presence of naturally occurring ground water table connection   |   | 7                             | Stream           |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local w  | atershed  | /                             | Stream           |
| 9. Evidence watercourse has been used as a supply of drinking water  |   | /                             | Stream           |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further is assessors may choose to score secondary indicator.  In the absence of a primary indicator, or other definitive evidence, core on page 2 of this sheet, and provide score.  Guidance for the interpretation and scoring of both the primary & se TDEC-DWR Guidance For Making Hydrologic Determine. | rs as supporting examplete the secondary below. | vidend<br>y indica<br>s provi | ator table       |
| Overall Hydrologic Determination = WET WEATHER CON   |   |                               |                  |
| Secondary Indicator Score (if applicable) = 13.00  |   |                               |                  |
| Justification / Notes :  |   |                               |                  |

CN-1612 (Rev. 07/21) 1 of 2 RDA-2366

| <b>A. Geomorphology</b> (Subtotal = $6.00$                     | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0.5 |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | NA  |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |  |
|--|--------|------|----------|--------|---|--|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\underline{13.00}$   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Vers  |                      | )                 |                  |  |  |  |  |  |
|--|----------------------|-------------------|------------------|--|--|--|--|--|
| Named Waterbody:UNT to Hyde Creek  |                      | Date/Time:11/1/23 |                  |  |  |  |  |  |
| Assessors/Affiliation:I. Maldonado, L. Thiem   |                      | Project ID :      |                  |  |  |  |  |  |
| Site Name/Description: E058  |                      | Riple             | ey II            |  |  |  |  |  |
| Site Location:Ripley, TN   |                      |                   |                  |  |  |  |  |  |
|  | 11.00.1              |                   |                  |  |  |  |  |  |
| HUC (12 digit): Upper Cane Creek 080102080701  | 33.72                |                   |                  |  |  |  |  |  |
| Previous Rainfall (7-days) :1.91   | Longitude: -89.52    | 49//              |                  |  |  |  |  |  |
| Source of recent & seasonal precip. data :   | HS and USACE Anteced | dent Pre          | cipitation Tool  |  |  |  |  |  |
| Watershed Size : 29327.89  | County: Lauderd      | ale               |                  |  |  |  |  |  |
| Soil Type(s) / Geology: Adler silt loam, 0 to 2 percent slopes, occasionally flooded   | Source: USDA W       | /b Soi            | l Survy          |  |  |  |  |  |
| Surrounding Land Use : Agriculture   |                      |                   |                  |  |  |  |  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent  | y (select one & des  | scribe f          | ully in Notes) : |  |  |  |  |  |
| Primary Field Indicators Observed  |                      |                   |                  |  |  |  |  |  |
| Primary Indicators   | ı                    | NO                | YES              |  |  |  |  |  |
| Hydrologic feature exists solely due to a process discharge  |                      |                   | WWC              |  |  |  |  |  |
| 2. Defined bed and bank absent, vegetation composed of upland and F  |                      | <b>✓</b>          | WWC              |  |  |  |  |  |
| 3. Watercourse dry anytime during February through April 15th, under normal  |                      |                   | WWC              |  |  |  |  |  |
| precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in dire   | ct response          |                   |                  |  |  |  |  |  |
| to rainfall  |                      | <b>~</b>          | WWC              |  |  |  |  |  |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2   | month                |                   | Stream           |  |  |  |  |  |
| aquatic phase  | L                    | <b>/</b>          |                  |  |  |  |  |  |
| 6. Presence of fish (except <i>Gambusia</i> )  |                      | <b>✓</b>          | Stream           |  |  |  |  |  |
| 7. Presence of naturally occurring ground water table connection   |                      | <b>✓</b>          | Stream           |  |  |  |  |  |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local w  | atershed             | <u>~</u>          | Stream           |  |  |  |  |  |
| 9. Evidence watercourse has been used as a supply of drinking water  |                      | <b>/</b>          | Stream           |  |  |  |  |  |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in |                      |                   |                  |  |  |  |  |  |
| TDEC-DWR Guidance For Making Hydrologic Determion  Overall Hydrologic Determination = WET WEATHER CON  | ,                    |                   |                  |  |  |  |  |  |
| Secondary Indicator Score (if applicable) = 13.00  |                      |                   |                  |  |  |  |  |  |
| 3000 mail of the philable - 13.00  |                      |                   |                  |  |  |  |  |  |
| Justification / Notes :  |                      |                   |                  |  |  |  |  |  |

| <b>A. Geomorphology</b> (Subtotal = $6.00$                     | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0.5 |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | NA  |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |  |
|--|--------|------|----------|--------|---|--|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\underline{13.00}$   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



**Justification / Notes:** 

# Tennessee Department of Environment and Conservation - Division of Water Resources 312 Rosa L. Parks Ave. 11th Floor. Nashville, TN 37243

#### **Hydrologic Determination Field Data Sheet**

| Named Waterbody: UNT to Hyde Creek  Assessors/Affiliation: I. Maldonado, L. Thiem  Site Name/Description: E059  Site Location: Ripley, TN  HUC (12 digit): Upper Cane Creek 080102080701  Previous Rainfall (7-days): 1.91  Precipitation this Season vs. Normal:   DW  | Tennessee Division of Water Resources, Vers  | ion 1.5 (Fillable For | m)                |                   |  |  |  |
|---|--|-----------------------|-------------------|-------------------|--|--|--|
| Site Name/Description:E059  Site Location:Ripley, TN  HUC (12 digit):Upper Cane Creek 080102080701  Previous Rainfall (7-days):1.91  Precipitation this Season vs. Normal:  | Named Waterbody:UNT to Hyde Creek  |                       | Date/Time:11/1/23 |                   |  |  |  |
| Site Name/Description: E059  Site Location: Ripley, TN  HUC (12 digit): Upper Cane Creek 080102080701  Latitude: 35.724761  Previous Rainfall (7-days): 1.91  Precipitation this Season vs. Normal: low CocoraHs and USACE Antecedent Precipitation Tool Source of Ireetia & seasonal precipit data: low CocoraHs and USACE Antecedent Precipitation Tool Source of Ireetia & seasonal precipitation Tool Source of Ireetia & seasonal precipit data: low CocoraHs and USACE Antecedent Precipitation Tool Source USDA Wb Soil Survy  Surrounding Land Use: Agriculture  Degree of historical alteration to natural channel morpholoav & hydrology (select one & describe fully in Notes): Absent  Primary Field Indicators Observed  Primary Indicators  1. Hydrologic feature exists solely due to a process discharge V WWC 2. Defined bed and bank absent, vegetation composed of upland and FACU species V WWC 3. Watercourse dry anytime during February through April 15th, under normal N/A WWC 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of fish (except Gambusia) 8. Flowing water in channel and 7 days since last precip >0.1* in local watershed V Stream 9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5   | Assessors/Affiliation: I. Maldonado, L. Thiem  |                       | Project ID :      |                   |  |  |  |
| Site Location: Ripley, TN  HUC (12 digit): Upper Cane Creek 080102080701  |  |                       | Rip               | oley II           |  |  |  |
| HUC (12 digit):Upper Cane Creek 080102080701  Previous Rainfall (7-days):1.91  Precipitation this Season vs. Normal: low CocoraHS and USACE Antecedent Precipitation Tool Source of recent & seasonal precip, data: low Watershed Size: 29327.89  Soil Type(s) / Geology: Adler sitt loam, 0 to 2 percent slopes, occasionally flooded Source: USDA Wb Soil Survy  Surrounding Land Use: Agriculture  Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes): Absent  Primary Field Indicators Observed  Primary Indicators  1. Hydrologic feature exists solely due to a process discharge   |  |                       |                   |                   |  |  |  |
| Primary Indicators  Premary Indicators  1. Hydrologic feature exists solely due to a process discharge  2. Defined bed and bank absent, vegetation composed of upland and FACU species  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  1. In the absence of a primary indicators 1.9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  Culdance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Coverall Hydrologic Determination = WET WEATHER CONVEYANCE   |  | Latitude: of a        | 0.4704            |                   |  |  |  |
| Precipitation this Season vs. Normal:   | HUC (12 digit): Upper Cane Creek 080102080701  | 55.7                  |                   |                   |  |  |  |
| Watershed Size : 29327.89  Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded  Source: USDA Wb Soil Survy  Surrounding Land Use : Agriculture  Degree of historical alteration to natural channel morpholoav & hvdrology (select one & describe fully in Notes) :  Absent  Primary Field Indicators Observed  Primary Indicators  Primary Indicators  NO YES  1. Hydrologic feature exists solely due to a process discharge  2. Defined bed and bank absent, vegetation composed of upland and FACU species  3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of fish (except Gambusia)  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   | Previous Rainfall (7-days) :1.91   | Longitude: _89.       | 52369             | 7                 |  |  |  |
| Soil Type(s) / Geology :Adler silt loam, 0 to 2 percent slopes, occasionally flooded  Source: USDA Wb Soil Survy  Surrounding Land Use : Agriculture  Degree of historical alteration to natural channel morphology (select one & describe fully in Notes) :  Absent  Primary Field Indicators Observed  Primary Indicators  Primary Indicators  NO YES  1. Hydrologic feature exists solely due to a process discharge  2. Defined bed and bank absent, vegetation composed of upland and FACU species  3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE  ■   | Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :  | HS and USACE Ante     | cedent P          | recipitation Tool |  |  |  |
| Surrounding Land Use :Agriculture  Degree of historical alteration to natural channel morphology (select one & describe fully in Notes):  Absent  Primary Field Indicators Observed  Primary Indicators  NO YES  1. Hydrologic feature exists solely due to a process discharge  VWWC  2. Defined bed and bank absent, vegetation composed of upland and FACU species  WWC  3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except *Gambusia*)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE  | Watershed Size : 29327.89  | County:Lauder         | dale              |                   |  |  |  |
| Primary Field Indicators Observed  Primary Indicators  1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed 9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   Overall Hydrologic Determinations, Version 1.5  | Soil Type(s) / Geology :Adler silt loam, 0 to 2 percent slopes, occasionally flooded   | Source:USDA           | Wb S              | oil Survy         |  |  |  |
| Primary Field Indicators Observed  Primary Indicators  1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species  | Surrounding Land Use : Agriculture   |                       |                   |                   |  |  |  |
| Primary Indicators  1. Hydrologic feature exists solely due to a process discharge  2. Defined bed and bank absent, vegetation composed of upland and FACU species  3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except *Gambusia*)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  **Overall Hydrologic Determination = WET WEATHER CONVEYANCE***   |  | y (select one & d     | escribe           | fully in Notes):  |  |  |  |
| 1. Hydrologic feature exists solely due to a process discharge  2. Defined bed and bank absent, vegetation composed of upland and FACU species  3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   | Primary Field Indicators Observed  |                       |                   |                   |  |  |  |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species  ✓ WWC  3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except *Gambusia*)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   | Primary Indicators   |                       |                   | YES               |  |  |  |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions  4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   | Hydrologic feature exists solely due to a process discharge  |                       | <b>V</b>          | WWC               |  |  |  |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except <i>Gambusia</i> )  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   | 2. Defined bed and bank absent, vegetation composed of upland and FACU species   |                       |                   | WWC               |  |  |  |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall  5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase  6. Presence of fish (except *Gambusia*)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE  • WWC  WWC  WWC  **WUC  **WUC  **WUC  **Stream  **Stream  **Outeram  **Stream  **Outeram  **Ou | T T T T T T T T T T T T T T T T T T T  |                       |                   | WWC               |  |  |  |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed 9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE  | precipitation / groundwater conditions   |                       |                   | _                 |  |  |  |
| aquatic phase  6. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   |  |                       |                   | WWC               |  |  |  |
| 6. Presence of fish (except Gambusia)  7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE  | 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month   |                       |                   | Stream            |  |  |  |
| 7. Presence of naturally occurring ground water table connection  8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   |  |                       |                   |                   |  |  |  |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed  9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   | · · · · · · · · · · · · · · · · · · ·  |                       |                   |                   |  |  |  |
| 9. Evidence watercourse has been used as a supply of drinking water  NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |  |                       |                   |                   |  |  |  |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   |  |                       |                   |                   |  |  |  |
| assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  Overall Hydrologic Determination = WET WEATHER CONVEYANCE   | 9. Evidence watercourse has been used as a supply of drinking water Stream   |                       |                   |                   |  |  |  |
|   | assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in |                       |                   |                   |  |  |  |
|   | Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |                       |                   |                   |  |  |  |
| Secondary indicator Score (it applicable) = $14.05$   | Secondary Indicator Score (if applicable) = 14.25  |                       |                   |                   |  |  |  |

| A. Geomorphology (Subtotal = 7.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 1. Continuous bed and bank                                     | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 1.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1.5 |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1.5 |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 0   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0   |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.25                       | Absent | Weak | Moderate | Strong |       |
|---|--------|------|----------|--------|-------|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0     |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0     |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | NA    |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5   |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0.75▼ |
| 19. Hydric soils in channel bed or sides of channel |        |      | Yes      | = 1.5  | 0     |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |  |
|--|--------|------|----------|--------|---|--|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = 14.25   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Vers  | ion 1.5 (Fillable Form) |              |                 |  |  |  |
|--|-------------------------|--------------|-----------------|--|--|--|
| Named Waterbody:UNT to Hyde Creek  |                         | Date         | /Time:11/1/23   |  |  |  |
| Assessors/Affiliation: I. Maldonado, L. Thiem  |                         | Project ID : |                 |  |  |  |
| Site Name/Description: E060  |                         | Ripley II    |                 |  |  |  |
| Site Location: Ripley, TN  |                         |              |                 |  |  |  |
| HUC (12 digit):Upper Cane Creek 080102080701   | Latitude: 35.727        | 367          |                 |  |  |  |
| Previous Rainfall (7-days) :1.91   | Longitude: -89.52       | 4614         |                 |  |  |  |
| Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :  | HS and USACE Anteced    |              | cipitation Tool |  |  |  |
| Watershed Size : 29327.89  | County: Lauderda        | ale          |                 |  |  |  |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase  | Source: USDA W          | b Soi        | l Survy         |  |  |  |
| Surrounding Land Use : Agriculture   |                         |              |                 |  |  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent  | gy (select one & des    | cribe fu     | ully in Notes): |  |  |  |
| Primary Field Indicators Obser   | ved                     |              |                 |  |  |  |
| Primary Indicators   | N                       | Ю            | YES             |  |  |  |
| Hydrologic feature exists solely due to a process discharge  |                         |              | WWC             |  |  |  |
| 2. Defined bed and bank absent, vegetation composed of upland and F  |                         | <b>'</b>     | WWC             |  |  |  |
| 3. Watercourse dry anytime during February through April 15th, under r precipitation / groundwater conditions  | normal N/A              |              | WWC             |  |  |  |
| Daily flow and precipitation records showing feature only flows in direct response to rainfall   |                         |              | WWC             |  |  |  |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase   | month [                 | <b>v</b>     | Stream          |  |  |  |
| 6. Presence of fish (except Gambusia)  |                         | <b>v</b>     | Stream          |  |  |  |
| 7. Presence of naturally occurring ground water table connection   |                         | <b>v</b>     | Stream          |  |  |  |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local w  | vatershed               | <b>V</b>     | Stream          |  |  |  |
| 9. Evidence watercourse has been used as a supply of drinking water  |                         | <b>✓</b>     | Stream          |  |  |  |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in |                         |              |                 |  |  |  |
| TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5  |                         |              |                 |  |  |  |
| Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |                         |              |                 |  |  |  |
| Secondary Indicator Score (if applicable) = 13.00  |                         |              |                 |  |  |  |
| Justification / Notes :  |                         |              |                 |  |  |  |

| <b>A. Geomorphology</b> (Subtotal = $6.00$                     | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.00                              | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel                 | 0      | 1    | 2        | 3      | 0.5 |
| 15. Water in channel and >48 hours since sig. rain         | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                                 | 1.5    | 1    | 0.5      | 0      | NA  |
| 17. Sediment on plants or on debris                        | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)            | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of No = 0 channel |        | Yes  | = 1.5    | 0      |     |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |  |
|--|--------|------|----------|--------|---|--|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\underline{13.00}$   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Vers  | on 1.5 (Fillable Form) |                   |                  |  |  |  |
|--|------------------------|-------------------|------------------|--|--|--|
| Named Waterbody:UNT to Hyde Creek  |                        | Date/Time:11/1/23 |                  |  |  |  |
| Assessors/Affiliation:I. Maldonado, L. Thiem   |                        | Project ID :      |                  |  |  |  |
| Site Name/Description: E061  |                        | Ripley II         |                  |  |  |  |
| Site Location:Ripley, TN   |                        | ı                 |                  |  |  |  |
| HUC (12 digit):Upper Cane Creek 080102080701   | Latitude: 35.730       | 014               |                  |  |  |  |
| Previous Rainfall (7-days) :1.91   | Longitude: -89.52      |                   |                  |  |  |  |
| Precipitation this Season vs. Normal : Low   | HS and USACE Anteced   |                   | cipitation Tool  |  |  |  |
| Source of recent & seasonal precip. data .   |                        |                   |                  |  |  |  |
| Watershed Size : 29327.89  | County:Lauderda        |                   |                  |  |  |  |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase  | Source:USDA W          | b Soi             | Survy            |  |  |  |
| Surrounding Land Use : Agriculture   |                        |                   |                  |  |  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent  | y (select one & des    | cribe fu          | ully in Notes) : |  |  |  |
| Primary Field Indicators Obser   | ved                    |                   |                  |  |  |  |
| Primary Indicators   | N                      | 0                 | YES              |  |  |  |
| Hydrologic feature exists solely due to a process discharge  |                        |                   | WWC              |  |  |  |
| 2. Defined bed and bank absent, vegetation composed of upland and F.   |                        |                   | WWC              |  |  |  |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions   |                        |                   | WWC              |  |  |  |
| Daily flow and precipitation records showing feature only flows in dire to rainfall  | ct response            | V                 | WWC              |  |  |  |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase   | month                  | <b>V</b>          | Stream           |  |  |  |
| 6. Presence of fish (except Gambusia)  |                        | <b>/</b>          | Stream           |  |  |  |
| 7. Presence of naturally occurring ground water table connection   |                        | /                 | Stream           |  |  |  |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local w  |                        |                   | Stream           |  |  |  |
| 9. Evidence watercourse has been used as a supply of drinking water  | L                      | <b>/</b>          | Stream           |  |  |  |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5 |                        |                   |                  |  |  |  |
|  |                        |                   |                  |  |  |  |
| Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |                        |                   |                  |  |  |  |
| Secondary Indicator Score (if applicable) = 13.00  |                        |                   |                  |  |  |  |
| lustification / Notes :  |                        |                   |                  |  |  |  |

| <b>A. Geomorphology</b> (Subtotal = $6.00$                     | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0.5 |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | NA  |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |  |
|--|--------|------|----------|--------|---|--|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\underline{13.00}$   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Version 1.5 (Fillable Form)   |                   |              |                     |  |  |
|--|-------------------|--------------|---------------------|--|--|
| Named Waterbody:UNT to Hyde Creek  | Date/Time:11/1/23 |              |                     |  |  |
| Assessors/Affiliation: I. Maldonado, L. Thiem  |                   | Project ID : |                     |  |  |
| Site Name/Description: E062  |                   | Ri           | ipley II            |  |  |
| Site Location: Ripley, TN  |                   |              |                     |  |  |
| HUC (12 digit): Upper Cane Creek 080102080701  | Latitude: 35.7    | 73112        | 25                  |  |  |
| Previous Rainfall (7-days) :1.91   | Longitude:_89.    |              |                     |  |  |
| Precipitation this Season vs. Normal : IOW  Source of recent & seasonal precip. data :   | HS and USACE Ante |              |                     |  |  |
| Watershed Size : 29327.89  | County:Laude      | erdale       |                     |  |  |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase  | Source:USDA       | Wb S         | Soil Survy          |  |  |
| Surrounding Land Use : Agriculture   |                   |              | -                   |  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent  | y (select one &   | describ      | e fully in Notes) : |  |  |
| Primary Field Indicators Obser   | ved               |              |                     |  |  |
| Primary Indicators   |                   | NO           | YES                 |  |  |
| Hydrologic feature exists solely due to a process discharge  |                   |              | WWC                 |  |  |
| 2. Defined bed and bank absent, vegetation composed of upland and Fa   | ACU species       | ~            | WWC                 |  |  |
| 3. Watercourse dry anytime during February through April 15th, under n precipitation / groundwater conditions  | ormal N/A         |              | WWC                 |  |  |
| 4. Daily flow and precipitation records showing feature only flows in dire to rainfall   | ct response       | V            | WWC                 |  |  |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase   | month             | V            | Stream              |  |  |
| 6. Presence of fish (except Gambusia)  |                   | V            | Stream              |  |  |
| 7. Presence of naturally occurring ground water table connection   |                   | ~            | Stream              |  |  |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local w  | /atershed         | V            | Stream              |  |  |
| 9. Evidence watercourse has been used as a supply of drinking water  |                   | <b>V</b>     | Stream              |  |  |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5 |                   |              |                     |  |  |
| Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |                   |              |                     |  |  |
| Secondary Indicator Score (if applicable) = 13.00  |                   |              |                     |  |  |

Overall Hydrologic Determination = WET WEATHER CONVEYANCE

Secondary Indicator Score (if applicable) = 13.00

Justification / Notes :

| <b>A. Geomorphology</b> (Subtotal = $6.00$                     | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0.5 |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | NA  |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |  |
|--|--------|------|----------|--------|---|--|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\underline{13.00}$   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Vers   | ion 1.5 (Fillable For | m)                |                  |  |  |
|---|-----------------------|-------------------|------------------|--|--|
| Named Waterbody:UNT to Hyde Creek   | Date                  | Date/Time:11/1/23 |                  |  |  |
| Assessors/Affiliation:I. Maldonado, L. Thiem  |                       | _                 | ect ID :         |  |  |
| Site Name/Description: E063   |                       | Riple             | ey II            |  |  |
| Site Location:Ripley, TN  |                       |                   |                  |  |  |
| HUC (12 digit):Upper Cane Creek 080102080701  |                       |                   |                  |  |  |
| Previous Rainfall (7-days):1.91   | Longitude: -89.5      |                   |                  |  |  |
| Precipitation this Season vs. Normal:   |                       |                   |                  |  |  |
| Source of recent & seasonal precip. data :  | HS and USACE Antec    | edent Pred        | cipitation Tool  |  |  |
| Watershed Size : 29327.89   | County:Lauder         | dale              |                  |  |  |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase   | Source:USDA           | Wb Soi            | l Survy          |  |  |
| Surrounding Land Use : Agriculture  |                       |                   |                  |  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent   | gy (select one & d    | escribe f         | ully in Notes) : |  |  |
| Primary Field Indicators Obser  | ved                   |                   |                  |  |  |
| Primary Indicators  |                       | NO                | YES              |  |  |
| Hydrologic feature exists solely due to a process discharge   |                       |                   | WWC              |  |  |
| <ul><li>2. Defined bed and bank absent, vegetation composed of upland and F</li><li>3. Watercourse dry anytime during February through April 15th, under r</li></ul>  |                       | <u> </u>          | WWC              |  |  |
| precipitation / groundwater conditions  | N/A                   |                   | WWC              |  |  |
| 4. Daily flow and precipitation records showing feature only flows in dire  | ect response          |                   | WWC              |  |  |
| to rainfall   |                       | ~                 | VVVC             |  |  |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase  | month                 | ~                 | Stream           |  |  |
| 6. Presence of fish (except <i>Gambusia</i> )   |                       |                   | Stream           |  |  |
| 7. Presence of naturally occurring ground water table connection  |                       | V                 | Stream           |  |  |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local w   | vatershed             | V                 | Stream           |  |  |
| 9. Evidence watercourse has been used as a supply of drinking water   |                       | ~                 | Stream           |  |  |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. |                       |                   |                  |  |  |
| Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5   |                       |                   |                  |  |  |
| Overall Hydrologic Determination = WET WEATHER CON<br>Secondary Indicator Score (if applicable) = 13.00   | NVEYANCE -            |                   |                  |  |  |
| Justification / Notes :   |                       |                   |                  |  |  |

| <b>A. Geomorphology</b> (Subtotal = $6.00$                     | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0.5 |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | NA  |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |  |
|--|--------|------|----------|--------|---|--|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\underline{13.00}$   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Versi   |                      |                   |                |  |  |  |
|--|----------------------|-------------------|----------------|--|--|--|
| Named Waterbody: UNT to Hyde Creek   |                      | Date/Time:11/1/23 |                |  |  |  |
| Assessors/Affiliation: I. Maldonado, L. Thiem  |                      | Project ID :      |                |  |  |  |
| Site Name/Description: E064  |                      | Ripley            | / II           |  |  |  |
| Site Location: Ripley, TN  |                      | 1                 |                |  |  |  |
| HUC (12 digit): Upper Cane Creek 080102080701  | Latitude: 35.728     | 3626              |                |  |  |  |
| Previous Rainfall (7-days) :1.91   | Longitude: -89.52    |                   |                |  |  |  |
| Precipitation this Season vs. Normal   |                      |                   | Control Tool   |  |  |  |
| Source of recent & seasonal precip. data .   | HS and USACE Anteced |                   | oltation 1001  |  |  |  |
| Watershed Size : 29327.89  | County: Lauderda     | ale               |                |  |  |  |
| Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase  | Source:USDA W        | b Soil            | Survy          |  |  |  |
| Surrounding Land Use : Agriculture   |                      |                   |                |  |  |  |
| Degree of historical alteration to natural channel morpholoav & hvdrolog Absent  | y (select one & des  | cribe ful         | ly in Notes) : |  |  |  |
| Primary Field Indicators Obser   | ved                  |                   |                |  |  |  |
| Primary Indicators   | N                    | 10                | YES            |  |  |  |
| Hydrologic feature exists solely due to a process discharge  |                      |                   | WWC            |  |  |  |
| 2. Defined bed and bank absent, vegetation composed of upland and F  |                      | <b>v</b>          | WWC            |  |  |  |
| 3. Watercourse dry anytime during February through April 15th, under n precipitation / groundwater conditions  | ormal N/A            |                   | WWC            |  |  |  |
| Daily flow and precipitation records showing feature only flows in dire to rainfall  | ct response          | v                 | WWC            |  |  |  |
| <ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 is aquatic phase</li> </ol>   | month                | v                 | Stream         |  |  |  |
| 6. Presence of fish (except <i>Gambusia</i> )  | <u> </u>             | <u> </u>          | Stream         |  |  |  |
| 7. Presence of naturally occurring ground water table connection   | <u> </u>             | 7                 | Stream         |  |  |  |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local w  | atershed             | v                 | Stream         |  |  |  |
| 9. Evidence watercourse has been used as a supply of drinking water  |                      | <b>v</b>          | Stream         |  |  |  |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.  Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-DWR Guidance For Making Hydrologic Determinations, Version 1.5 |                      |                   |                |  |  |  |
| Overall Hydrologic Determination = WET WEATHER CONVEYANCE  |                      |                   |                |  |  |  |
| Secondary Indicator Score (if applicable) = 13.00  |                      |                   |                |  |  |  |
| Justification / Notes :  |                      |                   |                |  |  |  |

CN-1612 (Rev. 07/21) 1 of 2 RDA-2366

| <b>A. Geomorphology</b> (Subtotal = $6.00$                     | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.00                       | Absent | Weak | Moderate | Strong |     |
|---|--------|------|----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2        | 3      | 0.5 |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2        | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5      | 0      | NA  |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1        | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes      | = 1.5  | 0   |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |  |
|--|--------|------|----------|--------|---|--|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\underline{13.00}$   |
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| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.



#### **Hydrologic Determination Field Data Sheet**

| Tennessee Division of Water Resources, Vers   | ion 1.5 (Fillable For | m)                |                 |  |  |
|---|-----------------------|-------------------|-----------------|--|--|
| Named Waterbody:UNT to Hyde Creek   | Date                  | Date/Time:11/1/23 |                 |  |  |
| Assessors/Affiliation:I. Maldonado, L. Thiem  |                       | _                 | ect ID :        |  |  |
| Site Name/Description: E065   |                       | Riple             | ∍y II           |  |  |
| Site Location:Ripley, TN  |                       | I                 |                 |  |  |
| HUC (12 digit):Upper Cane Creek 080102080701  | Latitude: 35.7        | 27039             |                 |  |  |
| Previous Rainfall (7-days):1.91   | Longitude: _89.5      |                   |                 |  |  |
| Precipitation this Season vs. Normal  |                       |                   |                 |  |  |
| Source of recent & seasonal precip. data :  | HS and USACE Antec    | cedent Pred       | ipitation Tool  |  |  |
| Watershed Size : 29327.89   | County:Lauder         | dale              |                 |  |  |
| Soil Type(s) / Geology :Adler silt loam, 0 to 2 percent slopes, occasionally flooded  | Source:USDA           | Wb Soi            | l Survy         |  |  |
| Surrounding Land Use : Agriculture  |                       |                   |                 |  |  |
| Degree of historical alteration to natural channel morphology & hydrolog Absent   | gy (select one & d    | escribe f         | ully in Notes): |  |  |
| Primary Field Indicators Obser  | ved                   |                   |                 |  |  |
| Primary Indicators  |                       | NO                | YES             |  |  |
| Hydrologic feature exists solely due to a process discharge   |                       |                   | WWC             |  |  |
| <ul><li>2. Defined bed and bank absent, vegetation composed of upland and F</li><li>3. Watercourse dry anytime during February through April 15th, under r</li></ul>  |                       | <u> </u>          | WWC             |  |  |
| precipitation / groundwater conditions  | N/A                   |                   | WWC             |  |  |
| 4. Daily flow and precipitation records showing feature only flows in dire  | ect response          |                   | WWC             |  |  |
| to rainfall   |                       | <b>V</b>          |                 |  |  |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase  | month                 | V                 | Stream          |  |  |
| 6. Presence of fish (except <i>Gambusia</i> )   |                       | <u> </u>          | Stream          |  |  |
| 7. Presence of naturally occurring ground water table connection  |                       | V                 | Stream          |  |  |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local w   | vatershed             | ~                 | Stream          |  |  |
| 9. Evidence watercourse has been used as a supply of drinking water   |                       | <b>V</b>          | Stream          |  |  |
| NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.  In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. |                       |                   |                 |  |  |
| Guidance for the interpretation and scoring of both the primary & se<br>TDEC-DWR Guidance For Making Hydrologic Determine   |                       |                   | ded in          |  |  |
| Overall Hydrologic Determination = WET WEATHER CON<br>Secondary Indicator Score (if applicable) = 13.00   | NVEYANCE -            |                   |                 |  |  |
| Justification / Notes :   |                       |                   |                 |  |  |

| <b>A. Geomorphology</b> (Subtotal = $6.00$                     | Absent | Weak | Moderate | Strong |     |
|--|--------|------|----------|--------|-----|
| Continuous bed and bank  | 0      | 1    | 2        | 3      | 2   |
| 2. Sinuous channel   | 0      | 1    | 2        | 3      | 0.5 |
| 3. In-channel structure: riffle-pool sequences                 | 0      | 1    | 2        | 3      | 1   |
| 4. Sorting of soil textures or other substrate                 | 0      | 1    | 2        | 3      | 1   |
| 5. Active/relic floodplain                                     | 0      | 0.5  | 1        | 1.5    | 0   |
| 6. Depositional bars or benches                                | 0      | 1    | 2        | 3      | 0   |
| 7. Braided channel   | 0      | 1    | 2        | 3      | 0   |
| 8. Recent alluvial deposits                                    | 0      | 0.5  | 1        | 1.5    | 0   |
| 9. Natural levees  | 0      | 1    | 2        | 3      | 0   |
| 10. Headcuts   | 0      | 1    | 2        | 3      | 1   |
| 11. Grade controls   | 0      | 0.5  | 1        | 1.5    | 0   |
| 12. Natural valley or drainageway                              | 0      | 0.5  | 1        | 1.5    | 0.5 |
| 13. At least second order channel on existing USGS or NRCS map | 0      | 1    | 2        | 3      | 0   |

| B. Hydrology (Subtotal = 1.00                       | Absent | Weak | Moderate  | Strong |     |
|---|--------|------|-----------|--------|-----|
| 14. Subsurface flow/discharge into channel          | 0      | 1    | 2         | 3      | 0.5 |
| 15. Water in channel and >48 hours since sig. rain  | 0      | 1    | 2         | 3      | 0   |
| 16. Leaf litter in channel                          | 1.5    | 1    | 0.5       | 0      | NA  |
| 17. Sediment on plants or on debris                 | 0      | 0.5  | 1         | 1.5    | 0.5 |
| 18. Organic debris lines or piles (wrack lines)     | 0      | 0.5  | 1         | 1.5    | 0   |
| 19. Hydric soils in channel bed or sides of channel | No :   | = 0  | Yes = 1.5 |        | 0   |

| C. Biology (Subtotal = $6.00$                  | Absent | Weak | Moderate | Strong |   |  |
|--|--------|------|----------|--------|---|--|
| 20. Fibrous roots in channel bed <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 21. Rooted plants in the thalweg <sup>1</sup>  | 3      | 2    | 1        | 0      | 3 |  |
| 22. Crayfish in stream (exclude in floodplain) | 0      | 1    | 2        | 3      | 0 |  |
| 23. Bivalves/mussels                           | 0      | 1    | 2        | 3      | 0 |  |
| 24. Amphibians                                 | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 25. Macrobenthos (record type & abundance)     | 0      | 1    | 2        | 3      | 0 |  |
| 26. Filamentous algae; periphyton              | 0      | 1    | 2        | 3      | 0 |  |
| 27. Iron oxidizing bacteria/fungus             | 0      | 0.5  | 1        | 1.5    | 0 |  |
| 28. Wetland plants in channel bed <sup>2</sup> | 0      | 0.5  | 1        | 1.5    | 0 |  |

<sup>&</sup>lt;sup>1</sup> Focus is on the presence of terrestrial plants.

| Total Points = $\underline{13.00}$   |
|--|
| Under Normal Conditions, Watercourse is a Wet Weather<br>Conveyance if Secondary Indicator Score < 19 points |

| Notes : |  |  |  |
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<sup>&</sup>lt;sup>2</sup> Focus is on the presence of aquatic or wetland plants.