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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

Project/Site: SR Ripley II		City/County: Ripley/Lau	derdale	Sampling Date: 9/19/22
Applicant/Owner: Silicon Ranch Corporat	tion	·	State: TN	Sampling Point: W001-W
Investigator(s): Benjamin Burdette and Jake I	Irven Sec	ction, Township, Range:		<u> </u>
Landform (hillside, terrace, etc.): toe of slope		relief (concave, convex, n	none): concave	Slope (%): 0-2
Subregion (LRR or MLRA): LRR P, MLRA 13		Long: 89	•	Datum: NAD83
Soil Map Unit Name: Loring silt loam, 6 to 12			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	logy significantly distur		rcumstances" present?	? Yes X No
Are Vegetation , Soil , or Hydrol	<u></u>		lain any answers in Re	
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				
DP1-W1				
LHYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators	(minimum of two required)
Primary Indicators (minimum of one is require	ed: check all that apply)	-	Surface Soil Crack	<u> </u>
X 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 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 Posit	• • • •
Iron Deposits (B5)	Other (Explain in Remark	_	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 X	No Depth (inches):	1		
Water Table Present? Yes	No X Depth (inches):	0		
Saturation Present? Yes	No X Depth (inches):	0 Wetland H	lydrology Present?	Yes X No
(includes capillary fringe)				<u> </u>
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, pr	revious inspections), if ava	ailable:	
Remarks:				

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

Hydrophytic

Vegetation

Present?

20% of total cover:

75

15

10

50

30

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 75 x 5 = UPL species 375 100 (A) 400 Column Totals: (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 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) 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.

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

	ription: (Describe to	o the dept				ator or c	onfirm the absence	of indicators.)
Depth (inches)	Matrix Calar (maint)	0/		x Featur		Loc ²	Toytura	Domorko
(inches)	Color (moist)	<u>%</u> _	Color (moist)	<u>%</u>	Type ¹		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			M	Loamy/Clayey	Prominent redox concentrations
¹Type: C=Co	oncentration, D=Deple		Reduced Matrix, N	 IS=Mas	sked San	d Grains.	² Location:	PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (Applical	ole to all L	RRs, unless othe	rwise r	noted.)		Indicators	for Problematic Hydric Soils ³ :
Histosol	(A1)		Thin Dark Su	ırface (S	69) (LRR	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) (LRR S)
Black His	stic (A3)		(MLRA 15	3B, 153	D)		Coast	Prairie Redox (A16)
Hydrogei	n Sulfide (A4)		Loamy Muck	y Miner	al (F1) (L	.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) (LR I	R P, T, U)	Redox Dark		` '			ont Floodplain Soils (F19) (LRR P, T)
	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	A 454\		arent Material (F21)
	rk Surface (A12)	I DA 450A	Depleted Ocl	-				hallow Dark Surface (F22)
	airie Redox (A16) (M lucky Mineral (S1) (Li		· <u> </u>					side MLRA 138, 152A in FL, 154)
	leyed Matrix (S4)	XX O, 3)	Umbric Surfa Delta Ochric	-				Islands Low Chroma Matrix (TS7) RA 153B, 153D)
	edox (S5)		Reduced Ver				•	Explain in Remarks)
	Matrix (S6)		Piedmont Flo	•	, ,		· —	Explain in Remarks)
	face (S7) (LRR P, S,	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	Э						
Depth (in	nches):	0					Hydric Soil Pres	ent? Yes X No
Remarks: 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	ıderdale	Sampling Date: <u>9/19/2022</u>			
Applicant/Owner: Silicon Ranch Corporati		<u>-</u>	State: TN	Sampling Point: W001-UPL			
Investigator(s): Benjamin Burdette and Jake II	rvin Sec	tion, Township, Range:					
Landform (hillside, terrace, etc.): hillside	-	relief (concave, convex, r	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	typical for this time of year?	Yes X	No (If no, e	explain in Remarks.)			
Are Vegetation, Soil, or Hydrold	•		ircumstances" present				
Are Vegetation, Soil, or Hydrold	·		olain any answers in Re				
SUMMARY OF FINDINGS – Attach	<u></u>		-				
Hydrophytic Vegetation Present?	Yes No X	Is the Sampled Area					
		within a Wetland?	Yes	No X			
	Yes No X						
Upland point corresponding to W1. In a cottor DP2-UP	n field.						
HYDROLOGY							
Wetland Hydrology Indicators:				(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)			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 of	= : :	Dry-Season Wate				
Sediment Deposits (B2)	Presence of Reduced Iro		Crayfish Burrows				
Drift Deposits (B3)	Recent Iron Reduction in	Tilled Solls (Co)	Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Thin Muck Surface (C7)	J\	Geomorphic Position (D2)				
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7)	Other (Explain in Remark	KS)	Shallow Aquitard FAC-Neutral Test				
Water-Stained Leaves (B9)	1		Sphagnum Moss				
Field Observations:		<u> </u>	Opilagilalii Wooo	(DO) (LIXIX 1, O)			
	No X Depth (inches):	0					
	No X Depth (inches):						
<u> </u>	No X Depth (inches):		Hydrology Present?	Yes No X			
(includes capillary fringe)	77 - 25km (174.0.09,				
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, pr	revious inspections), if av	vailable:				
,		, ,					
Remarks:							
Tomano.							

Trac Stratum (Plot size: 20	Absolute	Dominant	Indicator	Dominance Test weeksheets	
ree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:	
				Number of Dominant Species That Are OBL, FACW, or FAC:	0 (A)
·					(/1)
· · ·				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: Mul	tiply 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
	_			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 Veg	etation
				2 - Dominance Test is >50%	
				3 - Prevalence Index is ≤3.0 ¹	
		Total Cover		Problematic Hydrophytic Vegetatio	n ¹ (Explain)
50% of total cover:	20%	of total cover:		<u> </u>	
Herb Stratum (Plot size: 30)					
Gossypium hirsutum	100	Yes	UPL	¹ Indicators of hydric soil and wetland hy	vdrology must b
				present, unless disturbed or problemati	
				Definitions of Four Vegetation Strata	
				Tree – Woody plants, excluding vines,	3 in. (7.6 cm) o
	_			more in diameter at breast height (DBH	
				height.	
	_			1	
				Sapling/Shrub – Woody plants, exclude than 3 in. DBH and greater than 3.28 ft	
				than 3 in. Don and greater than 3.20 it	(i iii) taii.
0.				Herb – All herbaceous (non-woody) pla	
0.		<u> </u>		Herb – All herbaceous (non-woody) pla of size, and woody plants less than 3.2	
0. 1.		-Total Cover		of size, and woody plants less than 3.2	8 ft tall.
0. 1. 2.	100 =	-Total Cover	20		8 ft tall.
0	100 =	-Total Cover	20	of size, and woody plants less than 3.2 Woody Vine – All woody vines greater	8 ft tall.
0. 1. 2. 50% of total cover: Woody Vine Stratum (Plot size: 30	100 = 50 20%		20	of size, and woody plants less than 3.2 Woody Vine – All woody vines greater	8 ft tall.
0. 1. 2. 50% of total cover: Woody Vine Stratum (Plot size: 30	100 = 50 20%		20	of size, and woody plants less than 3.2 Woody Vine – All woody vines greater	8 ft tall.
0. 1. 2. 50% of total cover: Woody Vine Stratum (Plot size: 30	100 = 50 20%		20	of size, and woody plants less than 3.2 Woody Vine – All woody vines greater	8 ft tall.
0. 1. 2. 50% of total cover: Woody Vine Stratum (Plot size: 30			20	of size, and woody plants less than 3.2 Woody Vine – All woody vines greater	8 ft tall.
0. 1. 2. 50% of total cover: Woody Vine Stratum (Plot size: 30			20	of size, and woody plants less than 3.2 Woody Vine – All woody vines greater height.	8 ft tall.
0. 1. 2. 50% of total cover: Woody Vine Stratum (Plot size: 30		of total cover:	20	of size, and woody plants less than 3.2 Woody Vine – All woody vines greater height. Hydrophytic	8 ft tall.
0. 1. 2. 50% of total cover: Woody Vine Stratum (Plot size: 30)	100 = 50 20%		20	of size, and woody plants less than 3.2 Woody Vine – All woody vines greater height.	8 ft tall. than 3.28 ft in

SOIL Sampling Point: W001-UPL

Depth	Matrix	to the dept		x Featur		ator or co	onfirm the absence	or muic	ators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Rem	narks	
0-20	10YR 6/4	100	<u> </u>				Loamy/Clayey		siltv	loam	
									5		
								(
								'			
								-			
1Typo: C=Co	ncentration, D=Dep	lotion PM-	Poducod Matrix N		kod San	d Grains	² I ocation:	DI -Dor	e Lining, M=	Matrix	
	ndicators: (Applica					u Grairis.			blematic Hy		
Histosol (ible to all L	Thin Dark Su			9 T II)) (LRR O)	unc sons .	
	pedon (A2)		Barrier Island						0) (LRR S)		
Black His			(MLRA 15		-	12)		•	Redox (A16)		
	n Sulfide (A4)		Loamy Muck			RR (I)			RA 150A)		
	Layers (A5)		Loamy Gleye	•	. , .	-itit 0)	•	ed Verti	,		
	Bodies (A6) (LRR P,	. T. U)	Depleted Ma		` '				RA 150A, 15	(OB)	
	cky Mineral (A7) (LR		Redox Dark	` '			•		,	F19) (LRR P, T)	
	esence (A8) (LRR U		Depleted Da		` '		Anomalous Bright Floodplain Soils (F20				
	ck (A9) (LRR P, T)	,	Redox Depre	essions	(F8)		(MLRA 153B)				
Depleted	Below Dark Surface	e (A11)	Marl (F10) (L	.RR U)			Red Parent Material (F21)				
Thick Da	rk Surface (A12)		Depleted Oc	hric (F1	1) (MLR	A 151)	Very Shallow Dark Surface (F22)				
Coast Pra	airie Redox (A16) (N	ILRA 150A)Iron-Mangan	ese Ma	sses (F1	2) (LRR (O, P, T) (outside MLRA 138, 152A in FL, 154)				
Sandy M	ucky Mineral (S1) (L	.RR O, S)	Umbric Surfa	ace (F13	3) (LRR I	P, T, U)	Barrier Islands Low Chroma Matrix (TS7				
Sandy Gl	eyed Matrix (S4)		Delta Ochric	(F17) (I	VILRA 1	51)	(ML	RA 153E	3, 153D)		
Sandy Re	edox (S5)		Reduced Ve	rtic (F18) (MLRA	150A, 1	50B) Other	(Explain	in Remarks)		
Stripped	Matrix (S6)		Piedmont Flo	oodplain	Soils (F	19) (MLR	A 149A)				
	face (S7) (LRR P, S		Anomalous E	-							
	e Below Surface (S8	3)	(MLRA 14							egetation and	
(LRR S	5, T, U)		Very Shallow		,	,		•	rology must	•	
			(MLRA 13	8, 152A	in FL, 1	54)	unle	ess distu	rbed or probl	ematic.	
	ayer (if observed):										
Type:	Nor	ne									
Depth (in	ches):	0					Hydric Soil Pres	ent?	Yes	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: 9/19/22
Applicant/Owner: Silicon Ranch Corpora	ation		State: TN	Sampling Point: W002-W
Investigator(s): Benjamin Burdette and Jake		tion, Township, Range:		<u>-</u>
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 12		Long. o.	9.515656 NWI classificat	
Are climatic / hydrologic conditions on the site	·	Yes X		explain in Remarks.)
Are Vegetation X, Soil , or Hydro			ircumstances" present?	•
<u> </u>	<u></u>			
Are Vegetation, Soil, or Hydro			olain any answers in Re	•
SUMMARY OF FINDINGS – Attach	Site map snowing san	1pling point location	ons, transects, iii ———	portant leatures, etc.
Hydrophytic Vegetation Present?		Is the Sampled Area		
Hydric Soil Present?	 	within a Wetland?	Yes X	No
Wetland Hydrology Present?	Yes X No			
Remarks:				
PEM wetland				
DP25-W2				
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	
X Surface Water (A1)	Aquatic Fauna (B13)			ed Concave Surface (B8)
High Water Table (A2)	Marl Deposits (B15) (LRI	R U)	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	on (C4)	Crayfish Burrows	(C8)
Drift Deposits (B3)	Recent Iron Reduction in	Tilled Soils (C6)	Saturation Visible	on Aerial Imagery (C9)
X Algal Mat or Crust (B4)	Thin Muck Surface (C7)		Geomorphic Posit	ion (D2)
Iron Deposits (B5)	Other (Explain in Remark	ks)	Shallow Aquitard ((D3)
Inundation Visible on Aerial Imagery (B	7)		FAC-Neutral Test	(D5)
Water-Stained Leaves (B9)			Sphagnum Moss ((D8) (LRR T, U)
Field Observations:				
Surface Water Present? Yes X	No Depth (inches):	1		
Water Table Present? Yes	No X Depth (inches):	0		
Saturation Present? Yes	No X Depth (inches):	0 Wetland I	Hydrology Present?	Yes X No
(includes capillary fringe)				
Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, pre	evious inspections), if a	vailable:	
Dara arka				
Remarks:				

W002-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. 75 x 5 = 2. UPL species 375 3. 100 (A) 400 Column Totals: (B) 4. Prevalence Index = B/A = 4.00 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 Vegetation¹ (Explain) =Total Cover 50% of total cover: 20% of total cover: Herb Stratum (Plot size: 30) Panicum miliaceum 75 UPL Yes ¹Indicators of hydric soil and wetland hydrology must be 2. Lindernia dubia 15 Nο OBL present, unless disturbed or problematic. 3. Ammannia coccinea 10 OBL **Definitions of Four Vegetation Strata:** No 4. Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or 5. more in diameter at breast height (DBH), regardless of 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: 30) Woody Vine Stratum (Plot size: 2. 3. **Hydrophytic** =Total Cover Vegetation 50% of total cover: 20% of total cover: Present? Yes X No Remarks: (If observed, list morphological adaptations below.) Heavily disturbed vegetation

SOIL Sampling Point: W002-W

Profile Description: (Describe to the depth needed to document the indicator or or Depth Matrix Redox Features				ator or co	ontirm the absence of	e of indicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	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	С	М	Loamy/Clayey	Prominent redox concentrations
						_ _ _		
1Type: C=Cc	ncentration, D=Depl			 1S=Mas	ked San	d Grains	² l ocation: F	
						u Grains.		for Problematic Hydric Soils ³ :
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1) Histosol (A2) Barrier Islands 1 cm Muck (S12) Black Histic (A3) (MLRA 153B, 153D) Coast Pr. Hydrogen Sulfide (A4) Stratified Layers (A5) Organic Bodies (A6) (LRR P, T, U) Muck Presence (A8) (LRR P, T, U) Pepleted Dark Surface (F7) Anomalou 1 cm Muck (A9) (LRR P, T) Pepleted Below Dark Surface (A11) Thick Dark Surface (A12) Coast Princh Dark Surface (A16) (MLRA 150A) Sandy Mucky Mineral (S1) (LRR P, T, U) Sandy Redox (S5) Bedice of Matrix (F2) Depleted Dark Surface (F7) Anomalou Coutside (MLRA 150A) Fiedmont Princh Dark Surface (A12) Coast Prairie Redox (A16) (MLRA 150A) Depleted Dark Surface (F11) (MLRA 151) Sandy Mucky Mineral (S1) (LRR O, S) Umbric Surface (F13) (LRR P, T, U) Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B) Dark Surface (S7) (LRR P, S, T, U) Polyvalue Below Surface (S8) (MLRA 149A, 153C, 153D) I cm Mark Figure (MLRA 150A) Anomalous Bright Floodplain Soils (F20) (MLRA 149A, 153C, 153D) I cm Muck (MLRA 150A) Anomalous Bright Floodplain Soils (F20) Anomalous Bright Floodplain Soils (F20)					cuck (A9) (LRR O) cuck (A10) (LRR S) crairie Redox (A16) dide MLRA 150A) dide MLRA 150A, 150B) int Floodplain Soils (F19) (LRR P, T) cous Bright Floodplain Soils (F20) A 153B) rent Material (F21) callow Dark Surface (F22) dide MLRA 138, 152A in FL, 154) dislands Low Chroma Matrix (TS7) A 153B, 153D) Explain in Remarks) ors of hydrophytic vegetation and and hydrology must be present,			
5 414 1	// L		(MLRA 13	8, 152A	in FL, 1	54)	unles	s disturbed or problematic.
Type:	.ayer (if observed): Non-	Δ						
Depth (in		0					Hydric Soil Prese	nt? Yes X No
Remarks: 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 Corporati	ion	·	State: TN	Sampling Point: W002-UPL			
Investigator(s): Benjamin Burdette and Jake I	rvin Sec	tion, Township, Range:					
Landform (hillside, terrace, etc.): hillside		relief (concave, convex, ı	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	typical for this time of year?	Yes X	No(If no, e	explain in Remarks.)			
Are Vegetation, Soil, or Hydrold	•		ircumstances" present				
Are Vegetation, Soil, or Hydrold			' Dlain any answers in Re				
SUMMARY OF FINDINGS – Attach	<u> </u>		-				
Hydrophytic Vegetation Present?	Yes No X	Is the Sampled Area					
	Yes No X	within a Wetland?	Yes	No X			
Wetland Hydrology Present?	Yes No X						
Upland point corresponding to W2. In a cotton DP26-UP	n tieta.						
HYDROLOGY							
Wetland Hydrology Indicators:				(minimum of two required)			
Primary Indicators (minimum of one is require	ed; check all that apply) Aquatic Fauna (B13)		Surface Soil Crac				
Surface Water (A1)			ed Concave Surface (B8)				
High Water Table (A2)	Marl Deposits (B15) (LRI		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		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 Remark	KS)	Shallow Aquitard FAC-Neutral Test				
Water-Stained Leaves (B9)	,		Sphagnum Moss				
Field Observations:			Opilagilaii iiiocc	(DO) (ENR 1, 0)			
	No X Depth (inches):	0					
	No X Depth (inches):						
Saturation Present? Yes	No X Depth (inches):		Hydrology Present?	Yes No X			
(includes capillary fringe)			,				
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, pr	revious inspections), if a	vailable:				
·	-						
Remarks:							
1000.2							

	Absolute	Dominant	Indicator	
ree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:
				Number of Dominant Species
				That Are OBL, FACW, or FAC: 0
				Total Number of Dominant
				Species Across All Strata: 1
				Percent of Dominant Species
				That Are OBL, FACW, or FAC: 0.0%
				Prevalence Index worksheet:
				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
				FACU species 0 x 4 = 0
				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 ¹
		Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain
50% of total cover:		of total cover:		
erb Stratum (Plot size: 30)				
Gossypium hirsutum	100	Yes	UPL	1
Сосоургани писалани	100	100		¹ Indicators of hydric soil and wetland hydrology m present, unless disturbed or problematic.
				Definitions of Four Vegetation Strata:
				Tree – Woody plants, excluding vines, 3 in. (7.6 c more in diameter at breast height (DBH), regardle
				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
·				of size, and woody plants less than 3.28 ft tall.
	100	Tatal Cause		Manda Vina All was divising a master than 2.20
500/ 51 1 1		=Total Cover	00	Woody Vine – All woody vines greater than 3.28 height.
50% of total cover: 5	0 20%	of total cover:	20	Tioight.
Woody Vine Stratum (Plot size: 30)				
				Hydrophytic
		Total Cover		Vegetation
	20%	of total cover:		Present? Yes No X
50% of total cover:		0. 1010. 0010		

SOIL Sampling Point: W002-UPL

	ription: (Describe t	o the dept				ator or co	onfirm the	absence c	of indica	ators.)		
Depth	Matrix			Featu		. 2	- .			_		
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Text	ure		Rem	arks	
0-20	10YR 6/4	100					Loamy/0	Clayey		silty	loam	
			-									
									-			
¹ Type: C=Co	oncentration, D=Depl	etion. RM=	Reduced Matrix. M	IS=Mas	ked San	d Grains.	2L	 _ocation: F	PL=Pore	Lining, M=I	Matrix.	
• •	ndicators: (Applica					_				lematic Hy		s ³ :
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 Mucky	y Miner	al (F1) (L	RR O)		(outsi	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 Mat	trix (F3))			(outsi	ide MLR	RA 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) (LR	R P, T)
Muck Pre	esence (A8) (LRR U)		Depleted Dar	k Surfa	ce (F7)			Anomal	ous Brig	ht Floodpla	in Soils (F	20)
	ck (A9) (LRR P, T)		Redox Depre		(F8)			•	A 153B)			
	Below Dark Surface	(A11)	Marl (F10) (L				_	_		erial (F21)		
	rk Surface (A12)		Depleted Och				—	_ ′		ark Surface	` '	
	airie Redox (A16) (M		<u> </u>				O, P, T)	•		RA 138, 152		
	ucky Mineral (S1) (L	RR (), (S)	Umbric Surfa							_ow Chroma	a Matrix (157)
	leyed Matrix (S4) edox (S5)		Delta Ochric Reduced Ver				EOD)	•	A 153B,	•		
	Matrix (S6)		Piedmont Flo	•	, ,		_	Other (E	-хріаін і	n Remarks)		
	face (S7) (LRR P, S ,	T 11)	Anomalous B									
	e Below Surface (S8)		(MLRA 149	-			-0)	3Indicate	ors of hy	drophytic v	egetation	and
	S, T, U)	,	Very Shallow						-	ology must l	-	
(=:::::	-, -, -,		(MLRA 138		•	,			-	ped or probl		-,
Restrictive L	_ayer (if observed):									<u> </u>		
Type:	Non	е										
Depth (ir	nches):	0					Hydric S	Soil Prese	nt?	Yes	No	X
Remarks:							<u> </u>					

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/Laude	erdale	Sampling Date: 9/20/22
Applicant/Owner: Silicon Ranch Corporati	ion	·	State: TN	Sampling Point: W003-W
Investigator(s): Benjamin Burdette and Jake I	rven Sec	tion, Township, Range:		· · ·
Landform (hillside, terrace, etc.): terrace	_	relief (concave, convex, no	one): concave	Slope (%): 0-7
Subregion (LRR or MLRA): LRR P, MLRA 13		Long: 89.5	•	Datum: NAD83
Soil Map Unit Name: Loring silt loam, 2 to 5 p			NWI classificati	
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 Hydrold	ogv significantly distur		cumstances" present?	
Are Vegetation, Soil, or Hydrok			in any answers in Re	
SUMMARY OF FINDINGS – Attach	<u> </u>		-	•
Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area		
		within a Wetland?	Yes X	No
	Yes X No			
Remarks:	<u> </u>			
PEM wetland in cotton field				
DP3-W2				
HYDROLOGY				
Wetland Hydrology Indicators:		<u>S</u>	econdary Indicators ((minimum of two required)
Primary Indicators (minimum of one is require	ed; check all that apply)		X Surface Soil Crack	
X 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 (I	
Water Marks (B1)	Oxidized Rhizospheres of	on Living Roots (C3)	Dry-Season Water	r Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iro	on (C4)	Crayfish Burrows ((C8)
Drift Deposits (B3)	Recent Iron Reduction in	n Tilled Soils (C6)	Saturation Visible	on Aerial Imagery (C9)
X Algal Mat or Crust (B4)	Thin Muck Surface (C7)	_	Geomorphic Positi	ion (D2)
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 X	No Depth (inches):	1		
Water Table Present? Yes	No X Depth (inches):			
Saturation Present? Yes	No X Depth (inches):	0 Wetland Hy	drology Present?	Yes X No
(includes capillary fringe)				
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, pr	evious inspections), if avai	ilable:	
Remarks:	- <u> </u>			
Tromano.				

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. 0 x 5 = 2. UPL species 0 0 (A) 3. 0 Column Totals: (B) 4. 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 Vegetation¹ (Explain) =Total Cover 50% of total cover: 20% of total cover: Herb Stratum (Plot size: 30) 1. Panicum ¹Indicators 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	to the dept	h needed to docu	ıment th	ne indica	ator or co	onfirm the a	bsence o	of indicators.)
Depth	 Matrix	•		k Featur					,
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Textu	re	Remarks
0-4	10YR 4/1	95	10YR 4/6	5	С	М	Loamy/C	layey	Prominent redox concentrations
4-16	10YR 5/1	80	10YR 4/6	20	С	M	Loamy/C	layey	Prominent redox concentrations
16-20	7.5YR 5/6	100					Loamy/C	layey	silt loam
¹ Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, M	 1S=Mas	ked San	d Grains.	² Lo	ocation: F	PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators: (Applica	ble to all L	RRs, unless othe	rwise n	oted.)		Inc	dicators f	or Problematic Hydric Soils ³ :
Histosol	(A1)		Thin Dark Sเ	ırface (S	9) (LRR	S, T, U)		1 cm Mu	uck (A9) (LRR O)
Histic Ep	ipedon (A2)		Barrier Island	ds 1 cm	Muck (S	12)		_ 2 cm Мі	uck (A10) (LRR S)
Black His	stic (A3)		(MLRA 15	3B, 153	D)			Coast P	rairie Redox (A16)
Hydrogei	n Sulfide (A4)		Loamy Muck	y Minera	al (F1) (L	RR O)		_	de MLRA 150A)
Stratified	Layers (A5)		Loamy Gleye	ed Matrix	(F2)	·		Reduce	d Vertic (F18)
	Bodies (A6) (LRR P,	T, U)	X Depleted Ma					– (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		` '				ous Bright Floodplain Soils (F20)
	ck (A9) (LRR P, T)		Redox Depre		` ,			_	A 153B)
	Below Dark Surface	(A11)	Marl (F10) (L		(-)			•	rent Material (F21)
	rk Surface (A12)	()	Depleted Oc		1) (MLR /	A 151)		_	allow Dark Surface (F22)
	airie Redox (A16) (M	ILRA 150A		,	, .	,	O. P. T)	_ '	de MLRA 138, 152A in FL, 154)
	ucky Mineral (S1) (L		Umbric Surfa		-		-, - , -,	•	slands Low Chroma Matrix (TS7)
	leyed Matrix (S4)	0, 0,	Delta Ochric						A 153B, 153D)
	edox (S5)		Reduced Ver				50B)		Explain in Remarks)
	Matrix (S6)		Piedmont Flo	•				_ 011101 (E	explain in Remarks)
	face (S7) (LRR P, S	T 11\	Anomalous E						
	e Below Surface (S8		(MLRA 14	-			-0)	3Indicate	ors of hydrophytic vegetation and
	•)	Very Shallow						
(LKK	S, T, U)		(MLRA 13						nd hydrology must be present, s disturbed or problematic.
Restrictive L	ayer (if observed):		(210110	-, .o <u>-</u> , .	=, .	· · ·	1	411100	o diotarboa or problematic.
Type:	Non	е							
Depth (in	iches):	0					Hydric S	oil Prese	nt? Yes X No
Remarks:									
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/La	uderdale	Sampling Date: 9/19/2022
Applicant/Owner: Silicon Ranch Corp	oration	_	State: TN	Sampling Point: W003-UPI
Investigator(s): Benjamin Burdette and Ja	ake Irvin S	Section, Township, Range:		- -
Landform (hillside, terrace, etc.): terrace		cal relief (concave, convex,		Slope (%): 0-2
Subregion (LRR or MLRA): LRR P, MLR			89.517908	Datum: NAD83
Soil Map Unit Name: Loring silt loam, 5 to		Long	NWI classifica	
-				-
Are climatic / hydrologic conditions on the				explain in Remarks.)
Are Vegetation, Soil, or Hy			Circumstances" presen	
Are Vegetation, Soil, or Hy	drologynaturally proble	ematic? (If needed, ex	plain any answers in F	Remarks.)
SUMMARY OF FINDINGS – Atta	ch site map showing s	ampling point locati	ions, transects, ir	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			<u></u>
Remarks:				
Upland point corresponding to W3. In a c	otton field.			
DP4-UP				
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators	(minimum of two required)
Primary Indicators (minimum of one is re	quired; check all that apply)		Surface Soil Cra	cks (B6)
Surface Water (A1)	Aquatic Fauna (B13)		Sparsely Vegeta	ted Concave Surface (B8)
High Water Table (A2)	Marl Deposits (B15) ((LRR U)	Drainage Pattern	s (B10)
Saturation (A3)	Hydrogen Sulfide Od	or (C1)	Moss Trim Lines	(B16)
Water Marks (B1)	Oxidized Rhizosphere	es on Living Roots (C3)	Dry-Season Wat	er Table (C2)
Sediment Deposits (B2)	Presence of Reduced	d Iron (C4)	Crayfish Burrows	s (C8)
Drift Deposits (B3)	Recent Iron Reductio	n in Tilled Soils (C6)	Saturation Visible	e on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Thin Muck Surface (C		Geomorphic Pos	` '
Iron Deposits (B5)	Other (Explain in Ren	narks)	Shallow Aquitard	` '
Inundation Visible on Aerial Imagery	(B7)		FAC-Neutral Tes	
Water-Stained Leaves (B9)			Sphagnum Moss	(D8) (LRR T, U)
Field Observations:				
Surface Water Present? Yes	No X Depth (inche	· 		
Water Table Present? Yes	No X Depth (inche	· 	5	
Saturation Present? Yes	No X Depth (inche	es): 0 Wetland	Hydrology Present?	Yes No _X
(includes capillary fringe) Describe Recorded Data (stream gauge,	manitaring wall parial photos	nrovious inspections) if s	weilebler	
Describe Recorded Data (stream gauge,	monitoring well, aerial priotos	, previous irispections), ii a	ivaliable.	
Remarks:				

Troc Stratum (Diataire) 20	Absolute	Dominant	Indicator	Deminance Test warksheet
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:
2.				Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
3. 4.				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)
7.				Prevalence Index worksheet:
8		T-4-1 0		Total % Cover of: Multiply by:
F00/ -54-4-1		=Total Cover		OBL species 0 x1 = 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 ¹
		=Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20%	of total cover:		
Herb Stratum (Plot size: 30)				
1. Gossypium hirsutum	100	Yes	UPL	¹ 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.				Harle All banks are seen for an area to be also to an area than
11				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
12				,
	100	=Total Cover		Woody Vine - All woody vines greater than 3.28 ft in
50% of total cover: 5	0 20%	of total cover:	20	height.
Woody Vine Stratum (Plot size: 30)				
1.				
2				
3.				
4.				
5.				Hadronby 4to
		=Total Cover		Hydrophytic Vegetation
50% of total cover:	20%	of total cover:		Present? Yes No X
Pomarka: (If absorved, list marphalagical adaptation	no holow)			<u> </u>
Remarks: (If observed, list morphological adaptation	ns below.)			

SOIL Sampling Point: W003-UPL

Profile Desc Depth	cription: (Describe t Matrix	the dep		ıment tl k Featur		ator or co	onfirm the absence	of indic	cators.)	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Ren	narks
0.20	10VD F/4	100					Loomy/Clayou		oiltu	loom
0-20	10YR 5/4	100					Loamy/Clayey		SIIIY	loam
	-									
	oncentration, D=Depl					d Grains.			e Lining, M=	
-	Indicators: (Applica	ble to all I							_	dric Soils³:
Histosol			Thin Dark Su	-					9) (LRR O)	
	oipedon (A2)		Barrier Island		•	12)			10) (LRR S)	
	stic (A3)		(MLRA 15		•				Redox (A16)	
	en Sulfide (A4)		Loamy Muck	•	· , ·	RR O)	•		RA 150A)	
	d Layers (A5)		Loamy Gleye					ed Verti	` ,	=-=\
	Bodies (A6) (LRR P,		Depleted Ma	, ,			•		RA 150A, 1	•
	icky Mineral (A7) (LR		Redox Dark		` '					(F19) (LRR P, T)
	resence (A8) (LRR U))	Depleted Da						-	in Soils (F20)
	ick (A9) (LRR P, T)	(0.4.4)	Redox Depre		(F8)		•	RA 153E	•	
	d Below Dark Surface	(A11)	Marl (F10) (L		1\ /MI D	A 454\			aterial (F21) Dark Surface	(F22)
	ark Surface (A12) rairie Redox (A16) (M	II DA 150A	Depleted Oc							
	laine Redox (A16) (M lucky Mineral (S1) (L		Iron-Mangan Umbric Surfa							2A in FL, 154) a Matrix (TS7)
	Gleyed Matrix (S4)	KK 0, 3)	Delta Ochric	-					3, 153D)	a Maurx (137)
	Redox (S5)		Reduced Ve						in Remarks	1
	Matrix (S6)		Piedmont Flo	•	, .			(Explain	III I Comando	,
	rface (S7) (LRR P, S ,	T U)	Anomalous E		-					
	ie Below Surface (S8	•	(MLRA 14	-				ators of h	nvdrophytic v	egetation and
	S, T, U)	,	Very Shallow						rology must	•
`	, , ,		(MLRA 13						rbed or prob	•
Restrictive	Layer (if observed):									
Type:	Non	е								
Depth (ii	nches):	0					Hydric Soil Pres	ent?	Yes	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/Lauderdale	Sampling Date: 9/20/22
Applicant/Owner: Silicon Ranch Corporation	State: TI	N Sampling Point: W004-W
Investigator(s): Benjamin Burdette and Jake Irven	Section, Township, Range:	
Landform (hillside, terrace, etc.): terrace	Local relief (concave, convex, none): concave	Slope (%): 2-5
Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.715		Datum: NAD83
Soil Map Unit Name: see remarks		ification: N/A
·		-
Are climatic / hydrologic conditions on the site typical for this tim		no, explain in Remarks.)
Are Vegetation, Soil, or Hydrology signification		sent? Yes X No
Are Vegetation, Soil, or Hydrologynaturall	problematic? (If needed, explain any answers i	n Remarks.)
SUMMARY OF FINDINGS – Attach site map show	ring sampling point locations, transects	, important features, etc.
Hydrophytic Vegetation Present? Yes X No	Is the Sampled Area	
Hydric Soil Present? Yes X No	within a Wetland?	(No
Wetland Hydrology Present? Yes X No	_ _	
Remarks:	<u> </u>	
PFO wetland		
Caile, Adler ailt leam, O to 2 persent alance, accesionally fleade	N. Mamphia cilt lagm 12 to 20 percent clance covers	ly araded morthern phase
Soils: Adler silt loam, 0 to 2 percent slopes, occasionally floode DP5-W4	ı; Mempnis siit Ioam, 12 to 20 percent slopes, severe	iy eroded, northern phase
DF 3-444		
HYDROLOGY		
	Secondary Indicate	tors (minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that a		
Surface Water (A1) Aquatic Fauna		etated Concave Surface (B8)
	(B15) (LRR U) X Drainage Patt	
	ride Odor (C1) Moss Trim Lir	
		Vater Table (C2)
	educed Iron (C4) Crayfish Burro	
X Drift Deposits (B3) Recent Iron R	eduction in Tilled Soils (C6) Saturation Vis	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Su	rface (C7) Geomorphic F	osition (D2)
Iron Deposits (B5) Other (Explain	in Remarks)Shallow Aquit	ard (D3)
Inundation Visible on Aerial Imagery (B7)	X FAC-Neutral	Гest (D5)
Water-Stained Leaves (B9)	Sphagnum M	oss (D8) (LRR T, U)
Field Observations:		
	n (inches):0	
	n (inches):0	
	n (inches): 0 Wetland Hydrology Presen	t? Yes X No
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial	photos, previous inspections), if available:	
Remarks:		

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size:30)	% Cover	Species?	Status	Dominance Test worksheet:
Platanus occidentalis	50	Yes	FACW	Number of Dominant Species
2. Salix nigra	25	Yes	OBL	That Are OBL, FACW, or FAC:5 (A)
3. <u>Liquidambar styraciflua</u>	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 ¹
	17 :	=Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover: 9		of total cover:	4	
Herb Stratum (Plot size: 30)		or total cover.		
	5	No	EAC	4
Toxicodendron radicans Microstogium viminoum	5 75		FAC	¹ Indicators of hydric soil and wetland hydrology must be
2. Microstegium vimineum	75	Yes	FAC	present, unless disturbed or problematic.
3. Rubus allegheniensis	5	No No	UPL	Definitions of Four Vegetation Strata:
4. Parthenocissus quinquefolia	5	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				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
12.				
	90	=Total Cover		Woody Vine - 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)	<u></u>			
1.				
2.				
3.				
5.				
·		=Total Cover		Hydrophytic
50% of total cover:		of total cover:		Vegetation Present? Yes X No
		Or total cover.		11030HC: 103_X
Remarks: (If observed, list morphological adaptations	s below.)			

SOIL Sampling Point: W004-W

	ription: (Describe	to the dept				ator or co	onfirm the absence	of indicators.)
Depth (inches)	Matrix	<u></u> %		Featur		Loc ²	Taytura	Domarka
(inches)	Color (moist)		Color (moist)		Type ¹		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 RM-	Peduced Matrix M	 1S-Mae	ked San	d Grains	² l ocation:	PL=Pore Lining, M=Matrix.
	Indicators: (Applica					u Oranis.		for Problematic Hydric Soils ³ :
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) (L	RR O)	(out	side MLRA 150A)
Stratified	l 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					ont Floodplain Soils (F19) (LRR P, T)
	esence (A8) (LRR U)		Depleted Dai					alous Bright Floodplain Soils (F20)
	ck (A9) (LRR P, T)	(011)	Redox Depre		(F8)		•	RA 153B)
	l Below Dark Surface ark Surface (A12)	(A11)	Marl (F10) (L Depleted Ocl		1) (MI D	۸ 151)		arent Material (F21) Shallow Dark Surface (F22)
	rairie Redox (A16) (M	ILRA 150A						side MLRA 138, 152A in FL, 154)
	lucky Mineral (S1) (L		Umbric Surfa					Islands Low Chroma Matrix (TS7)
	ileyed Matrix (S4)	, ,	Delta Ochric					RA 153B, 153D)
	edox (S5)		Reduced Ver				50B) Other	(Explain in Remarks)
Stripped	Matrix (S6)		Piedmont Flo	odplain	Soils (F	19) (MLR	A 149A)	
Dark Su	face (S7) (LRR P, S	, T, U)	Anomalous E	Bright Fl	oodplain	Soils (F2	0)	
	e Below Surface (S8)	(MLRA 14					tors 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 X 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 Corporat	ion	State: TN Sampling Point: W004-UPL
Investigator(s): Benjamin Burdette and Jake I	Irvin Section, Township, Range	
Landform (hillside, terrace, etc.): terrace	Local relief (concave, convex	
Subregion (LRR or MLRA): LRR P, MLRA 13		-89.511957 Datum: NAD83
	to 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 Hydrole	·· —	Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrole		explain any answers in Remarks.)
		tions, transects, important features, etc.
Hydrophytic Vegetation Present?	Yes No X Is the Sampled Area	
	Yes No X within a Wetland?	Yes No_X_
	Yes No X	
Upland point corresponding to W4. In forest a DP6-UP	adjacent 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)	Geomorphic Position (D2)
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)
Field Observations: Surface Water Present? Yes	No X Depth (inches): 0	
Surface Water Present? Yes Water Table Present? Yes	No X Depth (inches): 0	
Saturation Present? Yes		d Hydrology Present? Yes No X
(includes capillary fringe)	NO A Deput (mones).	inyulology Flesent: 165 165
	nitoring well, aerial photos, previous inspections), if	availahle.
Dodding recorded Data (cream gatege,	morning won, donar priotoc, providuo mopocaere, ,	avallable.
Remarks:		
Tromane.		

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size:)	% Cover	Species?	Status	Dominance Test worksheet:
1. 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 species87 x 3 =261
Liquidambar styraciflua	2	No	FAC	FACU species 5 x 4 = 20
2. Ulmus americana	10	Yes	FAC	UPL species 15 x 5 = 75
3. Carya 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 ¹
	17 :	Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover: 9		of total cover:	4	
Herb Stratum (Plot size: 30)				
1. Persicaria virginiana	10	Yes		1
Lonicera japonica	5	Yes	FACU	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3.		103	TAGO	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.
9.				
10.				Herb – All herbaceous (non-woody) plants, regardless
11.				of size, and woody plants less than 3.28 ft tall.
12				
		=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				
4				
5				Hydrophytic
	:	=Total Cover		Vegetation
50% of total cover:	20%	of total cover:		Present? Yes No X
Remarks: (If observed, list morphological adaptation	s below)			
rtemante. (ii esserved, net merphelegical adaptation	o 50.011.)			

SOIL Sampling Point: W004-UPL

	ription: (Describe	to the depth				ator or co	onfirm the absence	of indicators.)	
Depth	Matrix			x Featur		1 - 2	T	_	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture		Remarks
0-16	10YR 5/3	100					Loamy/Clayey	S	ilty loam
16-20	10YR 5/3	95					Loamy/Clayey	s	ilty loam
								-	
									_
¹ Type: C=Co	oncentration, D=Depl	etion, RM=F	Reduced Matrix, M	MS=Mas	ked San	d Grains.	² Location:	PL=Pore Lining,	M=Matrix.
	Indicators: (Applica							for Problematic	
Histosol	(A1)		Thin Dark Su	ırface (S	39) (LRR	S, T, U)	1 cm M	luck (A9) (LRR C))
Histic Ep	pipedon (A2)		Barrier Island	ds 1 cm	Muck (S	12)	2 cm M	luck (A10) (LRR	S)
Black Hi	stic (A3)		(MLRA 15	3B, 153	BD)		Coast	Prairie Redox (A1	16)
Hydroge	n Sulfide (A4)		Loamy Muck	y Miner	al (F1) (L	RR O)	(outs	side MLRA 150A)
Stratified	I Layers (A5)		Loamy Gleye	ed Matri	x (F2)		Reduc	ed Vertic (F18)	
	Bodies (A6) (LRR P,	-	Depleted Ma	` '			•	side MLRA 150A	•
	cky Mineral (A7) (LR	-	Redox Dark		` '				ils (F19) (LRR P, T)
	esence (A8) (LRR U)		Depleted Da					alous Bright Flood	lplain Soils (F20)
	ck (A9) (LRR P, T)	(444)	Redox Depre		(F8)		•	RA 153B)	14)
	l Below Dark Surface ark Surface (A12)	e (A11)	Marl (F10) (L		1) (MI D	A 151\		arent Material (F2 hallow Dark Surfa	,
	rairie Redox (A12)	II DA 150A\	Depleted Oclubration Iron-Mangan						152A in FL, 154)
	lucky Mineral (S1) (L		Umbric Surfa						oma Matrix (TS7)
	ileyed Matrix (S4)	0, 0,	Delta Ochric					RA 153B, 153D)	oma wamx (101)
	edox (S5)		Reduced Ver				•	(Explain in Rema	rks)
	Matrix (S6)		Piedmont Flo	-				` '	,
	face (S7) (LRR P, S	, T, U)	Anomalous E						
Polyvalu	e Below Surface (S8)	(MLRA 14	9A, 153	C, 153D)	³ Indica	tors of hydrophyt	ic vegetation and
(LRR	S, T, U)		Very Shallow	/ Dark S	Surface (I	F22)	wetl	and hydrology mเ	ust be present,
			(MLRA 13	8, 152A	in FL, 1	54)	unle	ss disturbed or p	roblematic.
	_ayer (if observed):								
Type:	Non								
Depth (ir	nches):	0					Hydric Soil Pres	ent? Yes	No X
Remarks:	il l 40\/D 5/0 50	/ -:!!!							
16-20 2nd so	oil color: 10YR 5/2 5%	silty loam							

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: 9/20/22
Applicant/Owner: Silicon Ranch Corpora	ation	<u> </u>	State: TN	Sampling Point: W005-W
Investigator(s): Benjamin Burdette and Jake	Irven Se	ction, Township, Range:		<u>-</u>
Landform (hillside, terrace, etc.): hillside		relief (concave, convex, no	one): concave	Slope (%): 2-5
Subregion (LRR or MLRA): LRR P, MLRA 1		Long: 89.		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	ology significantly distu		cumstances" present	
Are Vegetation , Soil , or Hydro			ain any answers in Re	
SUMMARY OF FINDINGS – Attach	<u> </u>		-	•
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: PFO wetland Soils: Adler silt loam, 0 to 2 percent slopes, DP7-W5	occasionally flooded; Memph	iis silt loam, 12 to 20 perce	ent slopes, severely er	oded, 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 Crack	
Surface Water (A1)	Aquatic Fauna (B13)	_		ed Concave Surface (B8)
—— High Water Table (A2)	Marl Deposits (B15) (LF		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 Ir	-	X Crayfish Burrows	
X Drift Deposits (B3)	Recent Iron Reduction i	` '		on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Thin Muck Surface (C7)	-	Geomorphic Posit	
Iron Deposits (B5)	Other (Explain in Rema	rks)	Shallow Aquitard	
Inundation Visible on Aerial Imagery (B	7)	_	FAC-Neutral Test	` ,
X 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):			, .,
Saturation Present? Yes	No X Depth (inches):	: 0 Wetland H	ydrology Present?	Yes <u>X</u> No
(includes capillary fringe)	Yearing well as violable to	il irtiana) if au	9 1.1	
Describe Recorded Data (stream gauge, mo	nitoring well, aerial priolos, p	revious inspections), it ava	allable:	
Remarks:				

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:
1. Liriodendron tulipifera	10	No	FACU	Number of Dominant Species
2. Ulmus americana	20	Yes	FAC	That Are OBL, FACW, or FAC:6 (A)
3. Celtis spp.	5	No		Total Number of Dominant
4. Catalpa speciosa	5	No	FACU	Species Across All Strata: 7 (B)
5. Quercus nigra	10	No	FAC	Percent of Dominant Species
6. Salix nigra	15	Yes	OBL	That Are OBL, FACW, or FAC: 85.7% (A/B)
7.				Prevalence Index worksheet:
8.				Total % Cover of: Multiply by:
	65	=Total Cover		OBL species 15 x 1 = 15
50% of total cover:	33 20%	of total cover:	13	FACW species 0 x 2 = 0
Sapling/Shrub Stratum (Plot size: 30)			FAC species 75 x 3 = 225
1. Ulmus americana	20	Yes	FAC	FACU species 25 x 4 = 100
2. Catalpa speciosa	10	Yes	FACU	UPL species 0 x 5 = 0
3.				Column Totals: 115 (A) 340 (B)
4.				Prevalence Index = B/A = 2.96
5.				Hydrophytic Vegetation Indicators:
6.				1 - Rapid Test for Hydrophytic Vegetation
7.				X 2 - Dominance Test is >50%
8.				$\frac{\times}{\times}$ 2 - Bottimarice Test is >30% $\frac{\times}{\times}$ 3 - Prevalence Index is \leq 3.01
6.	30	=Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
F00/ of total acres			0	Problematic Hydrophytic Vegetation (Explain)
	<u>15 </u>	of total cover:	6	
(1 lot size.	4.0			
1. Microstegium vimineum	10	Yes	FAC	¹ Indicators of hydric soil and wetland hydrology must be
2. Persicaria virginiana	5	Yes	FAC	present, unless disturbed or problematic.
3. Toxicodendron radicans	10	Yes	FAC	Definitions of Four Vegetation Strata:
4				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
4. 5.				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
· -				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
5.				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
5. 6				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
5. 6. 7.				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
5. 6. 7. 8.				 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.
5. 6. 7. 8. 9. 10.				 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
5. 6. 7. 8. 9. 10. 11.				 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.
5. 6. 7. 8. 9. 10.		=Total Cover		 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.
5. 6. 7. 8. 9. 10. 11. 12.		=Total Cover	5	 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
5. 6. 7. 8. 9. 10. 11. 12. 50% of total cover:		=Total Cover	5	 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
5.			5	 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
5. 6. 7. 8. 9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30) 1.			5	 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
5. 6. 7. 8. 9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30) 1. 2.			5	 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
5. 6. 7. 8. 9. 10. 11. 12. 50% of total cover:			5	 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
5.			5	 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
5.	13 20%	of total cover:	5	 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
5.	13 20%		5	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.
5.	13 20%	of total cover:	5	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.
5. 6. 7. 8. 9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30) 1. 2. 3. 4. 5. 50% of total cover:	20%	of total cover:	5	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 Vegetation
5. 6. 7. 8. 9. 10. 11. 12. 50% of total cover:	20%	of total cover:	5	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 Vegetation
5. 6. 7. 8. 9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30) 1. 2. 3. 4. 5. 50% of total cover:	20%	of total cover:	5	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 Vegetation
5. 6. 7. 8. 9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30) 1. 2. 3. 4. 5. 50% of total cover:	20%	of total cover:	5	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 Vegetation
5. 6. 7. 8. 9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30) 1. 2. 3. 4. 5. 50% of total cover:	20%	of total cover:	5	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 Vegetation

SOIL Sampling Point: W005-W

Depth	ription: (Describe t Matrix	to the de		ument ti x Featur		ator or co	onfirm the absence	of indicators.)			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-6	10YR 5/1	95	10YR 4/6	5	С	М	Loamy/Clayey	silty loam			
6-20	10YR 5/2	90	10YR 4/6	10	С	М	Loamy/Clayey	silty loam			
0-20	10113/2	90	10114/0	10		IVI	Loaniy/Clayey	Silty IOalTI			
¹Type: C=Co	oncentration, D=Depl	etion, RM	=Reduced Matrix, N	/IS=Mas	ked San	d Grains.	² Location:	PL=Pore Lining, M=Matrix.			
Hydric Soil	Indicators: (Applica	ble to all	LRRs, unless other	erwise n	oted.)		Indicators	for Problematic Hydric Soils ³ :			
Histosol	(A1)		Thin Dark Su	urface (S	69) (LRR	8 S, T, U)	1 cm N	Muck (A9) (LRR O)			
Histic Ep	pipedon (A2)		Barrier Island	ds 1 cm	Muck (S	12)	2 cm N	Muck (A10) (LRR S)			
Black Hi	stic (A3)		(MLRA 15	3B, 153	D)		Coast	Prairie Redox (A16)			
Hydroge	n Sulfide (A4)		Loamy Muck	y Miner	al (F1) (L	_RR O)	(out	side MLRA 150A)			
Stratified	l Layers (A5)		Loamy Gleye	ed Matri	x (F2)		Reduc	ed Vertic (F18)			
Organic	Bodies (A6) (LRR P,	T, U)	X Depleted Ma	ıtrix (F3))		(out	side MLRA 150A, 150B)			
5 cm Mu	cky Mineral (A7) (LR	RP, T, U) Redox Dark	Surface	(F6)		Piedmont Floodplain Soils (F19) (LRR P, T)				
Muck Pr	esence (A8) (LRR U))	Depleted Da	rk Surfa	ce (F7)		Anomalous Bright Floodplain Soils (F20)				
1 cm Mu	ck (A9) (LRR P, T)		Redox Depre	essions	(F8)		(MLRA 153B)				
Depleted	l Below Dark Surface	e (A11)	Marl (F10) (L	Marl (F10) (LRR U)				Red Parent Material (F21)			
Thick Da	rk Surface (A12)		Depleted Oc	Depleted Ochric (F11) (MLRA 151)				Very Shallow Dark Surface (F22)			
Coast Pr	airie Redox (A16) (M	ILRA 150	A)Iron-Mangar	_ Iron-Manganese Masses (F12) (LRR 0				D, P, T) (outside MLRA 138, 152A in FL, 154)			
Sandy M	lucky Mineral (S1) (L	RR O, S)	Umbric Surfa	Umbric Surface (F13) (LRR P, T, U)				Islands Low Chroma Matrix (TS7)			
Sandy G	leyed Matrix (S4)		Delta Ochric	Delta Ochric (F17) (MLRA 151)				(MLRA 153B, 153D)			
Sandy R	edox (S5)		Reduced Ve	rtic (F18) (MLRA	150A, 1	50B) Other	Other (Explain in Remarks)			
Stripped	Matrix (S6)		Piedmont Flo	oodplain	Soils (F	19) (MLR	A 149A)				
Dark Sui	face (S7) (LRR P, S ,	, T, U)	Anomalous I	Bright Fl	oodplain	Soils (F2	20)				
Polyvalu	e Below Surface (S8))	(MLRA 14	9A, 153	C, 153D)	³ Indicators of hydrophytic vegetation and				
(LRR	S, T, U)		Very Shallov	v Dark S	Surface (I	F22)	wetland hydrology must be present,				
			(MLRA 13	8, 152A	in FL, 1	54)	unless disturbed or problematic.				
	_ayer (if observed):										
Type:	Non						Unadaia Onii Dana				
Depth (ir	ncnes):	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/Lauderdale Sampling Date: 9/20/20					
Applicant/Owner: Silicon Ranch Corpora	ation	-	State: TN	Sampling Point: W005-UPL			
Investigator(s): Benjamin Burdette and Jake	Irvin Sec	ction, Township, Range:		- •			
Landform (hillside, terrace, etc.): hillside		relief (concave, convex,	none). convex	Slope (%): 2-5			
Subregion (LRR or MLRA): LRR P, MLRA 1			39.512629	Datum: NAD83			
	· · · · · · · · · · · · · · · · · · ·						
Soil Map Unit Name: Memphis silt loam, 12							
Are climatic / hydrologic conditions on the site				explain in Remarks.)			
Are Vegetation, Soil, or Hydro	·		ircumstances" present	? Yes X No			
Are Vegetation, Soil, or Hydro	ologynaturally problemate	atic? (If needed, exp	plain any answers in R	emarks.)			
SUMMARY OF FINDINGS – Attach	site map showing sar	npling point location	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						
Remarks:		_		_			
Upland point corresponding to W5. In forest	adjacent to agricultuiral field.						
DP8-UP							
HYDROLOGY							
Wetland Hydrology Indicators:			Secondary Indicators	(minimum of two required)			
Primary Indicators (minimum of one is requi	red; check all that apply)		Surface Soil Crac	<u> </u>			
Surface Water (A1)	Aquatic Fauna (B13)			ed Concave Surface (B8)			
High Water Table (A2)	Marl Deposits (B15) (LR	RU)	Drainage Patterns (B10)				
Saturation (A3)	Hydrogen Sulfide Odor	ydrogen Sulfide Odor (C1) Moss Trim Lines (B16)					
Water Marks (B1)	Oxidized Rhizospheres	on Living Roots (C3)	Dry-Season Water	er Table (C2)			
Sediment Deposits (B2)	Presence of Reduced In		Crayfish Burrows				
Drift Deposits (B3)	Recent Iron Reduction in			on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Thin Muck Surface (C7)		Geomorphic Posi	` '			
Iron Deposits (B5)	Other (Explain in Remai	·ks)	Shallow Aquitard	,			
Inundation Visible on Aerial Imagery (B	7)		FAC-Neutral Test				
Water-Stained Leaves (B9)			Sphagnum Moss	(D8) (LRR 1, U)			
Field Observations:	N						
Surface Water Present? Yes	No X Depth (inches):						
Water Table Present? Yes Saturation Present? Yes	No X Depth (inches): No X Depth (inches):		Hudralagu Brasant?	Voc. No. V			
Saturation Present? Yes (includes capillary fringe)	No A Deptil (illiches).	vvetialid i	Hydrology Present?	Yes No _X			
Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, p	revious inspections) if a	vailable:				
Boombo (Kooorada Bata (etroam gaage, me	ormorning won, derial priotoe, p	ovious inspessions), ii u	valiable.				
Remarks:							
No hydrology							

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

ree Stratum (Plot size:30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:			
Ulmus americana	15	Yes	FAC	Number of Dominant Species			
Carya tomentosa	20	Yes	UPL	That Are OBL, FACW, or FAC:	1 (A)		
Juglans nigra	10	Yes	UPL	Total Number of Dominant Species Across All Strata:	7 (B)		
				Percent of Dominant Species That Are OBL, FACW, or FAC:	14.3% (A/B)		
				Prevalence Index worksheet:	(, 4,5)		
				Total % Cover of:	Multiply by:		
	45	=Total Cover		OBL species 0 x 1			
50% of total cover:		of total cover:	9	FACW species 0 x 2			
apling/Shrub Stratum (Plot size: 30) 2070	or total cover.		FAC species 15 x 3			
Catalpa speciosa	, 5	Yes	FACU	FACU species 10 x 4			
Catalpa speciosa		165	TACO	· —			
				UPL species 30 x 5 Column Totals: 55 (A)			
				Prevalence Index = B/A =	4.27		
				Hydrophytic Vegetation Indicato			
·				1 - Rapid Test for Hydrophytic	Vegetation		
				2 - Dominance Test is >50%			
				3 - Prevalence Index is ≤3.0¹	_		
	5	=Total Cover		Problematic Hydrophytic Vege	etation¹ (Explain)		
50% of total cover:	3 20%	of total cover:	1				
rb Stratum (Plot size:30)							
Persicaria virginiana	5	Yes		¹ Indicators of hydric soil and wetla	nd hydrology must b		
Smilax spp.	5	Yes		present, unless disturbed or proble	ematic.		
Parthenocissus quinquefolia	5	Yes	FACU	Definitions of Four Vegetation S	trata:		
				Tree – Woody plants, excluding vi	nes, 3 in. (7.6 cm) o		
				more in diameter at breast height	(DBH), regardless o		
-		·		height.			
				1			
				Sapling/Shrub – Woody plants, e than 3 in. DBH and greater than 3.			
				than 3 iii. DBH and greater than 3.	20 II (1 III) Iali.		
				Herb – All herbaceous (non-wood)			
				of size, and woody plants less that	n 3.28 ft tall.		
·	15	=Total Cover		Woody Vine – All woody vines gre	ator than 3 28 ft in		
50% of total cover:			2	height.	sater than 5.20 ft in		
	8 20%	of total cover:	3				
Woody Vine Stratum (Plot size: 30)							
				Hydrophytic			
	=Total Cover			Vegetation			
50% of total cover:	20%	of total cover:		Present? Yes	No X		
emarks: (If observed, list morphological adaptation	ons below.)						

W005-UPL

SOIL Sampling Point: W005-UPL

	ription: (Describe t	o the dept				tor or co	onfirm the absence	of indica	ators.)			
Depth (in a land)	Matrix			x Featur		1 - 2	T		D			
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture		Rem	arks		
0-20	10YR 6/3	100					Loamy/Clayey		silty	loam		
-												
										_		
¹ Type: C=Co	ncentration, D=Deple	etion RM=	Reduced Matrix N	 IS=Mas	ked San	d Grains	² l ocation:	PI =Pore	Lining, M=I	Matrix		
	ndicators: (Applical					J Oranis.				dric Soils ³ :		
Histosol (510 to all E	Thin Dark Su			S T U)			(LRR 0)	uno cono .		
	ipedon (A2)		Barrier Island						0) (LRR S)			
Black His			(MLRA 15			,			edox (A16)			
	n Sulfide (A4)		Loamy Muck			RR O)			RA 150A)			
	Layers (A5)		Loamy Gleye	,	· / ·	,	•		,			
	Bodies (A6) (LRR P,	T, U)	Depleted Ma		` '		Reduced Vertic (F18) (outside MLRA 150A, 150B)					
	cky Mineral (A7) (LR		Redox Dark				Piedmont Floodplain Soils (F19) (LRR P, T)					
Muck Pre	esence (A8) (LRR U)		Depleted Da	rk Surfa	ice (F7)		Anomalous Bright Floodplain Soils (F20)					
1 cm Mud	ck (A9) (LRR P, T)		Redox Depre	essions	(F8)		(MLRA 153B)					
Depleted	Below Dark Surface	(A11)	Marl (F10) (L	.RR U)			Red Parent Material (F21)					
Thick Da	rk Surface (A12)		Depleted Ochric (F11) (MLRA 151)				Very Shallow Dark Surface (F22)					
Coast Pra	airie Redox (A16) (M	LRA 150A)	Iron-Mangan	ese Ma	sses (F12	2) (LRR (O, P, T) (out	side MLF	RA 138, 152	A in FL, 154)		
	ucky Mineral (S1) (LI	RR O, S)	Umbric Surfa				Barrier Islands Low Chroma Matrix (TS7)					
	eyed Matrix (S4)		Delta Ochric				(MLRA 153B, 153D)					
	edox (S5)			Reduced Vertic (F18) (MLRA 150A, 150B) Other (Explain in Remarks)								
	Matrix (S6)	-		Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Floodplain Soils (F20)								
	face (S7) (LRR P, S,			_			20) ³ Indicators of hydrophytic vegetation and					
(LRR S	e Below Surface (S8)	1	(MLRA 14				wetland hydrology must be present,					
(LKK c	5, 1, 0)		Very Shallow (MLRA 13				unless disturbed or problematic.					
Postriotivo I	.aver (if observed):		(MERCA 10	o, 1027			dillo	- Go Giotai	bod of probl			
Type:	None	a										
-							Uhadala Oali Baas	40	V	N. V		
Depth (in	cnes):	0					Hydric Soil Pres	ent?	Yes	NoX		
Remarks:	il color: 10YR 5/2 5%	ailty loom										
10-20 ZIIU SO	II COIOI. 10 FR 3/2 3 70	Silly IOalli										

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 Corporation	tion		State: TN	Sampling Point: W006-W
Investigator(s): Benjamin Burdette and Jake	Irven Sec	ction, Township, Range:		<u> </u>
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 Hydrol	logy significantly distur		ircumstances" present?	
Are Vegetation, Soil, or Hydrol			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
I	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 requir	red; check all that apply)		Surface Soil Cracl	
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 In	on (C4)	Crayfish Burrows	(C8)
Drift Deposits (B3)	Recent Iron Reduction in	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 Remar	rks)	Shallow Aquitard ((D3)
Inundation Visible on Aerial Imagery (B7	7)		FAC-Neutral Test	(D5)
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):			
Saturation Present? Yes	No X Depth (inches):	. 0 Wetland H	Hydrology Present?	Yes <u>X</u> No
(includes capillary fringe)				
Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, p	revious inspections), if av	/ailable:	
Remarks:				
Nemains.				

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

ee Stratum (Plot size: 30)	Absolute	Dominant	Indicator			
) (1 lot 5120)	% 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/B
				Prevalence Index worksheet:		_
				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	
apling/Shrub Stratum (Plot size: 30)			FAC species 0 x 3	= 0	
	•			FACU species 0 x 4	= 0	
				UPL species 5 x 5	= 25	
				Column Totals: 5 (A)	25	(E
				Prevalence Index = B/A =	5.00	
				Hydrophytic Vegetation Indicato	rs:	
				1 - Rapid Test for Hydrophytic		
				2 - Dominance Test is >50%		
				3 - Prevalence Index is ≤3.0 ¹		
		=Total Cover		X Problematic Hydrophytic Vege	etation ¹ (Expla	in)
50% of total cover:	20%	of total cover:		<u> </u>	` .	•
b Stratum (Plot size: 30)						
Panicum miliaceum	5	Yes	UPL	1 Indicators of budgin soil and watter	nd budralagu	must
				¹ Indicators of hydric soil and wetlar present, unless disturbed or proble		musi
				Definitions of Four Vegetation S		
				Tree – Woody plants, excluding vir		om)
				more in diameter at breast height (
				height.	, ,	
				Sapling/Shrub – Woody plants, ex		
				than 3 in. DBH and greater than 3.	28 ft (1 m) tal	I.
				Herb – All herbaceous (non-woody		ardles
				of size, and woody plants less than	n 3.28 ft tall.	
		Tatal Cause		Manda Mina All was showing a supplier		o et :
F00/ - f t- t-1		=Total Cover	4	Woody Vine – All woody vines green height.	eater than 3.2	8 II II
50% of total cover:	3 20%	of total cover:	1	Tiolgin.		
Noody Vine Stratum (Plot size: 30)						
			<u> </u>	Hydrophytic		
		=Total Cover		Hydrophytic Vegetation		

W006-W

SOIL Sampling Point: W006-W

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix		Redox	ι Featur						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-2	10YR 5/2	90	10YR 4/6	10	C	M	Loamy/Claye	y silty loam		
2-18	10YR 5/3	90	10YR 4/4	10	С	<u>M</u>	Loamy/Claye	y silty loam		
18-20	10YR 5/1	85	10YR 4/6	15	С	M	Loamy/Claye	y silty loam		
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix.										
Hydric Soil I	ndicators: (Applical	ole to all L	RRs, unless othe	rwise n	oted.)		Indica	ors for Problematic Hydric Soils ³ :		
Histosol	(A1)		Thin Dark Su	ırface (S	9) (LRR	S, T, U)	1 0	m Muck (A9) (LRR O)		
Histic Ep	ipedon (A2)		Barrier Island	ds 1 cm	Muck (S	12)	20	m Muck (A10) (LRR S)		
Black His	stic (A3)		(MLRA 15	3B, 153	D)		Co	ast Prairie Redox (A16)		
Hydrogei	n Sulfide (A4)		Loamy Muck	y Minera	al (F1) (L	.RR O)	(outside MLRA 150A)		
Stratified	Layers (A5)		Loamy Gleye	ed Matrix	x (F2)		Re	duced 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) (LR I	R P, T, U)	Redox Dark	Surface	(F6)		Pie	edmont 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) (L	.RR U)			Red Parent Material (F21)			
Thick Da	rk Surface (A12)		Depleted Ocl	hric (F1	1) (MLR	A 151)	Very Shallow Dark Surface (F22)			
Coast Pr	airie Redox (A16) (M	LRA 150A) Iron-Mangan	ese Mas	sses (F1	2) (LRR (0, P, T) (outside MLRA 138, 152A in FL, 154)			
Sandy M	ucky Mineral (S1) (Lf	RR O, S)	Umbric Surfa	ice (F13	3) (LRR F	P, T, U)	Ва	Barrier Islands Low Chroma Matrix (TS7)		
Sandy G	leyed Matrix (S4)		Delta Ochric	(F17) (N	VILRA 15	51)	(MLRA 153B, 153D)			
Sandy R	edox (S5)		Reduced Ver	tic (F18) (MLRA	150A, 1				
Stripped	Matrix (S6)		Piedmont Flo	odplain	Soils (F	19) (MLR	A 149A)			
Dark Sur	face (S7) (LRR P, S,	T, U)	Anomalous E	Bright Fl	oodplain	Soils (F2	.0)			
	e Below Surface (S8)		(MLRA 14	_				dicators 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 F	resent? Yes X No 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/C	City/County: Ripley/Lauderdale Sampling Date: 9/21/2022					
Applicant/Owner: Silicon Ranch Corporati	ion	State: TN	Sampling Point: W006-UPL				
Investigator(s): Benjamin Burdette and Jake I	rvin Section, To	ownship, Range:	_				
Landform (hillside, terrace, etc.): hillside		oncave, convex, none): convex	Slope (%): 2-5				
Subregion (LRR or MLRA): LRR P, MLRA 13		Long: -89.520186	Datum: NAD83				
Soil Map Unit Name: Memphis silt loam, 8 to							
Are climatic / hydrologic conditions on the site			explain in Remarks.)				
Are Vegetation X, Soil , or Hydrold		Are "Normal Circumstances" presen					
Are Vegetation, Soil, or Hydrok		(If needed, explain any answers in F					
SUMMARY OF FINDINGS – Attach			•				
Hydrophytic Vegetation Present?	Yes No X Is the	Sampled Area					
		a Wetland? Yes	No X				
	Yes No X						
Upland point corresponding to W6. In agricult DP10-UP	tuiral corn field.						
HYDROLOGY							
Wetland Hydrology Indicators:			s (minimum of two required)				
Primary Indicators (minimum of one is require	ed; check all that apply)	Surface Soil Cra					
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 Livin	- · · · · · · · · · · · · · · · · · · ·	·				
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	 '					
Drift Deposits (B3)	Recent Iron Reduction in Tilled		e on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Thin Muck Surface (C7)	Geomorphic Pos					
Iron Deposits (B5)	Other (Explain in Remarks)		Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7))	FAC-Neutral Test (D5)					
Water-Stained Leaves (B9)		Sphagnum Moss	s (D8) (LRR T, U)				
Field Observations:							
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) Describe Recorded Data (stream gauge, mor	= the ing well paried photos provious	in a pations) if available:					
Describe Recorded Data (stream gauge, mor	nitoring well, aerial priotos, previous	Inspections), ii avaliabie.					
Remarks: No hydrology							

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

Compling Doint	W006-UPL
Sampling Point:	

Trans Charles (Dish sings 20	Absolute	Dominant	Indicator	Danis in a section of the section of
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:
1				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 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 ¹
		=Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20%	of total cover:		
Herb Stratum (Plot size: 30)				
1. Zea mays	95	Yes		¹ 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.				
8.				Sapling/Shrub – Woody plants, excluding vines, less
9.				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10.				
11.				Herb – All herbaceous (non-woody) plants, regardless
12.				of size, and woody plants less than 3.28 ft tall.
	95	=Total Cover		Woody Vine – All woody vines greater than 3.28 ft in
50% of total cover: 48		of total cover:	19	height.
Woody Vine Stratum (Plot size: 30)		o. 101a. 00 10		
5.				
J		=Total Cover		Hydrophytic
50% of total cover:		of total cover:		Vegetation Present? Yes No X
		oi total cover.		Present?
Remarks: (If observed, list morphological adaptation	s below.)			

SOIL Sampling Point: W006-UPL

	ription: (Describe t	o the dept				ator or co	onfirm th	e absence	of indica	ators.)		
Depth	Matrix			Featur		. 2	_			_		
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Tex	xture		Rem	arks	
0-20	10YR 5/3	95	10YR 5/4	5	С	M	Loamy	//Clayey		silty	loam	
		·										
¹Type: C=Cc	oncentration, D=Deple	etion RM=I	Reduced Matrix M	IS=Mas	ked San	d Grains		² I ocation:	PI =Pore	Lining, M=l	Matrix	
• •	ndicators: (Application)					a Oramo.				lematic Hy		3.
Histosol		5.0 to a 2	Thin Dark Su			S. T. U)				(LRR O)	u 00	
	ipedon (A2)		Barrier Island				•			(LRR S)		
Black His	. ,		(MLRA 15		•	,	-			edox (A16)		
	n Sulfide (A4)		Loamy Muck			RR O)	•	(outs	side MLF	RA 150A)		
	Layers (A5)		Loamy Gleye	d Matri	x (F2)			Reduce	ed Vertic	(F18)		
Organic I	Bodies (A6) (LRR P,	T, U)	Depleted Mat	trix (F3))		•	(outs	side MLF	RA 150A, 15	0B)	
5 cm Mu	cky Mineral (A7) (LR	R P, T, U)	Redox Dark S	Surface	(F6)		_	Piedmo	ont Flood	lplain Soils (F19) (LR	R P, T)
Muck Pre	esence (A8) (LRR U)		Depleted Dar	k Surfa	ice (F7)			Anoma	lous Brig	ıht Floodpla	in Soils (F	20)
1 cm Mu	ck (A9) (LRR P, T)		Redox Depre	ssions	(F8)			(MLF	RA 153B))		
Depleted	l Below Dark Surface	(A11)	Marl (F10) (L	RR U)			-	Red Pa	arent Mat	terial (F21)		
	rk Surface (A12)		Depleted Och							ark Surface	` '	
	airie Redox (A16) (M						O, P, T)	•		RA 138, 152		•
	ucky Mineral (S1) (LI	RR O, S)	Umbric Surfa	-			-			Low Chroma	a Matrix (TS7)
	leyed Matrix (S4)		Delta Ochric				50D)	•	RA 153B,	•		
	edox (S5)		Reduced Ver	-				Other (Explain i	n Remarks)		
	Matrix (S6)	T 11\	Piedmont Flo		-							
	face (S7) (LRR P, S, e Below Surface (S8)		Anomalous B (MLRA 149	-		•	20)	3Indica	tors of by	drophytic v	agotation	and
	e Below Surface (36) S, T, U))	Very Shallow			•			-		-	
(LICITY)	3, 1, 0)		(MLRA 138		,	,	wetland hydrology must be present, unless disturbed or problematic.					
Rostrictivo I	_ayer (if observed):		(-,		,						
Type:	Non-	e										
Depth (in		0					Hydrid	Soil Prese	ent?	Yes	No	×
Remarks:							riyario					
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.): terrace		relief (concave, convex, ı	none): concave	Slope (%): 0-2		
· · · · · · · · · · · · · · · · · · ·		,	·	,		
Subregion (LRR or MLRA): LRR P, MLRA 1	'		39.525137			
Soil Map Unit Name: Adler silt loam, 0 to 2 p	percent slopes, occasionally the		NWI classificat	ion: N/A		
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	logy significantly distur	bed? Are "Normal C	ircumstances" present?	? Yes X No		
Are Vegetation, Soil, or Hydro	logynaturally problema	atic? (If needed, exp	olain any answers in Re	emarks.)		
SUMMARY OF FINDINGS – Attach	site map showing sar	npling point location	ons, transects, im	portant features, etc.		
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes X No Yes X No	Is the Sampled Area within a Wetland?	Yes_X_	No		
Wetland Hydrology Present?	Yes X No					
PEM portion of Wetland 7; in agricultural col DP13-W7	tton field					
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)		Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2)	Marl Deposits (B15) (LR		X Drainage Patterns			
Saturation (A3)	Hydrogen Sulfide Odor		Moss Trim Lines (B16)			
Water Marks (B1)	Oxidized Rhizospheres	= : :				
Sediment Deposits (B2)	Presence of Reduced In		Crayfish Burrows (C8)			
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 Remai		Geomorphic Posit Shallow Aquitard (` '		
Inundation Visible on Aerial Imagery (B		N3)	FAC-Neutral Test			
Water-Stained Leaves (B9))		Sphagnum Moss (
Field Observations:				(23) (2.111.)		
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)			., a. c.cg, ccc	<u></u>		
Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, p	revious inspections), if a	vailable:			
, · · · ·		, ,				
Remarks:						

W007-W

Sampling Point:

T. 01 1 (PL) : 00)	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:
1 2.				Number of Dominant Species That Are ORL FACW or FAC:
	<u> </u>			That Are OBL, FACW, or FAC: 0 (A)
3 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)		01 1010		FAC species 0 x 3 = 0
1				FACU species 0 x4 = 0
2.				UPL species 0 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 ¹
·		=Total Cover		X Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:		of total cover:		<u> </u>
Herb Stratum (Plot size: 30)				
1. Panicum	80	Yes		¹ 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
6.				height.
7.				
8.				Sapling/Shrub – Woody plants, excluding vines, less
9.				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10.				
11.				Herb – All herbaceous (non-woody) plants, regardless
12.				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
50% of total cover: 40		of total cover:	16	height.
Woody Vine Stratum (Plot size: 30)				
1				
2.				
3.				
5.				
o	 :	=Total Cover		Hydrophytic
50% of total cover:		of total cover:		Vegetation Present? Yes X No
-		01 1010		1000
Remarks: (If observed, list morphological adaptations Heavily disturbed vegetation	s below.)			
Heavily disturbed vegetation				

SOIL Sampling Point: W007-W

Profile Desc	cription: (Describe to	o the dept	h needed to docu	ıment th	ne indica	tor or c	onfirm the absence	of indicators.)		
Depth	Matrix		Redox	c Featur	es					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-4	10YR 4/1	95	10YR 4/6	5	С	<u>M</u>	Loamy/Clayey	Prominent redox concentrations		
4-16	10YR 5/1	80	10YR 4/6	20	<u>C</u>	M	Loamy/Clayey	Prominent redox concentrations		
16-20	7.5YR 5/6	100					Loamy/Clayey	silt loam		
¹Type: C=Ce	oncentration, D=Deple	etion, RM=	Reduced Matrix, M	 1S=Mas	ked Sand	d Grains.	² Location:	PL=Pore Lining, M=Matrix.		
	Indicators: (Applical							for Problematic Hydric Soils ³ :		
Histosol			Thin Dark Su			S, T, U)	1 cm M	luck (A9) (LRR O)		
Histic Ep	pipedon (A2)		Barrier Island	ds 1 cm	Muck (S	12)	2 cm N	luck (A10) (LRR S)		
Black Hi	stic (A3)		(MLRA 15	3B, 153	D)		Coast	Prairie Redox (A16)		
Hydroge	n Sulfide (A4)		Loamy Muck	y Minera	al (F1) (L	RR O)	(outs	side MLRA 150A)		
Stratified	d Layers (A5)		Loamy Gleye	ed Matrix	(F2)		Reduce	ed Vertic (F18)		
Organic	Bodies (A6) (LRR P,	T, U)	X Depleted Ma	trix (F3)			(outs	side MLRA 150A, 150B)		
5 cm Mu	ıcky Mineral (A7) (LR I	R P, T, U)	Redox Dark	Surface	(F6)		Piedmo	ont Floodplain Soils (F19) (LRR P, T)		
Muck Pr	esence (A8) (LRR U)		Depleted Dar	rk Surfa	ce (F7)		Anoma	llous Bright Floodplain Soils (F20)		
1 cm Mu	ıck (A9) (LRR P, T)		Redox Depre	essions ((F8)		(MLF	RA 153B)		
Depleted	d Below Dark Surface	(A11)	Marl (F10) (L	.RR U)			Red Pa	arent Material (F21)		
Thick Da	ark Surface (A12)		Depleted Ocl	hric (F1	1) (MLR /	A 151)	Very S	hallow Dark Surface (F22)		
Coast P	rairie Redox (A16) (M	LRA 150A) Iron-Mangan	ese Mas	sses (F12	2) (LRR (O, P, T) (outs	side MLRA 138, 152A in FL, 154)		
Sandy M	lucky Mineral (S1) (Li	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) (N	ILRA 15	1)	(MLF	RA 153B, 153D)		
Sandy R	ledox (S5)		Reduced Ver	rtic (F18) (MLRA	150A, 1	50B) Other (Explain in Remarks)		
Stripped	Matrix (S6)		Piedmont Flo	odplain	Soils (F	19) (MLF	A 149A)			
	rface (S7) (LRR P, S,		Anomalous E	Bright Flo	oodplain	Soils (F2				
Polyvalu	e Below Surface (S8)		(MLRA 14				³ Indicators 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)	unle	ss disturbed or problematic.		
	Layer (if observed):									
Type:	None	9								
Depth (ii	nches):	0					Hydric Soil Prese	ent? Yes X No		
Remarks:	ed on clay layer									
water percin	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 Jal	ke 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			
· · · · · · · · · · · · · · · · · · ·			NWI classific				
Soil Map Unit Name: Adler silt loam, 0 to 2							
Are climatic / hydrologic conditions on the s	,,			explain in Remarks.)			
Are Vegetation, Soil, or Hyd	rologysignificantly dist	turbed? Are "Normal C	Circumstances" presen	t? Yes X No			
Are Vegetation, Soil, or Hyd	rologynaturally proble	matic? (If needed, ex	plain any answers in F	Remarks.)			
SUMMARY OF FINDINGS - Attac	ch site map showing s	ampling point locati	ons, transects, i	mportant 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 portic UP14-UP	n of W7. In a cotton field.						
HYDROLOGY							
Wetland Hydrology Indicators:			Secondary Indicators	s (minimum of two required)			
Primary Indicators (minimum of one is req	uired; check all that apply)		Surface Soil Cra				
Surface Water (A1)	Aquatic Fauna (B13)		Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)	Marl Deposits (B15) (I		Drainage Patterns (B10)				
Saturation (A3)	Hydrogen Sulfide Odd		Moss Trim Lines (B16)				
Water Marks (B1)		es on Living Roots (C3)	Dry-Season Water Table (C2)				
Sediment Deposits (B2) Drift Deposits (B3)	Presence of Reduced Recent Iron Reduction		Crayfish Burrows (C8)				
Algal Mat or Crust (B4)	Thin Muck Surface (C	` ,	Saturation Visible on Aerial Imagery (C9) 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)	,			(D8) (LRR T, U)			
Field Observations:			<u> </u>				
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, i	nonitoring well, aerial photos,	previous inspections), if a	ıvailable:				
Remarks:							

VEGETATION (Four Strata) – Use scientific names of

Sapling/Shrub Stratum (Plot size: 30)

Herb Stratum (Plot size: 30)

1. Gossypium hirsutum

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

2. 3.

6.

1.

3.

6.

3. 4. 5. 6.

2.

rata) – Use scientif	Absolute	Dominant	Indicator	Sampling Point:
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/B
				Prevalence Index worksheet:
				Total % Cover of: Multiply by:
	=	Total Cover		OBL species0 x 1 =0
% of total cover:	20%	of total cover:		FACW species 0 x 2 = 0
ot size: 30)				FAC species 0 x 3 = 0
				FACU species 0 x 4 = 0
				UPL species100 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%
				3 - Prevalence Index is ≤3.0 ¹
		Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
% of total cover:		of total cover:		
30)				
, ,	100	Yes	UPL	¹ Indicators of hydric soil and wetland hydrology must I 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, regardles 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
% of total cover: 50	20%	of total cover:	20	height.
t size: 30)				
				Hydrophytic
	=	Total Cover		Hydrophytic Vegetation

Remarks: (If observed, list morphological adaptations below.)

Woody Vine Stratum (Plot size: 30)

SOIL Sampling Point: W007-UPL

	ription: (Describe t	o the depti				tor or co	onfirm the absence	e of indic	ators.)		
Depth	Matrix			K Featur		. 2	- .				
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture		Rem	ıarks	
0-20	10YR 5/4	100					Loamy/Clayey		silty	loam	
								_			
-											
-											
	oncentration, D=Depl					d Grains.			e Lining, M=I		
-	ndicators: (Application	ble to all Li							blematic Hy	dric Soils ³	:
Histosol	(A1)		Thin Dark Su	•			1 cm	Muck (A9) (LRR 0)		
Histic Ep	ipedon (A2)		Barrier Island	ds 1 cm	Muck (S	12)	2 cm	Muck (A1	0) (LRR S)		
Black His	` '		(MLRA 15						Redox (A16)		
Hydroge	n Sulfide (A4)		Loamy Muck	•	. , .	RR O)	•	utside ML	,		
	Layers (A5)		Loamy Gleye		. ,			uced Vertic	` ,		
	Bodies (A6) (LRR P,		Depleted Ma				•		RA 150A, 15	•	
	cky Mineral (A7) (LR		Redox Dark		` '				dplain Soils (-
	esence (A8) (LRR U)		Depleted Dai		` '				ght Floodpla	in Soils (F2	0)
	ck (A9) (LRR P, T)		Redox Depre		(F8)		•	LRA 153E	•		
	I Below Dark Surface	(A11)	Marl (F10) (L						iterial (F21)		
	rk Surface (A12)		Depleted Ocl	-					ark Surface	` '	
	rairie Redox (A16) (M	•							RA 138, 152	•	,
	lucky Mineral (S1) (L I	RR O, S)	Umbric Surfa						Low Chroma	a Matrix (TS	S7)
	leyed Matrix (S4)		Delta Ochric				•	LRA 153B			
	edox (S5)		Reduced Ver	,	, ,		· —	er (Explain	in Remarks)		
	Matrix (S6)		Piedmont Flo								
	face (S7) (LRR P, S,		Anomalous E	-							
	e Below Surface (S8))	(MLRA 14						ydrophytic v	-	
(LRR	S, T, U)		Very Shallow		,	•	wetland hydrology must be present, unless disturbed or problematic.				
			(MLRA 13	8, 152A	in FL, 1:	54)	ur	ness distui	bea or probl	ematic.	
	_ayer (if observed):	_									
Type:	None								.,		
Depth (ir	iches):	0					Hydric Soil Pre	esent?	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/Lauder	dale	Sampling Date: 9/21/22		
Applicant/Owner: Silicon Ranch Corporation	tion		State: TN	Sampling Point: W007-W		
Investigator(s): Benjamin Burdette and Jake	Irven Secti	ion, Township, Range:		. -		
Landform (hillside, terrace, etc.): depression		elief (concave, convex, none	e): concave	Slope (%): 0-2		
Subregion (LRR or MLRA): LRR P, MLRA 1:		Long: -89.52	-	Datum: NAD83		
Soil Map Unit Name: Adler silt loam, 0 to 2 p		· · · · · · · · · · · · · · · · · · ·	NWI classificati			
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 disturb		mstances" present?			
Are Vegetation, Soil, or Hydrol			i any answers in Re			
SUMMARY OF FINDINGS – Attach			-			
Hydrophytic Vegetation Present?	Yes X No I	Is the Sampled Area				
		within a Wetland?	Yes X	No		
Wetland Hydrology Present?	Yes X No					
Remarks:	•					
PFO part of wetland 7; adjacent to agricultur	al field					
DP11-W7						
HYDROLOGY						
Wetland Hydrology Indicators:		Sec		(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) (LRR		_Drainage Patterns			
Saturation (A3)	Hydrogen Sulfide Odor (C	•	X Moss Trim Lines (B16)			
X Water Marks (B1)	Oxidized Rhizospheres or					
Sediment Deposits (B2)	Presence of Reduced Iron		_Crayfish Burrows (
Drift Deposits (B3)	Recent Iron Reduction in	Tilled Soils (C6)	-	on Aerial Imagery (C9)		
Algal Mat or Crust (B4)	Thin Muck Surface (C7)	<u>—</u>	_Geomorphic Positi			
Iron Deposits (B5)	Other (Explain in Remarks		Shallow Aquitard (
Inundation Visible on Aerial Imagery (B7	')		FAC-Neutral Test			
X Water-Stained Leaves (B9)		_	Sphagnum Moss (D8) (LRR T, U)		
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):	0 Wetland Hydi	rology Present?	Yes <u>X</u> No		
(includes capillary fringe)	**	· · · · · · · · · · · · · · · · · · ·				
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, pre	vious inspections), it availa	ıble:			
Remarks:						
Nemarks.						

Tree Stratum (Plot size: 30)					
A Linuidanahan Amazikua	-	% Cover	Species?	Status	Dominance Test worksheet:
1. Liquidambar styraciflua		65	Yes	FAC	Number of Dominant Species
2. 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
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 ≤3.0¹
o		44	=Total Cover		· ——
F00/ - 54-4-1	-			•	Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	22	20%	of total cover:	9	
Herb Stratum (Plot size: 30)		_			
Toxicodendron radicans		5	No	FAC	¹ Indicators of hydric soil and wetland hydrology must be
2. Campsis radicans		5	No	FAC	present, unless disturbed or problematic.
3. Microstegium vimineum		10	Yes	FAC	Definitions of Four Vegetation Strata:
4. Setaria spp.		10	Yes		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					Hart All back and the first the second of th
11.					Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
12.					or orze, and wedly plante loss than orze it tall.
		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)				
1.	,				
2.					
2					
1					
_					
5.					Hydrophytic
F00/ - 54-4-1	_		=Total Cover		Vegetation
50% of total cover:			of total cover:		Present?
Remarks: (If observed, list morphological adapta	ations	below.)			

SOIL Sampling Point: W007-W

	ription: (Describe	to the dept				ator or co	onfirm the absence	of indicators.)	
Depth	Matrix	0/		x Featur		1 2	Tandona	Damanka	
(inches)	Color (moist)	<u>%</u> _	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks	
0-6	10YR 5/2	90	10YR 5/6	10	<u>C</u>	M	Loamy/Clayey	silty loam	
6-20	10YR 6/2	90	10YR 5/6	10	С	M	Loamy/Clayey	silty loam	
	oncentration, D=Dep					d Grains.		PL=Pore Lining, M=Matrix.	
_	Indicators: (Applica	ble to all L						for Problematic Hydric Soils ³ :	
Histosol	• •		Thin Dark Su	-				Muck (A9) (LRR O)	
· ·	pipedon (A2)		Barrier Island		-	12)		Muck (A10) (LRR S)	
Black His	` '		(MLRA 15					Prairie Redox (A16)	
	n Sulfide (A4)		Loamy Muck	•		RR O)	•	side MLRA 150A)	
Stratified	l 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)	
5 cm Mu	cky Mineral (A7) (LR	R P, T, U)	Redox Dark	Surface	(F6)			ont Floodplain Soils (F19) (LRR P, T)	
Muck Pre	esence (A8) (LRR U))	Depleted Da	rk Surfa	ce (F7)		Anoma	alous Bright Floodplain Soils (F20)	
1 cm Mu	ck (A9) (LRR P, T)		Redox Depre	essions	(F8)		(MLF	RA 153B)	
Depleted	l Below Dark Surface	e (A11)	Marl (F10) (L	.RR U)			Red Pa	arent Material (F21)	
	rk Surface (A12)		Depleted Oc				Very Shallow Dark Surface (F22)		
	airie Redox (A16) (N) Iron-Mangan	ese Ma	sses (F1	2) (LRR C	D, P, T) (outs	side MLRA 138, 152A in FL, 154)	
Sandy M	lucky Mineral (S1) (L	RR O, S)	Umbric Surfa	ace (F13	3) (LRR I	P, T, U)	Barrier	Islands Low Chroma Matrix (TS7)	
	leyed Matrix (S4)		Delta Ochric				•	RA 153B, 153D)	
	edox (S5)		Reduced Ver					(Explain in Remarks)	
	Matrix (S6)		Piedmont Flo	•	,	, ,	•		
	face (S7) (LRR P, S		Anomalous E	-		-			
	e Below Surface (S8)	(MLRA 14					tors 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.	
Restrictive I	Layer (if observed): Non								
Depth (ir		0					Hydric Soil Pres	ent? Yes X No	
		0					Tryunc 3011 Fres	ent: 163 <u>/</u> 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: <u>9/21/2022</u>		
Applicant/Owner: Silicon Ranch Corporati	ion		State: TN	Sampling Point: W007-UPL		
Investigator(s): Benjamin Burdette and Jake I	Irvin Sect ⁱ	ion, Township, Range:		-		
Landform (hillside, terrace, etc.): hillside		elief (concave, convex, n	none): convex	Slope (%): 0-2		
Subregion (LRR or MLRA): LRR P, MLRA 13			9.525050	Datum: NAD83		
Soil Map Unit Name: Memphis silt loam, 8 to	<u> </u>		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 I	Is the Sampled Area				
		within a Wetland?	Yes	No X		
	Yes No X					
Remarks:						
Upland point corresponding to W7 PFO						
DP12-UP						
HYDROLOGY						
Wetland Hydrology Indicators:	·		Secondary <u>Indicators</u>	(minimum of two required)		
Primary Indicators (minimum of one is require	ed; check all that apply)	<u> </u>	Surface Soil Crac			
Surface Water (A1)	Aquatic Fauna (B13)					
High Water Table (A2)	Marl Deposits (B15) (LRF					
Saturation (A3)	Hydrogen Sulfide Odor (C	-	Moss Trim Lines (
Water Marks (B1)	Oxidized Rhizospheres or	-	Dry-Season Wate			
Sediment Deposits (B2)	Presence of Reduced Iron		Crayfish Burrows			
Drift Deposits (B3)	Recent Iron Reduction in	Tilled Soils (C6)		on Aerial Imagery (C9)		
Algal Mat or Crust (B4)	Thin Muck Surface (C7)	<u>.</u>	Geomorphic Posit			
Iron Deposits (B5)	Other (Explain in Remark	(s)	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				
Water Table Present? Yes	No X Depth (inches):	0				
Saturation Present? Yes	No X Depth (inches):	0 Wetland H	lydrology Present?	Yes No _X		
(includes capillary fringe)						
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)	<u> </u>			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)
Carya tomentosa		5	Yes	UPL	Prevalence Index = B/A = 4.29
Quercus muehlenbergii		2	No	UPL	Hydrophytic Vegetation Indicators:
				OFL	
6.					1 - Rapid Test for Hydrophytic Vegetation
7					2 - Dominance Test is >50%
8.					3 - Prevalence Index is ≤3.0 ¹
			=Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	11	20%	of total cover:	5	
Herb Stratum (Plot size: 30)					
1. Toxicodendron radicans		20	Yes		¹ 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.					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
×					than 3 in. DBH and greater than 3.28 ft (1 m) tall.
8.					than 5 m. bbit and greater than 5.20 it (1 m) tail.
9.	 				than 5 m. bbrr and greater than 5.25 ft (1 m) tall.
9	 				Herb – All herbaceous (non-woody) plants, regardless
9. 10. 11.	 				
9	 				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
9			=Total Cover		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
9. 10. 11. 12. 50% of total cover:	20		=Total Cover	8	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
9				8	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
9. 10. 11. 12. 50% of total cover:	20			8	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
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30	20	20%	of total cover:		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
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30 1. Vitis rotundifolia	20	20%	of total cover:		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
9.	20	20%	of total cover:		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
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30 1. Vitis rotundifolia 2. 3.	20	20%	of total cover:		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.
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30 1. Vitis rotundifolia 2. 3. 4.	20	5	of total cover:		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
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30 1. Vitis rotundifolia 2. 3. 4. 5.		5	Yes Yes		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
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30 1. Vitis rotundifolia 2. 3. 4. 5.)	5 5 20%	of total cover:	FAC	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
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30 1. Vitis rotundifolia 2. 3. 4. 5.)	5 5 20%	Yes Yes	FAC	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
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30 1. Vitis rotundifolia 2. 3. 4. 5.)	5 5 20%	Yes Yes	FAC	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
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30 1. Vitis rotundifolia 2. 3. 4. 5.)	5 5 20%	Yes Yes	FAC	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
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30 1. Vitis rotundifolia 2. 3. 4. 5.)	5 5 20%	Yes Yes	FAC	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
9. 10. 11. 12. 50% of total cover: Woody Vine Stratum (Plot size: 30 1. Vitis rotundifolia 2. 3. 4. 5.)	5 5 20%	Yes Yes	FAC	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 to	o the dept				ator or co	onfirm the absence	e of indic	ators.)	
Depth (in aboa)	Matrix	0/		x Featu		12	Tandona		D	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	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=	Reduced Matrix, N	/IS=Mas	sked San	d Grains.	² Location:	PL=Pore	e Lining, M=I	Matrix.
Hydric Soil I	ndicators: (Applical	ble to all L	RRs, unless othe	rwise r	noted.)		Indicator	s for Prol	blematic Hy	dric Soils ³ :
Histosol ((A1)		Thin Dark Su	urface (S9) (LRR	S, T, U)	1 cm	Muck (A9) (LRR O)	
Histic Ep	ipedon (A2)		Barrier Island	ds 1 cm	Muck (S	12)	2 cm	Muck (A1	0) (LRR S)	
Black His	stic (A3)		(MLRA 15	3B, 153	3D)		Coas	t Prairie R	dedox (A16)	
	n Sulfide (A4)		Loamy Muck	y Miner	ral (F1) (L	.RR O)	(ou	tside MLI	RA 150A)	
Stratified	Layers (A5)		Loamy Gleye	ed Matri	ix (F2)		Redu	ced Vertic	(F18)	
	Bodies (A6) (LRR P,		Depleted Ma		•		•		RA 150A, 15	•
	cky Mineral (A7) (LR I		Redox Dark		` '					F19) (LRR P, T)
	esence (A8) (LRR U)		Depleted Da		` '				-	in Soils (F20)
	ck (A9) (LRR P, T)	(0.44)	Redox Depre		(F8)		•	-RA 153B	•	
	Below Dark Surface rk Surface (A12)	(A11)	Marl (F10) (L		1) /MI D	A 151\	Red Parent Material (F21)			(E22)
	airie Redox (A16) (M i	I DA 150A	Depleted Oc Iron-Mangan	-			Very Shallow Dark Surface (F22) D, P, T) (outside MLRA 138, 152A in FL, 154)			` '
	ucky Mineral (S1) (Li		Umbric Surfa						•	a Matrix (TS7)
	leyed Matrix (S4)	u 0, 0,	Delta Ochric	-				RA 153B		r watrix (101)
	edox (S5)		Reduced Ve						in Remarks)	
	Matrix (S6)		Piedmont Flo	,	, .		· —	(,	
	face (S7) (LRR P, S,	T, U)	Anomalous E							
Polyvalue	e Below Surface (S8))	(MLRA 14	9A, 153	3C, 153D)	³ Indic	ators of h	ydrophytic ve	egetation and
(LRR S	S, T, U)		Very Shallow	Dark S	Surface (F	- 22)	we	tland hydi	ology must b	oe present,
			(MLRA 13	8, 152A	in FL, 1	54)	unl	ess distur	bed or probl	ematic.
Restrictive L	.ayer (if observed):									
Type:	None	е								
Depth (in	ches):	0					Hydric Soil Pre	sent?	Yes	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/Laud	derdale	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	ction, Township, Range:		-
Landform (hillside, terrace, etc.): toe of slop	•	relief (concave, convex, no	one): concave	Slope (%): 2-5
Subregion (LRR or MLRA): LRR P, MLRA 13		Long: -89	· 	Datum: NAD83
Soil Map Unit Name: Memphis silt loam, 12 t				
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		
		within a Wetland?	Yes X	No
	Yes X No			
Remarks: PFO wetland; fringe to pond (OW1) DP15-W8				
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)	<u> </u>		
——High Water Table (A2)	Marl Deposits (B15) (LR	_	X Drainage Patterns	
Saturation (A3)	Hydrogen Sulfide Odor (-	Moss Trim Lines (I	•
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 Positi	
Iron Deposits (B5)	Other (Explain in Remar	_	Shallow Aquitard (
Inundation Visible on Aerial Imagery (B7	")	_	X FAC-Neutral Test	
X 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):			
Saturation Present? Yes	No X Depth (inches):	0 Wetland Hy	ydrology Present?	Yes <u>X</u> No
(includes capillary fringe)	" with the second second photos in	land in an artismo) if our	9 61.	
Describe Recorded Data (stream gauge, mo	nitoring well, aerial priolos, pi	evious inspections), il ava	alladie:	
Remarks:				

Sampling Point:

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. Salix nigra	50	Yes	OBL	
Liquidambar styraciflua	10	No	FAC	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
3.		110	170	
4.				Total Number of Dominant Species Across All Strata: 4 (B)
5.				``
6.				Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
7				That Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet:
7.				
8		T-1-1 0		Total % Cover of: Multiply by:
E00/ 51 1 1		=Total Cover	40	OBL species 55 x1 = 55
	30 20%	of total cover:	12	FACW species 0 x 2 = 0
Sapling/Shrub Stratum (Plot size: 30	_	.,	0.01	FAC species 32 x 3 = 96
1. Salix nigra	5	Yes	OBL	FACU species 5 x 4 = 20
2. Ulmus americana	5	Yes	FAC	UPL species0 x 5 =0
3.				Column Totals: 92 (A) 171 (B)
4				Prevalence Index = B/A = 1.86
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 ¹
	10	=Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	5 20%	of total cover:	2	<u> </u>
Herb Stratum (Plot size: 30)				
1. Bignonia capreolata	15	Yes	FAC	¹ Indicators of hydric soil and wetland hydrology must be
Parthenocissus quinquefolia	5	No	FACU	present, unless disturbed or problematic.
3. Panicum spp.	5	No		Definitions of Four Vegetation Strata:
4. Toxicodendron radicans	2	No	FAC	
5.				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or 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.				Herb – All herbaceous (non-woody) plants, regardless
11.				of size, and woody plants less than 3.28 ft tall.
12				
		=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)				
1				
2.				
3.				
4				
5.				Hudrophytic
		=Total Cover		Hydrophytic Vegetation
50% of total cover:	20%	of total cover:		Present? Yes X No
Remarks: (If observed, list morphological adaptation	ons below.)			

SOIL Sampling Point: W008-W

Profile Desc	ription: (Describe to	o the dept	h needed to docu	ıment th	ne indica	tor or co	onfirm the absence o	of indicators.)
Depth	Matrix		Redox	x Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-14	10YR 5/3	70	10YR 6/2	5	D	M		silt
14-20	10YR 5/3	50	10YR 6/2	30	D	M		silt
¹Type: C=C	oncentration, D=Deple	tion RM=	Reduced Matrix N	 MS=Mas	ked Sand		2l ocation: F	PL=Pore Lining, M=Matrix.
	Indicators: (Applicat					J Grains.		for Problematic Hydric Soils ³ :
Histosol		5.0 to a -	Thin Dark Su			S, T, U)		uck (A9) (LRR O)
	oipedon (A2)		Barrier Island					uck (A10) (LRR S)
Black Hi			(MLRA 15		•	,		Prairie Redox (A16)
—— Hydroge	n Sulfide (A4)		Loamy Muck	y Minera	al (F1) (L	RR O)		ide MLRA 150A)
Stratified	l Layers (A5)		Loamy Gleye	ed Matrix	(F2)		Reduce	d Vertic (F18)
Organic	Bodies (A6) (LRR P,	T, U)	Depleted Ma	trix (F3)			(outsi	ide MLRA 150A, 150B)
5 cm Mu	icky Mineral (A7) (LRI	R P, T, U)	Redox Dark	Surface	(F6)		Piedmo	nt Floodplain Soils (F19) (LRR P, T)
Muck Pr	esence (A8) (LRR U)		Depleted Da	rk Surfa	ce (F7)		Anomal	ous Bright Floodplain Soils (F20)
	ick (A9) (LRR P, T)		Redox Depre		(F8)		•	A 153B)
	d Below Dark Surface	(A11)	Marl (F10) (L					rent Material (F21)
	ark Surface (A12)		Depleted Oc					allow Dark Surface (F22)
	rairie Redox (A16) (M l							ide MLRA 138, 152A in FL, 154)
	lucky Mineral (S1) (LF	RR (), (S)	Umbric Surfa					Islands Low Chroma Matrix (TS7)
	Sleyed Matrix (S4)		Delta Ochric					A 153B, 153D)
	ledox (S5) Matrix (S6)		Reduced Ver	•	, ,		· — `	Explain in Remarks)
	rface (S7) (LRR P, S,	T 11)	Anomalous E					
	e Below Surface (S8)		(MLRA 14	-		•		ors of hydrophytic vegetation and
	S, T, U)		Very Shallow					nd hydrology must be present,
(=	-, -, -,		(MLRA 13					s disturbed or problematic.
Restrictive I	Layer (if observed):					-		
Type:	None	e						
Depth (ir	nches):	0					Hydric Soil Prese	nt? Yes X No
Remarks:		F/0 000′ 5						
0-14 addition	nal redox layer: 10YR	5/8 20% D	, L					
14-20 additio	nal redox layer: 10YF	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: Ripley	y/Lauderdale Sampling Date: 9/21/2022				
Applicant/Owner: Silicon Ranch Corporati	ion	State: TN Sampling Point: W008-UPL				
Investigator(s): Benjamin Burdette and Jake I	rvin Section, Township, Ran					
Landform (hillside, terrace, etc.): hillside	Local relief (concave, conv					
Subregion (LRR or MLRA): LRR P, MLRA 13	· · · · · · · · · · · · · · · · · · ·	ng: -89.519722 Datum: NAD83				
	o 20 percent slopes, severely eroded, northern ph	<u> </u>				
Are climatic / hydrologic conditions on the site						
Are Vegetation, Soil, or Hydrok		nal Circumstances" present? Yes X No				
Are Vegetation, Soil, or Hydrok		d, explain any answers in Remarks.)				
		cations, transects, important features, etc.				
Hydrophytic Vegetation Present?	Yes No X Is the Sampled Are	rea				
	Yes No X within a Wetland?					
	Yes No X					
Remarks:	·					
Upland point corresponding to W8; In cornfie	ıd					
DP16-UP						
		I				
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)				
Primary Indicators (minimum of one is require	ed; check all that apply)	Surface Soil Cracks (B6)				
Surface Water (A1)	Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)				
High Water Table (A2)	Marl Deposits (B15) (LRR U)					
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)	Other (Explain in Remarks)	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					
Water Table Present? Yes	No X Depth (inches): 0					
Saturation Present? Yes	No X Depth (inches): 0 Wetla	and Hydrology Present? Yes No _X				
(includes capillary fringe)						
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, previous inspections),	, if available:				
Remarks:						
Remains.						

	Absolute	Dominant	Indicator		
ee Stratum (Plot size:30)	% Cover	Species?	Status	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 ORL FACIN or FAC:	/ A /E
				That Are OBL, FACW, or FAC: 0.0%	(A/E
				Prevalence Index worksheet:	
				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	
pling/Shrub Stratum (Plot size: 30)				FAC species 0 x 3 = 0	
				FACU species 0 x 4 = 0	
				UPL species 100 x 5 = 500	
				Column Totals: 100 (A) 500	(E
				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 ¹	
					. ,
		=Total Cover		Problematic Hydrophytic Vegetation ¹ (Expla	ain)
50% of total cover:	20%	of total cover:			
rb Stratum (Plot size: 30)					
7	100				
Zea mays	100	Yes	UPL	¹ Indicators of hydric soil and wetland hydrology	must
zea mays	100	Yes	UPL	¹ Indicators of hydric soil and wetland hydrology present, unless disturbed or problematic.	must
Zea mays	100	Yes	UPL		must
Zea mays	100	Yes	UPL	present, unless disturbed or problematic. Definitions of Four Vegetation Strata:	
Zea mays	100	Yes	UPL	present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6)	6 cm)
Zea mays	100	Yes	UPL	present, unless disturbed or problematic. Definitions of Four Vegetation Strata:	6 cm)
Zea mays	100	Yes	UPL	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	6 cm)
Zea mays	100	Yes	UPL	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	6 cm)
Zea mays	100	Yes	UPL	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.	3 cm) dless
Zea mays	100	Yes	UPL	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	3 cm) dless
Zea mays	100	Yes	UPL	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) ta	6 cm) dless s, les ll.
	100	Yes	UPL	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, regard.	6 cm) dless s, les ll.
	100	Yes	UPL	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) ta	6 cm) dless s, les
			UPL	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, regard of size, and woody plants less than 3.28 ft tall.	6 cm) dless s, les II.
	100	=Total Cover		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, regard.	6 cm) dless s, les II.
50% of total cover:50	100			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, regard fisize, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.2	6 cm) dless s, les II.
50% of total cover:50	100	=Total Cover		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, regard fisize, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.2	6 cm) dless s, les II.
50% of total cover:50	100	=Total Cover		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, regard fisize, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.2	6 cm) dless s, les II.
50% of total cover:50	100	=Total Cover	20	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, regard fisize, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.2	6 cm) dless s, les II.
50% of total cover: 50% of	100	=Total Cover	20	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, regard fisize, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.2	6 cm) dless s, les II.
50% of total cover: 50% of	100	=Total Cover	20	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, regard fisize, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.2	6 cm) dless s, les II.
50% of total cover: 50% of	100	=Total Cover	20	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, regard of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.2 height.	6 cm) dless (s, less ll.
50% of total cover: 50% of	100	=Total Cover	20	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, regard of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.2 height.	6 cm) dless (s, less ll.
50% of total cover: 50% of	100	=Total Cover of total cover:	20	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, regard of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.2 height.	S cm) dless o s, less ll.

SOIL Sampling Point: W008-UPL

	ription: (Describe t Matrix	o the dep				ator or co	onfirm the absence o	f indicators.)	
Depth (inches)	Color (moist)	%	Color (moist)	x Featur %	Type ¹	Loc ²	Texture	Remarks	
			, ,				Texture	Remarks	
0-15	10YR 5/6	80	10YR 4/4	10	D	<u>M</u>			
15-20	10YR 6/4	80	10YR 5/8	20	С	M		Prominent redox concentrations	
	oncentration, D=Depl					d Grains.		PL=Pore Lining, M=Matrix.	
-	Indicators: (Applica	ble to all				0.7.11		or Problematic Hydric Soils ³ :	
Histosol			Thin Dark Su					uck (A9) (LRR O)	
Black His	oipedon (A2)		Barrier Island (MLRA 15			12)		uck (A10) (LRR S) rairie Redox (A16)	
	n Sulfide (A4)		Loamy Muck			RR (I)		de MLRA 150A)	
	I Layers (A5)		Loamy Gleye	,	` '	ikik O)	•	d Vertic (F18)	
	Bodies (A6) (LRR P,	T. U)	Depleted Ma					de MLRA 150A, 150B)	
	cky Mineral (A7) (LR			, ,			•	nt Floodplain Soils (F19) (LRR P, T)	
	esence (A8) (LRR U)		Depleted Da	rk Surfa	ce (F7)			ous Bright Floodplain Soils (F20)	
1 cm Mu	ck (A9) (LRR P, T)		Redox Depre	essions	(F8)		(MLRA	A 153B)	
Depleted	l Below Dark Surface	(A11)	Marl (F10) (L	.RR U)			Red Par	ent Material (F21)	
Thick Da	rk Surface (A12)		Depleted Oc	hric (F1	1) (MLR /	4 151)	Very Shallow Dark Surface (F22)		
Coast Pr	rairie Redox (A16) (M	LRA 150	A) Iron-Mangan	ese Ma	sses (F1	2) (LRR C	P, T) (outside MLRA 138, 152A in FL, 154)		
Sandy M	lucky Mineral (S1) (L	RR O, S)	Umbric Surfa	ace (F13) (LRR F	P, T, U)	Barrier I	slands Low Chroma Matrix (TS7)	
	leyed Matrix (S4)		Delta Ochric				•	A 153B, 153D)	
	edox (S5)		Reduced Ve	,	, ,		,	explain in Remarks)	
	Matrix (S6)		Piedmont Flo	•	`	, ,	•		
	face (S7) (LRR P, S,		Anomalous E	-		•			
	e Below Surface (S8))	(MLRA 14					ors of hydrophytic vegetation and	
(LKK	S, T, U)		Very Shallov (MLRA 13		`	,	wetland hydrology must be present, unless disturbed or problematic.		
Do o tui o tivo I	array (if a baam and).		(INLICA 13	0, 132A	III F E, I	34)	unies	s disturbed or problematic.	
Type:	Layer (if observed): Non	0							
-									
Depth (ir	nches):	0					Hydric Soil Preser	nt? Yes No X	
Remarks: 0-15 addition	al redox layer color:	10YR 5/8	10% 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/Lauc	derdale	Sampling Date: 9/21/22
Applicant/Owner: Silicon Ranch Corporati	ion	·	State: TN	Sampling Point: W009-W
Investigator(s): Benjamin Burdette and Jake I	Irven Sec	ction, Township, Range:		<u> </u>
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 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	ogy significantly distur		cumstances" present?	? Yes X No
Are Vegetation, Soil, or Hydrok			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 require	ed; check all that apply)	Surface Soil Cracks (B6)		
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 Wate	
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 Posit	, ,
Iron Deposits (B5)	Other (Explain in Remark	_	Shallow Aquitard (
Inundation Visible on Aerial Imagery (B7))	_	X FAC-Neutral Test	
X Water-Stained Leaves (B9)			Sphagnum Moss ([D8) (LRR T, U)
Field Observations:				
Surface Water Present? Yes	No X Depth (inches):			
	No X Depth (inches):			V N
Saturation Present? Yes	No X Depth (inches):	0 Wetland Hy	ydrology Present?	Yes <u>X</u> No
(includes capillary fringe)	" " " photos nu	' 'tiana) if our	9 61.	
Describe Recorded Data (stream gauge, mor	nitoring well, aeriai priotos, pri	evious inspections), ii ava	allable:	
Remarks:				

ee Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:		
(1 lot 3/26	70 OOVCI	Орссісэ:	Otatus			
	· ——			Number of Dominant Species That Are OBL, FACW, or FAC:	3 (/	A)
	· ——			_	(,	٠,
				Total Number of Dominant Species Across All Strata:	3 (1	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 =		-
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 =		-
Salix nigra	-' 5	Yes	OBL	FACU species 0 x 4 =		-
Liquidambar styraciflua	10	Yes	FAC	UPL species 0 x 5 =	-	-
				Column Totals: 105 (A)	205	- (B
	·			Prevalence Index = B/A =	1.95	_ (D
	· ——			Hydrophytic Vegetation Indicators		
	·			1 - Rapid Test for Hydrophytic \		
				X 2 - Dominance Test is >50%	regetation	
				X 3 - Prevalence Index is ≤3.0 ¹		
-				X 5 - 1 Tevalence index is ±0.0		
	8 20%	=Total Cover of total cover:	3	Problematic Hydrophytic Vegeta		
rb Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia	8 20% 10 80	of total cover: No Yes	3 OBL FACW	¹ Indicators of hydric soil and wetland present, unless disturbed or probler	d hydrology mւ matic.	
b Stratum (Plot size: 30) Juncus effusus	8 20%	of total cover:	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation St	d hydrology mu matic. rata:	ust
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia	8 20% 10 80	of total cover: No Yes	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation St Tree – Woody plants, excluding vinc	d hydrology mu matic. rata: es, 3 in. (7.6 cr	ust l
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia	8 20% 10 80	of total cover: No Yes	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vincomore in diameter at breast height (E	d hydrology mu matic. rata: es, 3 in. (7.6 cr	ust I
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia	8 20% 10 80	of total cover: No Yes	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation St Tree – Woody plants, excluding vinc	d hydrology mu matic. rata: es, 3 in. (7.6 cr	ust k
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia	8 20% 10 80	of total cover: No Yes	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vincomore in diameter at breast height (E	d hydrology mu matic. rata: es, 3 in. (7.6 cr DBH), regardles	m) c
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia	8 20% 10 80	of total cover: No Yes	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Stree – Woody plants, excluding vindore in diameter at breast height (Eneight.	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles	m) o
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia	8 20% 10 80	of total cover: No Yes	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation State Tree – Woody plants, excluding vincomore in diameter at breast height (Excluding the light). Sapling/Shrub – Woody plants, excluding vincomore in diameter at breast height.	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles	m) c
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia	8 20% 10 80	of total cover: No Yes	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation State Tree – Woody plants, excluding vincomore in diameter at breast height (Excluding the light). Sapling/Shrub – Woody plants, excluding vincomore in diameter at breast height.	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I	m) c
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia Carex spp.	8 20% 10 80	of total cover: No Yes	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vindomore in diameter at breast height (Eneight. Sapling/Shrub – Woody plants, excluding vindomore in diameter at breast height (Eneight.)	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.	m) c
Juncus effusus Persicaria lapathifolia Carex spp.	8 20% 10 80 10	No Yes No	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vince more in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, excluding vince in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, excluding vince in diameter at breast height (Elbeight.) Herb – All herbaceous (non-woody) of size, and woody plants less than	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.) plants, regard 3.28 ft tall.	m) cess cess
rb Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia Carex spp.	8 20% 10 80 10 10	No Yes No Section No S	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vind more in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, exthan 3 in. DBH and greater than 3.2 Herb – All herbaceous (non-woody) of size, and woody plants less than Woody Vine – All woody vines greater	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.) plants, regard 3.28 ft tall.	m) coss o
The Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia Carex spp. 50% of total cover:	8 20% 10 80 10 10	No Yes No	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vince more in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, excluding vince in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, excluding vince in diameter at breast height (Elbeight.) Herb – All herbaceous (non-woody) of size, and woody plants less than	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.) plants, regard 3.28 ft tall.	m) cess cess
Description of total cover:	8 20% 10 80 10 10	No Yes No Section No S	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vind more in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, exthan 3 in. DBH and greater than 3.2 Herb – All herbaceous (non-woody) of size, and woody plants less than Woody Vine – All woody vines greater	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.) plants, regard 3.28 ft tall.	m) o
Description (Plot size: 30) Juncus effusus Persicaria lapathifolia Carex spp. 50% of total cover:	8 20% 10 80 10 10	No Yes No Section No S	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vind more in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, exthan 3 in. DBH and greater than 3.2 Herb – All herbaceous (non-woody) of size, and woody plants less than Woody Vine – All woody vines greater	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.) plants, regard 3.28 ft tall.	m) o
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia Carex spp. 50% of total cover:	8 20% 10 80 10 10	No Yes No Section No S	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vind more in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, exthan 3 in. DBH and greater than 3.2 Herb – All herbaceous (non-woody) of size, and woody plants less than Woody Vine – All woody vines greater	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.) plants, regard 3.28 ft tall.	m) cess cess
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia Carex spp. 50% of total cover:	8 20% 10 80 10 10	No Yes No Section No S	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vind more in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, exthan 3 in. DBH and greater than 3.2 Herb – All herbaceous (non-woody) of size, and woody plants less than Woody Vine – All woody vines greater	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.) plants, regard 3.28 ft tall.	m) cess cess
Description (Plot size: 30) Juncus effusus Persicaria lapathifolia Carex spp. 50% of total cover:	8 20% 10 80 10 10	No Yes No Section No S	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vind more in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, exthan 3 in. DBH and greater than 3.2 Herb – All herbaceous (non-woody) of size, and woody plants less than Woody Vine – All woody vines greater	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.) plants, regard 3.28 ft tall.	m) cess cess
b Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia Carex spp. 50% of total cover:	8 20% 10 80 10 10 50 20%	No Yes No Series	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem Definitions of Four Vegetation Str Tree – Woody plants, excluding vind more in diameter at breast height (Elbeight. Sapling/Shrub – Woody plants, exthan 3 in. DBH and greater than 3.2 Herb – All herbaceous (non-woody) of size, and woody plants less than Woody Vine – All woody vines greater	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.) plants, regard 3.28 ft tall.	m) coss o
The Stratum (Plot size: 30) Juncus effusus Persicaria lapathifolia Carex spp. 50% of total cover:	8 20% 10 80 10 10 50 20%	No Yes No Section No S	OBL	¹ Indicators of hydric soil and wetland present, unless disturbed or problem. Definitions of Four Vegetation Str. Tree – Woody plants, excluding vinder in diameter at breast height (Elbeight). Sapling/Shrub – Woody plants, excitan 3 in. DBH and greater than 3.2. Herb – All herbaceous (non-woody) of size, and woody plants less than Woody Vine – All woody vines greatheight. Hydrophytic Vegetation	d hydrology mumatic. rata: es, 3 in. (7.6 cr DBH), regardles cluding vines, I 8 ft (1 m) tall.) plants, regard 3.28 ft tall.	m) o ess o

SOIL Sampling Point: W009-W

Profile Desc Depth	ription: (Describe t Matrix	o the dep		ıment tl x Featur		ator or co	onfirm the absence	of indicators.)		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	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	М	Loamy/Clayey	silt loam		
					_ 					
¹Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, N	——— IS=Mas	ked San	d Grains.	² Location:	PL=Pore Lining, M=Matrix.		
	Indicators: (Applica							for Problematic Hydric Soils ³ :		
Histosol	(A1)		Thin Dark Su	ırface (S	9) (LRF	8 S, T, U)	1 cm M	luck (A9) (LRR O)		
Histic Ep	pipedon (A2)		Barrier Island			12)		luck (A10) (LRR S)		
Black His	` '		(MLRA 15		•			Prairie Redox (A16)		
	n Sulfide (A4)		Loamy Muck	•	` '	_RR O)	•	side MLRA 150A)		
	Layers (A5)	T	Loamy Gleye		` '			ed Vertic (F18)		
	Bodies (A6) (LRR P, cky Mineral (A7) (LR		X Depleted Ma	` '			•	side MLRA 150A, 150B) ont Floodplain Soils (F19) (LRR P, T)		
	• , , ,		Depleted Da		` '			llous Bright Floodplain Soils (F20)		
	Muck Presence (A8) (LRR U) 1 cm Muck (A9) (LRR P, T)			essions			(MLRA 153B)			
	Depleted Below Dark Surface (A11)			.RR U)	()		Red Parent Material (F21)			
	Thick Dark Surface (A12)				1) (MLR	A 151)	Very Shallow Dark Surface (F22)			
Coast Pr	rairie Redox (A16) (M	LRA 150 <i>A</i>	Iron-Mangan	ese Ma	sses (F1	2) (LRR (
Sandy M	lucky Mineral (S1) (L	RR O, S)	Umbric Surfa	ace (F13	3) (LRR I	P, T, U)	Barrier Islands Low Chroma Matrix (TS7)			
Sandy G	leyed Matrix (S4)		Delta Ochric	(F17) (MLRA 1	51)	(MLRA 153B, 153D)			
Sandy R	edox (S5)		Reduced Ve	rtic (F18) (MLRA	150A, 1	50B) Other (Explain in Remarks)		
	Matrix (S6)		Piedmont Flo	•	`	, ,	•			
	face (S7) (LRR P, S,		Anomalous E	-						
	e Below Surface (S8))	(MLRA 14				³ Indicators of hydrophytic vegetation and			
(LRR :	S, T, U)		Very Shallow					and hydrology must be present,		
5			(MLRA 13	0, 15ZA	in FL, 1	54)	unie	ss disturbed or problematic.		
	Layer (if observed):	_								
Type:	Non									
Depth (ir	nches):	0					Hydric Soil Prese	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	Cit	y/County: Ripley/Lauderda	ale	Sampling Date: <u>9/21/2022</u>		
Applicant/Owner: Silicon Ranch Corporati			State: TN	Sampling Point: W009-UPI		
Investigator(s): Benjamin Burdette and Jake I	rvin Section	, Township, Range:		- · ·		
Landform (hillside, terrace, etc.): hillside, eas		f (concave, convex, none):	convex	Slope (%): 0-2		
Subregion (LRR or MLRA): LRR P, MLRA 13		Long: -89.521		Datum: NAD83		
Soil Map Unit Name: Loring silt loam, 5 to 8 p		Long	NWI classificat			
Are climatic / hydrologic conditions on the site		Yes X No	-) (If no, e	explain in Remarks.)		
Are Vegetation, Soil, or Hydrold						
Are Vegetation, Soil, or Hydrok						
SUMMARY OF FINDINGS – Attach			-	•		
Hydrophytic Vegetation Present?	YesNo_X_ Is t	he Sampled Area				
		hin 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 require			Surface Soil Crack			
Surface Water (A1)	Aquatic Fauna (B13)			ed Concave Surface (B8)		
High Water Table (A2)	Marl Deposits (B15) (LRR U					
Saturation (A3)	Hydrogen Sulfide Odor (C1)	<u> </u>				
Water Marks (B1)	Oxidized Rhizospheres on L					
Sediment Deposits (B2)	Presence of Reduced Iron (0	<i></i>	Crayfish Burrows			
Drift Deposits (B3)		Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Thin Muck Surface (C7)		Seomorphic Positi	` '		
Iron Deposits (B5)	Other (Explain in Remarks)		Shallow Aquitard (
Inundation Visible on Aerial Imagery (B7))		AC-Neutral Test			
Water-Stained Leaves (B9)		s	Sphagnum Moss ((D8) (LRR T, U)		
Field Observations:						
		0				
		0	_			
Saturation Present? Yes	No X Depth (inches):	0 Wetland Hydro	logy Present?	Yes No _X_		
(includes capillary fringe)						
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, previo	ous inspections), if available	e:			
Remarks:		_				
Remarks.						

ee Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: (A) Total Number of Dominant
500% of total course				That Are OBL, FACW, or FAC:1 (A)
FOOV of total powers				
FOOV of total course				Total Number of Dominant
FOOV of total covery				Species Across All Strata: 2 (B)
FOOV of total covery				```
500% of total course				Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)
FOOV of total covery				Prevalence Index worksheet:
FOOV of total covery				Total % Cover of: Multiply by:
EOO/ of total covers		=Total Cover		OBL species 0 x 1 = 0
50% OFIGIAL COVEL		of total cover:		FACW species 5 x 2 = 10
Sapling/Shrub Stratum (Plot size: 30)	0. 1010. 0010		FAC species 10 x 3 = 30
Liquidambar styraciflua	, 10	Yes	FAC	FACU species 0 x 4 = 0
				UPL species 90 x 5 = 450
				Column Totals: 105 (A) 490 (B
				Prevalence Index = B/A = 4.67
				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
				2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 ¹
	10 :	Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	5 20%	of total cover:	2	
erb Stratum (Plot size: 30)				
Solidago	90	Yes	UPL	¹ Indicators of hydric soil and wetland hydrology must b
Passiflora	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 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
				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
50% of total cover:		of total cover:	20	height.
Woody Vine Stratum (Plot size: 30)		0. 1010. 0010		
, , , , , , , , , , , , , , , , , , , ,				
		Total Cover		Hydrophytic
50% of total cover:		of total cover:		Vegetation Present? Yes No X
emarks: (If observed, list morphological adaptation		or total tovel.		100 N

SOIL Sampling Point: W009-UPL

Depth (inches) 0-20			Redo	x Featur	es					
0-20	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Rer	narks	
	10YR 5/3	95	10YR 5/4	5	С	М	Loamy/Clayey	siltv	loam	
				<u> </u>	<u> </u>					
1- 0.0							21			
	oncentration, D=Deple					d Grains.		PL=Pore Lining, M=		
-	Indicators: (Applicat	ne to all L				e T II)		s for Problematic Hy	dric Solls :	
Histosol	oipedon (A2)		Thin Dark Su Barrier Island					Muck (A9) (LRR O) Muck (A10) (LRR S)		
Black His			(MLRA 15			12)		Prairie Redox (A16)		
	n Sulfide (A4)		Loamy Muck			PP ()		tside MLRA 150A)		
	l Layers (A5)		Loamy Gleye	•	· / ·	ikik O)	•	ced Vertic (F18)		
	Bodies (A6) (LRR P,	T 11)	Depleted Ma					tside MLRA 150A, 1	50B)	
	icky Mineral (A7) (LRF		Redox Dark	,			Piedmont Floodplain Soils (F19) (LRI			
	esence (A8) (LRR U)	,.,,,	Depleted Da		` '		Anomalous Bright Floodplain Soils (F2			
	ick (A9) (LRR P, T)		Redox Depre		, ,		(MLRA 153B)			
	d Below Dark Surface	(A11)	Marl (F10) (L		` ,		Red Parent Material (F21)			
	Thick Dark Surface (A12) Depleted Ochric (F11)			1) (MLR /	A 151)	Very S	Shallow Dark Surface	e (F22)		
Coast Pr	rairie Redox (A16) (MI	LRA 150A), P, T) (out	tside MLRA 138, 152	2A in FL, 154)	
	lucky Mineral (S1) (LF		Umbric Surfa	ace (F13) (LRR F	P, T, U)	Barrie	er Islands Low Chrom	a Matrix (TS7)	
Sandy G	leyed Matrix (S4)		Delta Ochric	(F17) (N	ILRA 15	51)	(ML	.RA 153B, 153D)		
Sandy R	edox (S5)		Reduced Ve	rtic (F18) (MLRA	150A, 1	50B) Other	(Explain in Remarks)	
Stripped	Matrix (S6)		Piedmont Flo	oodplain	Soils (F	19) (MLR	A 149A)			
Dark Sur	rface (S7) (LRR P, S,	T, U)	Anomalous E	Bright Fl	oodplain	Soils (F2	0)			
Polyvalu	e Below Surface (S8)		(MLRA 14	9A, 153	C, 153D)	³ Indica	ators of hydrophytic v	egetation and	
(LRR S	S, T, U)		Very Shallov	/ Dark S	urface (F	-22)	wetland hydrology must be present, unless disturbed or problematic.			
			(MLRA 13	8, 152A	in FL, 1	54)				
	Layer (if observed):									
Restrictive L	None)								
Restrictive L	140116						Hydric Soil Pres	sent? Yes	No X	
Type:		0								
Type: _ Depth (in		0								
Type: _ Depth (in		0								
Type: _ Depth (in		0						_		
Type: _ Depth (in		0								
Type: _ Depth (in		0								
Type: _ Depth (in		0								
Type: _ Depth (in		0								
Type: _ Depth (in		0								
Type:		0								
Type: _ Depth (in		0								
Type: _ Depth (in		0								
Type: _ Depth (in		0								
Type: _ Depth (in		0								
Type: _ Depth (in		0								
Type: _ Depth (in		0								

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: 9/22/22
Applicant/Owner: Silicon Ranch Corpora	tion		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, r	one). concave	Slope (%): 0-2
		•		
Subregion (LRR or MLRA): LRR P, MLRA 1			9.517327	
Soil Map Unit Name: Memphis silt loam, 8 to	12 percent slopes, severely		NWI classificat	ion: N/A
Are climatic / hydrologic conditions on the site	e typical for this time of year?	Yes X	No (If no, e	xplain in Remarks.)
Are Vegetation, Soil, or Hydro	logy significantly distur	bed? Are "Normal Ci	rcumstances" present?	Yes X No
Are Vegetation, Soil, or Hydro	logy naturally problema	atic? (If needed, exp	olain any answers in Re	emarks.)
SUMMARY OF FINDINGS – Attach	site map showing sar	npling 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			
PEM wetland; water collects here but dry at DP19-W10	time of survey			
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required)	ed; 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) (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 In	•	Crayfish Burrows	
Drift Deposits (B3)	Recent Iron Reduction in	` ′		on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Thin Muck Surface (C7)		X Geomorphic Positi Shallow Aquitard (` '
Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7	Other (Explain in Remar	K5)	FAC-Neutral Test	,
Water-Stained Leaves (B9)	,	•	Sphagnum Moss (
			Opriagram Moss (Do) (Likit 1, 0)
Field Observations: Surface Water Present? Yes	No X Depth (inches):	0		
	No X Depth (inches):			
Saturation Present? Yes	No X Depth (inches):		lydrology Present?	Yes X No
(includes capillary fringe)	Bopur (morico).		iyarology i resent.	100 χ 110
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, p	revious inspections), if av	railable:	
,		, ,		
Remarks:				
Tromane.				

Sampling Point:

Tree Stratum (Plot size:30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. 2.				Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
3. 4.				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:
		=Total Cover		OBL species 0 x 1 = 0
FOO/ of total covers				· ———
50% of total cover:	20%	of total cover:		
Sapling/Shrub Stratum (Plot size: 30)				FAC species 10 x 3 = 30
1				FACU species0 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 ¹
·		=Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:		of total cover:		—— Problematic Hydrophytic Vegetation (Explain)
	20%	or total cover.		
Herb Stratum (Plot size: 30)				
Cyperus rotundus	10	Yes	FAC	¹ 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	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
5.				more in diameter at breast height (DBH), regardless of
6.				height.
7.				
8.				Sapling/Shrub – Woody plants, excluding vines, less
9.				than 3 in. DBH and greater than 3.28 ft (1 m) tall.
10.		_		
				Herb – All herbaceous (non-woody) plants, regardless
	_			of size, and woody plants less than 3.28 ft tall.
12				
		=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)				
1				
2				
3.				
4.				
5.				
·		=Total Cover		Hydrophytic
50% of total cover		of total cover:		Vegetation Present? Yes X No
50% of total cover:		or total cover.		Present? Yes X No No
Remarks: (If observed, list morphological adaptations	s below.)			

SOIL Sampling Point: W010-W

		o the dep				ator or co	onfirm the absence	of indicators.)		
Depth	Matrix	0/		Featur		Loc ²	Toytura	Domorko		
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	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		
			_							
¹Type: C=Co	ncentration, D=Deple	etion, RM=	Reduced Matrix, M	IS=Mas	ked San	d Grains.	² Location:	PL=Pore Lining, M=Matrix.		
Hydric Soil II	ndicators: (Applical	ble to all I	RRs, unless othe	rwise r	noted.)		Indicators	for Problematic Hydric Soils ³ :		
Histosol ((A1)		Thin Dark Su	rface (S	9) (LRR	S, T, U)	1 cm M	luck (A9) (LRR O)		
Histic Epi	ipedon (A2)		Barrier Island	ls 1 cm	Muck (S	12)	2 cm N	luck (A10) (LRR S)		
Black His	tic (A3)		(MLRA 15	3B, 153	D)		Coast	Prairie Redox (A16)		
	n Sulfide (A4)		Loamy Muck	y Miner	al (F1) (L	.RR O)	(out	side MLRA 150A)		
Stratified	Layers (A5)		Loamy Gleye	d Matri	x (F2)		Reduc	ed Vertic (F18)		
	Bodies (A6) (LRR P,		Depleted Mat				•	side MLRA 150A, 150B)		
	cky Mineral (A7) (LR		Redox Dark S		` '			ont Floodplain Soils (F19) (LRR P, T)		
	esence (A8) (LRR U)		Depleted Dar		` '		Anomalous Bright Floodplain Soils (F20)			
	ck (A9) (LRR P, T)	(444)		Redox Depressions (F8)				(MLRA 153B) Red Parent Material (F21)		
Depleted Below Dark Surface (A11)				Marl (F10) (LRR U) Depleted Ochric (F11) (MLRA 151)				,		
Thick Dark Surface (A12)				Depleted Ochric (F11) (MLRA 151) Iron-Manganese Masses (F12) (LRR 0				Very Shallow Dark Surface (F22) D, P, T) (outside MLRA 138, 152A in FL, 154)		
Coast Prairie Redox (A16) (MLRA 150A) Sandy Mucky Mineral (S1) (LRR 0, S)			<i></i>	Umbric Surface (F13) (LRR P, T, U)				Islands Low Chroma Matrix (TS7)		
	eyed Matrix (S4)	(ii 0, 0)		Delta Ochric (F17) (MLRA 151)				(MLRA 153B, 153D)		
Sandy Re				Reduced Vertic (F18) (MLRA 150A, 15						
	Matrix (S6)		Piedmont Flo	•	, .			,		
	face (S7) (LRR P, S,	T, U)	Anomalous B							
	e Below Surface (S8)		(MLRA 149	_			³ Indicators of hydrophytic vegetation and			
(LRR S			Very Shallow				wetland hydrology must be present,			
			(MLRA 138	(MLRA 138, 152A in FL, 154)				unless disturbed or problematic.		
Restrictive L	ayer (if observed):									
Type:	None									
Depth (in	ches):	0					Hydric Soil Pres	ent? Yes X No		
Remarks:		_								
Silt deposits of	on top; disturbed soils	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/Lau	ıderdale	Sampling Date: <u>9/22/2022</u>		
Applicant/Owner: Silicon Ranch Corporat	tion	· _	State: TN	Sampling Point: W010-UP		
Investigator(s): Benjamin Burdette and Jake I	Irvin Sec	ction, Township, Range:				
Landform (hillside, terrace, etc.): hillslope; s		relief (concave, convex, n	none): concave	Slope (%): 0-2		
Subregion (LRR or MLRA): LRR P, MLRA 13		•	9.517282	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, Soil, or Hydrol	•		ircumstances" present?			
Are Vegetation, Soil, or Hydrol			plain any answers in Re			
SUMMARY OF FINDINGS – Attach			-			
Hydrophytic Vegetation Present?	YesNo_X_	Is the Sampled Area				
		within a Wetland?	Yes	No X		
	Yes No X					
Remarks:						
Upland point corresponding to W10						
DP20-UP						
HYDROLOGY						
			O : x = m d = m : Indicators	/!!re-use of the required)		
Wetland Hydrology Indicators:	rad: abook all that apply)			(minimum of two required)		
Primary Indicators (minimum of one is require Surface Water (A1)	Aquatic Fauna (B13)		Surface Soil Crack	ed Concave Surface (B8)		
High Water Table (A2)	Marl Deposits (B15) (LRI	- 	Sparsely vegetate Drainage Patterns			
Saturation (A3)	Hydrogen Sulfide Odor (-	Moss Trim Lines (
Water Marks (B1)	Oxidized Rhizospheres of	•				
Sediment Deposits (B2)	Presence of Reduced Iro	- · · · · · -				
Drift Deposits (B3)	Recent Iron Reduction in					
Algal Mat or Crust (B4)	Thin Muck Surface (C7)	· · · · · · · · · · · · · · · · · · ·	Geomorphic Posit			
Iron Deposits (B5)	Other (Explain in Remark	-	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				
Water Table Present? Yes	No X Depth (inches):					
Saturation Present? Yes	No X Depth (inches):		lydrology Present?	Yes No X		
(includes capillary fringe)						
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, pr	revious inspections), if av	vailable:			
Remarks:						
Remarks.						

EGETATION (Four Strata) – Use scientif	Absolute	Dominant	Indicator	Sampling Point:		
ree Stratum (Plot size:)	% 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/B)
				Prevalence Index worksheet:		
				Total % Cover of: N	fultiply 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	_
,				FACU species 0 x 4 =	0	
				UPL species 100 x 5 =	500	
					500	— (B)
						(B)
				Prevalence Index = B/A =	5.00	
				Hydrophytic Vegetation Indicators		
				1 - Rapid Test for Hydrophytic Ve	egetation	
				2 - Dominance Test is >50%		
				3 - Prevalence Index is ≤3.0 ¹		
		=Total Cover		Problematic Hydrophytic Vegeta	tion¹ (Expla	ıin)
50% of total cover:	20%	of total cover:				
erb Stratum (Plot size:30) Glycine max	100	Yes	UPL	The disease of booking and an almost and	lea educado en es	
Gyothe max				¹ Indicators of hydric soil and wetland present, unless disturbed or problematic		must b
				Definitions of Four Vegetation Stra	ata:	
				Tree – Woody plants, excluding vines more in diameter at breast height (DE height.		
				Sapling/Shrub – Woody plants, excl	ludina vinos	e loce
				than 3 in. DBH and greater than 3.28		
/· 				Herb – All herbaceous (non-woody) pof size, and woody plants less than 3		ardless
2						
	100	=Total Cover		Woody Vine – All woody vines great	er than 3.28	8 ft in
50% of total cover: 50%	20%	of total cover:	20	height.		
Woody Vine Stratum (Plot size: 30)						
		=Total Cover		Hydrophytic		
50% of total cover:				Vegetation Present? Yes No		
		of total cover:) X	

SOIL Sampling Point: W010-UPL

Depth	ription: (Describe t Matrix	o ano ao		x Featur				or mandatorol,		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks		
0-20	10YR 6/6	40	10YR 5/6	50	С	M				
0-20	10111 0/0	-10	10111 3/0			101	_			
								-		
4										
	ncentration, D=Depl					d Grains.		PL=Pore Lining, M=Matrix.		
=	ndicators: (Applica	ble to all						for Problematic Hydric Soils ³ :		
Histosol (Thin Dark Su					luck (A9) (LRR O)		
	ipedon (A2)		Barrier Islan		-	12)		luck (A10) (LRR S)		
Black His	` '		(MLRA 15			DD (0)		Prairie Redox (A16)		
	n Sulfide (A4)		Loamy Muck	-		.KK ()	•	side MLRA 150A)		
	Layers (A5) Bodies (A6) (LRR P,	T 11\	Loamy Gleye Depleted Ma					ed Vertic (F18) side MLRA 150A, 150B)		
	cky Mineral (A7) (LR			` '			•	, ,		
			Depleted Da		` '		Piedmont Floodplain Soils (F19) (LRR Anomalous Bright Floodplain Soils (F2			
Muck Presence (A8) (LRR U) 1 cm Muck (A9) (LRR P, T)			Redox Depre		` '		(MLRA 153B)			
	Below Dark Surface	(A11)	Marl (F10) (I		(. 0)		Red Parent Material (F21)			
					1) (MLR /	A 151)		Very Shallow Dark Surface (F22)		
	Coast Prairie Redox (A16) (MLRA 150A) Iron-Mangan									
	ucky Mineral (S1) (L I		Umbric Surfa		-			Islands Low Chroma Matrix (TS7)		
	leyed Matrix (S4)	. ,	Delta Ochric					RA 153B, 153D)		
	edox (S5)		Reduced Ve				50B) Other (Explain in Remarks)		
	Matrix (S6)		Piedmont Flo	oodplain	Soils (F	19) (MLR		•		
Dark Sur	face (S7) (LRR P, S,	T, U)	Anomalous I	Bright Fl	oodplain	Soils (F2	0)			
Polyvalue	e Below Surface (S8))	(MLRA 14	9A, 153	C, 153D)	³ Indica	tors of hydrophytic vegetation and		
(LRR S	S, T, U)		Very Shallov	v 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	е								
Depth (in	ches):	0					Hydric Soil Prese	ent? Yes No X		
Remarks:										
Dual matrix: 1	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/Lau	uderdale	Sampling Date: 9/22/22
Applicant/Owner: Silicon Ranch Corporat	tion	<u>-</u>	State: TN	Sampling Point: W011-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 13		,	89.518312	Datum: NAD83
Soil Map Unit Name: Adler silt loam, 0 to 2 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, Soil, or Hydrol	logy significantly distur		circumstances" present	
Are Vegetation, Soil, or Hydrol			plain any answers in Re	
SUMMARY OF FINDINGS – Attach	<u> </u>		-	
Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area		
	Yes X No	within a Wetland?	Yes X	No
Wetland Hydrology Present?	Yes X No		<u>—</u>	
PEM wetland; water collects here but dry at DP21-W11	time of survey			
HYDROLOGY				
Wetland Hydrology Indicators:				(minimum of two required)
Primary Indicators (minimum of one is requir	ed; check all that apply)		X Surface Soil Crac	
Surface Water (A1)	Aquatic Fauna (B13)			ed Concave Surface (B8)
High Water Table (A2)	Marl Deposits (B15) (LR	≀R U)	X Drainage Patterns	s (B10)
Saturation (A3)	Hydrogen Sulfide Odor (Moss Trim Lines (
— Water Marks (B1)	Oxidized Rhizospheres	= : :	Dry-Season Wate	
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	rks)	Shallow Aquitard	
Inundation Visible on Aerial Imagery (B7	')		FAC-Neutral Test	` '
Water-Stained Leaves (B9)		1	Sphagnum Moss	(D8) (LRR T, U)
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 I	Hydrology Present?	Yes <u>X</u> No
(includes capillary fringe)				
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, pr	revious inspections), it av	vailable:	
Remarks:				
Remarks:				

Trop Stratum (Diet eine 20	Absolute	Dominant	Indicator Status	Deminance Test weeksheets
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:
2.				Number of Dominant Species That Are OBL, FACW, or FAC: 1 (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: 50.0% (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 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 ¹
		=Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20%	of total cover:		
Herb Stratum (Plot size: 30)	<u></u>			
1. Cyperus rotundus	10	Yes	FAC	¹ 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	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
5.				more in diameter at breast height (DBH), regardless of
6.				height.
7.				
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. bbit and greater than 5.25 it (1 m) tail.
10.				
11.				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
12.				of size, and woody plants less than 5.20 it tall.
	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)				
1.				
2.				
3.				
4.				
5.				Lhudwanhudia
		=Total Cover		Hydrophytic Vegetation
50% of total cover:	20%	of total cover:		Present? Yes X No
Remarks: (If observed, list morphological adaptations	s below)			<u> </u>
	2 201011.			

SOIL Sampling Point: W011-W

	ription: (Describe t	o the dep				ator or co	onfirm the absenc	e of indicators.)				
Depth (inches)	Matrix Color (moist)	0/			eatures		Toytura	Remarks				
(inches)	Color (moist)	<u>%</u> _	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture					
0-10	10YR 4/4	80	10YR 5/3	20				fine silt				
10-20	10YR 5/4	50	10YR 4/6	50				fine silt				
¹ Type: C=Co	ncentration, D=Deple	etion, RM=	Reduced Matrix, M	IS=Mas	ked San	d Grains.	² Location	: PL=Pore Lining, M=Matrix.				
Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Indicators for Problematic Hydric Soils ³ :												
Histosol ((A1)		Thin Dark Su	rface (S	59) (LRR	S, T, U)	1 cm	Muck (A9) (LRR O)				
Histic Epi	pedon (A2)		Barrier Island	Barrier Islands 1 cm Muck (S12)				2 cm Muck (A10) (LRR S)				
Black His	tic (A3)		(MLRA 15	(MLRA 153B, 153D)				Coast Prairie Redox (A16)				
Hydrogen	n Sulfide (A4)		Loamy Muck	y Miner	al (F1) (L	.RR O)	(outside MLRA 150A)					
Stratified	Layers (A5)		Loamy Gleye	d Matri	x (F2)		Reduced Vertic (F18)					
Organic E	Bodies (A6) (LRR P,	Depleted Ma	Depleted Matrix (F3)				(outside MLRA 150A, 150B)					
5 cm Muc	cky Mineral (A7) (LR	Redox Dark	Redox Dark Surface (F6)				Piedmont Floodplain Soils (F19) (LRR P, T)					
Muck Pre	esence (A8) (LRR U)	Depleted Dar	Depleted Dark Surface (F7)				Anomalous Bright Floodplain Soils (F20)					
1 cm Muc	ck (A9) (LRR P, T)		Redox Depre	Redox Depressions (F8)				(MLRA 153B)				
Depleted	Below Dark Surface	(A11)	Marl (F10) (L	Marl (F10) (LRR U)				Red Parent Material (F21)				
Thick Dar	rk Surface (A12)		Depleted Oct	Depleted Ochric (F11) (MLRA 151)				Very Shallow Dark Surface (F22)				
Coast Pra	airie Redox (A16) (M	LRA 150A	() Iron-Mangan	Iron-Manganese Masses (F12) (LRR C								
	ucky Mineral (S1) (Li		Umbric Surface (F13) (LRR P, T, U)				Barrier Islands Low Chroma Matrix (TS7)					
	eyed Matrix (S4)		Delta Ochric (F17) (MLRA 151)				(MLRA 153B, 153D)					
Sandy Re			Reduced Vertic (F18) (MLRA 150A, 150B) Other (Explain in Remarks)									
	Matrix (S6)		Piedmont Floodplain Soils (F19) (MLRA 149A)									
	face (S7) (LRR P, S,	Anomalous E	-									
Polyvalue Below Surface (S8)			•	(MLRA 149A, 153C, 153D)				³ Indicators of hydrophytic vegetation and				
(LRR S, T, U)				Very Shallow Dark Surface (F22) (MLRA 138, 152A in FL, 154)				wetland hydrology must be present, unless disturbed or problematic.				
Dootriotive I	aver (if abanced).		(WILRA 13	o, 152A	in FL, 1	34)	un	less disturbed or problematic.				
Type:	ayer (if observed): None	e										
Depth (inches): 0								Hydric Soil Present? Yes X No				
Remarks:							.,,	<u> </u>				
	on top; disturbed soils	s from agr	iculture									
·		Ū										

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			State: TN	Sampling Point: W011-UPL			
Investigator(s): Benjamin Burdette and Jake I	rvin Secti	ion, Township, Range:		<u> </u>			
Landform (hillside, terrace, etc.): hillslope; so	_	elief (concave, convex, n	none): concave	Slope (%): 0-2			
Subregion (LRR or MLRA): LRR P, MLRA 13		•	9.518225	Datum: NAD83			
Soil Map Unit Name: Adler silt loam, 0 to 2 pe			9.516225 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 Hydrok	•		rcumstances" present?				
Are Vegetation, Soil, or Hydrold			lain any answers in Re				
SUMMARY OF FINDINGS – Attach	' 		-				
Hydrophytic Vegetation Present?	Yes No X I	ls the Sampled Area					
		within a Wetland?	Yes	No X			
	Yes No X						
Remarks:							
Upland point corresponding to W11							
DP22-UP							
HYDROLOGY				_			
Wetland Hydrology 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	· ·	Drainage Patterns (B10)				
Saturation (A3)	Hydrogen Sulfide Odor (C	· ·	Moss Trim Lines (•			
Water Marks (B1)	Oxidized Rhizospheres or	-	Dry-Season Water Table (C2)				
Sediment Deposits (B2)	Presence of Reduced Iron	` ′	Crayfish Burrows				
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)	Other (Explain in Remarks	s) _	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					
Water Table Present? Yes	No X Depth (inches):	0 ,,,,,,		. N V			
Saturation Present? Yes	No X Depth (inches):	0 Wetland H	lydrology Present?	Yes No _X_			
(includes capillary fringe)	10 - Service Oran pulating page 2 may	' !	9 61				
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, pre	vious inspections), it av	allable:				
Remarks:							
Nemarks.							

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

<u>Tree Stratum</u> (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	70 COVEI	оресіез:	Otatus		
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 6.				Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0	0% (A/B)
7.				Prevalence Index worksheet:	<u> </u>
8.					ply 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.					5.00
5.				Hydrophytic Vegetation Indicators:	0.00
6.				1 - Rapid Test for Hydrophytic Veget	tation
7.				2 - Dominance Test is >50%	auon
8.				3 - Prevalence Index is ≤3.0 ¹	
0.		Total Cayor		Problematic Hydrophytic Vegetation ¹	(Evalois)
F00/ of total covers		=Total Cover		Problematic Hydrophytic Vegetation	(⊏xpiairi)
50% of total cover:	20%	of total cover:			
Herb Stratum (Plot size: 30)	400	V	LIDI		
1. Glycine max	100	Yes	UPL	¹ Indicators of hydric soil and wetland hyd	
2.				present, unless disturbed or problematic.	
3.				Definitions of Four Vegetation Strata:	
5.				Tree – Woody plants, excluding vines, 3 more in diameter at breast height (DBH),	
6.				height.	
7.				Conline/Chrush Woody plants evaluations	ag vinaa laaa
8.				Sapling/Shrub – Woody plants, excluding than 3 in. DBH and greater than 3.28 ft (
9] c = = g c.=c (,
10.					
11.				Herb – All herbaceous (non-woody) plant of size, and woody plants less than 3.28	
12.				or size, and woody plants loss than 6.26	it tall.
	100 =	Total Cover		Woody Vine – All woody vines greater th	nan 3.28 ft in
50% of total cover: 50	20%	of total cover:	20	height.	
Woody Vine Stratum (Plot size: 30)					
1.					
2.					
3.					
1					
5.					
		Total Cover		Hydrophytic	
50% of total cover:		of total cover:		Vegetation Present? Yes No	×
		or total cover.		1103cm: 10310	
Remarks: (If observed, list morphological adaptation	s below.)				

W011-UPL

Sampling Point:

SOIL Sampling Point: W011-UPL

Profile Desci	ription: (Describe to	the depth i	needed to docu	ment th	ne indica	tor or co	onfirm the absence	of indicators.)			
Depth	Matrix		Redox	c Feature	es						
(inches)	Color (moist)	% C	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks			
0-20	10YR 6/6	40	10YR 5/6	50	С	М					
								· · · · · · · · · · · · · · · · · · ·			
1Type: C=Ce	ncentration, D=Deple	tion DM-Dc	duced Metrix M		od Sono	Croins	² l coation:	PL=Pore Lining, M=Matrix.			
	ndicators: (Applicat					i Grairis.		for Problematic Hydric Soils ³ :			
Histosol (HE TO ALL LIKE	Thin Dark Su			S T III		Muck (A9) (LRR O)			
	pedon (A2)	_	Barrier Island	•				Muck (A10) (LRR S)			
Black His		_	(MLRA 153			12)		Prairie Redox (A16)			
	Sulfide (A4)		Loamy Mucky	•	,	RR O)		side MLRA 150A)			
	Layers (A5)	_	Loamy Gleye	,	· , ·	,	•	eed Vertic (F18)			
	Bodies (A6) (LRR P,	T, U)	Depleted Mat		,			side MLRA 150A, 150B)			
	cky Mineral (A7) (LRI	_	Redox Dark S	Surface	(F6)		Piedm	ont Floodplain Soils (F19) (LRR P, T)			
Muck Pre	esence (A8) (LRR U)	_	Depleted Dar	k Surfac	ce (F7)		Anoma	alous Bright Floodplain Soils (F20)			
1 cm Mud	ck (A9) (LRR P, T)	_	Redox Depre	ssions (F8)		(MLI	RA 153B)			
Depleted	Below Dark Surface	(A11)	Marl (F10) (L l	RR U)	arent Material (F21)						
Thick Da	rk Surface (A12)	_	Depleted Och	rric (F11) (MLRA	151)	Very Shallow Dark Surface (F22)				
Coast Pra	airie Redox (A16) (MI	LRA 150A)_	Iron-Mangane	ese Mas	ses (F12	2) (LRR C	D, P, T) (out) (outside MLRA 138, 152A in FL, 154)			
Sandy M	ucky Mineral (S1) (LF	R O, S) _	Umbric Surfa	ce (F13) (LRR P	, T, U)	r Islands Low Chroma Matrix (TS7)				
	eyed Matrix (S4)	_	Delta Ochric (RA 153B, 153D)			
Sandy Re		_	Reduced Ver	•	, ,		· —	(Explain in Remarks)			
	Matrix (S6)	–	Piedmont Flo								
	face (S7) (LRR P, S,		Anomalous B	-				As a set book and a set of second at the second			
	e Below Surface (S8)		(MLRA 149					ators of hydrophytic vegetation and			
(LRR S	5, I, U)	_	Very Shallow				wetland hydrology must be present, unless disturbed or problematic.				
			(MLRA 138	3, 132A	In FL, 1) 4)	unie	ess disturbed or problematic.			
	ayer (if observed):										
Type:	None										
Depth (in	ches):	0					Hydric Soil Pres	ent? Yes No X			
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/La	uderdale S	ampling Date: 9/22/22
Applicant/Owner: Silicon Ranch Corpora	ation	. , , <u>, , , , , , , , , , , , , , , , ,</u>		ampling Point: W012-W
Investigator(s): Benjamin Burdette and Jake		ction, Township, Range:		
Landform (hillside, terrace, etc.): terrace		relief (concave, convex,		Slope (%): 0-2
				_ ' ` '
Subregion (LRR or MLRA): LRR P, MLRA			89.521802	Datum: NAD83
Soil Map Unit Name: Adler silt loam, 0 to 2	percent slopes, occasionally flo	ooded	NWI classification	: <u>N/A</u>
Are climatic / hydrologic conditions on the sit	e typical for this time of year?	Yes X	No (If no, expl	lain in Remarks.)
Are Vegetation, Soil, or Hydro	ologysignificantly distur	bed? Are "Normal C	Circumstances" present?	Yes X No
Are Vegetation, Soil, or Hydro	ologynaturally problema	atic? (If needed, ex	plain any answers in Rema	arks.)
SUMMARY OF FINDINGS - Attach	ı site map showing san	npling point locati	ons, transects, impo	ortant features, etc.
Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area		
Hydric Soil Present?	Yes X No	within a Wetland?	Yes X N	lo
Wetland Hydrology Present?	Yes X No		<u> </u>	<u> </u>
Remarks: PEM wetland DP23-W12				
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators (mi	nimum of two required)
Primary Indicators (minimum of one is requ			X Surface Soil Cracks (
Surface Water (A1)	Aquatic Fauna (B13)		X Sparsely Vegetated (
High Water Table (A2)	Marl Deposits (B15) (LR		X Drainage Patterns (B	·
Saturation (A3) Water Marks (B1)	Hydrogen Sulfide Odor (Oxidized Rhizospheres		Moss Trim Lines (B10 Dry-Season Water Ta	•
Sediment Deposits (B2)	Presence of Reduced Iro		Crayfish Burrows (C8	
Drift Deposits (B3)	Recent Iron Reduction in		Saturation Visible on	
X Algal Mat or Crust (B4)	Thin Muck Surface (C7)		Geomorphic Position	,
Iron Deposits (B5)	Other (Explain in Remar		Shallow Aquitard (D3	` '
Inundation Visible on Aerial Imagery (B		•	X FAC-Neutral Test (D	5)
Water-Stained Leaves (B9)			Sphagnum Moss (D8	(LRR T, U)
Field Observations:				
Surface Water Present? Yes	No X Depth (inches):	0		
Water Table Present? Yes		0		
Saturation Present? Yes	No X Depth (inches):	0 Wetland	Hydrology Present?	Yes X No
(includes capillary fringe)				
Describe Recorded Data (stream gauge, m	onitoring well, aerial photos, pr	revious inspections), if a	vailable:	
Remarks:				

T 0: (D) (: 00)	Absolute	Dominant	Indicator	
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-4-1 O-100		Total % Cover of: Multiply by:
EOO/ of total covers		=Total Cover		OBL species 0 x1 = 0
50% of total cover:		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 ¹ (Explain)
50% of total cover:	20%	of total cover:		
Herb Stratum (Plot size: 30)	_	_		
1. Cyperus rotundus	5	Yes	FAC	¹ 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				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				Hade All back and a constant of the constant o
				I Herb – All nerbaceous (non-woody) plants, regardless
11				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				of size, and woody plants less than 3.28 ft tall.
12.		=Total Cover		of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in
12		=Total Cover	3	of size, and woody plants less than 3.28 ft tall.
12.			3	of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in
12			3	of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in
12			3	of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in
12			3	of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in
12			3	of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in
12			3	of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in height.
12	20%		3	of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in
12	20%	of total cover:	3	of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.28 ft in height. Hydrophytic
12	20%	of total cover:	3	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
12	20%	of total cover:	3	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
12	20%	of total cover:	3	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
12	20%	of total cover:	3	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
12	20%	of total cover:	3	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: W012-W

	ription: (Describe t	o the dept				ator or co	onfirm the absence	e of indicators.)	
Depth	Matrix			x Featur		. 2			
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture	Remarks	
0-20	10YR 5/2	90	10YR 4/4	10	С	M	Loamy/Clayey	silt loam	
								_	
								_	
								_	
¹Type: C=Co	oncentration, D=Deple	etion RM=	Reduced Matrix M	MS=Mas	ked San	d Grains	² l ocation	PL=Pore Lining, M=Matrix.	
• •	ndicators: (Applica					<u> </u>		rs for Problematic Hydric Soils	3 _:
Histosol			Thin Dark Su			S, T, U)		Muck (A9) (LRR O)	
	pipedon (A2)		Barrier Island	-				Muck (A10) (LRR S)	
Black His	stic (A3)		(MLRA 15			,		et Prairie Redox (A16)	
Hydroge	n Sulfide (A4)		Loamy Muck	y Miner	al (F1) (L	RR O)	(oi	ıtside MLRA 150A)	
Stratified	Layers (A5)		Loamy Gleye	ed Matri	x (F2)		Redu	iced Vertic (F18)	
Organic	Bodies (A6) (LRR P,	T, U)	X Depleted Ma	trix (F3))		(oı	ıtside MLRA 150A, 150B)	
5 cm Mu	cky Mineral (A7) (LR	R P, T, U)	Redox Dark	Surface	(F6)		Pied	mont Floodplain Soils (F19) (LRR	≀ P, T)
Muck Pre	esence (A8) (LRR U)		Depleted Da	rk Surfa	ce (F7)		Anor	nalous Bright Floodplain Soils (F2	20)
	ck (A9) (LRR P, T)		Redox Depre		(F8)		•	LRA 153B)	
	I Below Dark Surface	(A11)	Marl (F10) (L					Parent Material (F21)	
	irk Surface (A12)		Depleted Oc					Shallow Dark Surface (F22)	
	rairie Redox (A16) (M		<u> </u>					itside MLRA 138, 152A in FL, 1	•
	lucky Mineral (S1) (L l	KK (), (5)	Umbric Surfa					er Islands Low Chroma Matrix (T	57)
	leyed Matrix (S4) edox (S5)		Delta Ochric Reduced Ver				•	LRA 153B, 153D)	
	Matrix (S6)		Piedmont Flo	,	, ,			r (Explain in Remarks)	
	face (S7) (LRR P, S,	T 11)	Anomalous E						
	e Below Surface (S8)		(MLRA 14	-				cators of hydrophytic vegetation a	and
	S, T, U)		Very Shallow			•		etland hydrology must be present	
•	-, , -,		(MLRA 13		•	•		less disturbed or problematic.	,
Restrictive L	_ayer (if observed):							· · · · · · · · · · · · · · · · · · ·	
Type:	None	е							
Depth (in	nches):	0					Hydric Soil Pre	esent? Yes X No	
Remarks:	<u> </u>								

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/L	Lauderdale Sampling Date: 9/22/2022			
Applicant/Owner: Silicon Ranch Corporati		State: TN Sampling Point: W012-UPL			
Investigator(s): Benjamin Burdette and Jake I	Irvin Section, Township, Range	e:			
Landform (hillside, terrace, etc.): terrace	Local relief (concave, conve				
Subregion (LRR or MLRA): LRR P, MLRA 13	<u> </u>	: -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 Hydrok		Il Circumstances" present? Yes X No			
Are Vegetation, Soil, or Hydrok		explain any answers in Remarks.)			
		ations, transects, important features, etc.			
Hydrophytic Vegetation Present?	Yes No _X Is the Sampled Area	a			
Hydric Soil Present?	Yes No X within a Wetland?	Yes No _X_			
Wetland Hydrology Present?	Yes No X				
Upland point corresponding to W12 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)	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)	Geomorphic Position (D2)			
Iron Deposits (B5)	Other (Explain in Remarks)	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 Wetlan	nd Hydrology Present? Yes No _X			
(includes capillary fringe)	" '	9 61			
Describe Recorded Data (stream gauge, mor	nitoring well, aerial photos, previous inspections), if	r available:			
Remarks:					
Remains.					

7 0	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30)	% Cover	Species?	Status	Dominance Test worksheet:
1 2.				Number of Dominant Species That Are OBL. FACW. or FAC: 0 (A)
3.				(,
3. 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 ¹
	=	=Total Cover		Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	20%	of total cover:		
Herb Stratum (Plot size: 30)				
1. Glycine max	100	Yes	UPL	¹ 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.				Herb – All herbaceous (non-woody) plants, regardless
11.				of size, and woody plants less than 3.28 ft tall.
12				
F00/ - 64-4-1		=Total Cover	22	Woody Vine – All woody vines greater than 3.28 ft in height.
50% of total cover: 50	20%	of total cover:	20	neight.
Woody Vine Stratum (Plot size: 30)				
1.				
2.				
3 4.				
5.				
5		=Total Cover		Hydrophytic
50% of total cover:		of total cover:		Vegetation Present? Yes No _ X _
		Of total Gover.		Flesent: 165 NO A
Remarks: (If observed, list morphological adaptations	s below.)			

SOIL Sampling Point: W012-UPL

Depth	Matrix	to the dept		ιπ ε πι τι κ Featur		UI U	onfirm the absence	or mulca		
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Rem	narks
0-20	10YR 5/3	95	10YR 5/4	5	С	M	Loamy/Clayey		silt le	oam
0 20				<u> </u>	<u> </u>					24
			_							
¹ Type: C=Co	ncentration, D=Dep	letion RM=	Reduced Matrix M	 M=2N	ked San	d Grains	2l ocation:	PI =Pore	Lining, M=I	 Matrix
	ndicators: (Applica					a Oramo.				dric Soils ³ :
Histosol (Thin Dark Su			S. T. U)			(LRR O)	
	pedon (A2)		Barrier Island) (LRR S)	
Black His			(MLRA 15		-	,		•	edox (A16)	
	Sulfide (A4)		Loamy Muck			RR O)	(out	side MLR	RA 150A)	
Stratified	Layers (A5)		Loamy Gleye	ed Matri	x (F2)		Reduc	ed Vertic	(F18)	
Organic I	Bodies (A6) (LRR P,	T, U)	Depleted Ma	trix (F3))		(out	side MLR	RA 150A, 15	0B)
5 cm Mud	cky Mineral (A7) (LR	R P, T, U)	Redox Dark	Surface	(F6)		Piedm	ont Flood	plain Soils (F19) (LRR P, T)
Muck Pre	esence (A8) (LRR U))	Depleted Da	rk Surfa	ce (F7)			-	•	in Soils (F20)
	ck (A9) (LRR P, T)		Redox Depre		(F8)		•	RA 153B)		
	Below Dark Surface	e (A11)	Marl (F10) (L						erial (F21)	
	rk Surface (A12)		Depleted Oc	-					ark Surface	,
	airie Redox (A16) (M				-					A in FL, 154)
	ucky Mineral (S1) (L	.KK (J, 5)	Umbric Surfa) Barrier Islands Low Chroma Matrix (TS7 (MLRA 153B, 153D)			
	eyed Matrix (S4) edox (S5)		Delta Ochric Reduced Ver				•	•	, ופנט n Remarks)	
	Matrix (S6)		Piedmont Flo					(Explail) ii	ii Neiliaiks)	
	face (S7) (LRR P, S	. T. U)	Anomalous E	•	,	, ,	•			
	Below Surface (S8		(MLRA 14	_		-		itors of hy	drophytic ve	egetation and
(LRR S		,	Very Shallow			•		•	ology must l	· ·
			(MLRA 13	8, 152A	in FL, 1	54)	unle	ess disturb	oed or probl	ematic.
Restrictive L	ayer (if observed):									
Type:	Non	ne								
Depth (in	ches):	0					Hydric Soil Pres	ent?	Yes	No X
Remarks:										

itative Rating 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

^{*}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 ²	ft on side	yd on 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 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 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 nd 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.

wetlands	3a. Sources of Water. 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.	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	3c. Maximum water depth. 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		
	Ition 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			
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 fields

identifie to have alteratio	ny of the disturbances and 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.	NOT SUF Choose "recove assign a score	red" and
Select	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**

SR Ripley II

Metric 3 Total 5.00

NOT CLIDE

W001

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 w ca to 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 portrolling. 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 hay be more appropriate as fixed locations on a	apr	amples of substrate/soil disturba ply): filling and grading plowing grazing (hooves) vehicle use (off-road vehicles, sedimentation 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	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					4a Avg		
ra T	b. Habitat development. Select ting of how well-developed the w his question presumes knowledg ference standard examples. If ur	retland is in comparison to e of the types of wetlands	othe and	er ecologically and/or hydrogeom the range in quality typical of the	orphically similar wetla	nds.	
7	ots EXCELLENT. Wetland	appears to represent the t	oest (of its type or class.			
6	ipts 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	nd appears to be a poor to	fair	example of its type or class.			
1	ot POOR. Wetland appear disturbances, successio		le of	f its type or class because of pas	t or present	1	4b Avg.
						-	- 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

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	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	0
Wieliic 3 i Olai	

Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).	
6a. Wetland Vegetation Communities Check each community present <u>both vertically and horizontally</u> within the wetland with an area of at least 0.1 hectares or 1000m ² (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.	
4)Forested 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".	
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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 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		

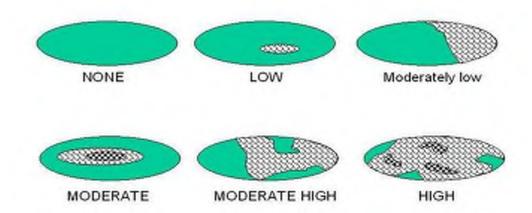


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species. 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	
-1pts	Sparse 5-25% areal cover of invasive species	
0pt	Nearly absent. <5% areal cover of invasive species	
1pt	Absent	1
6d. Microtopography . 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	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				

NON-HGM TRAM Summary Worksheet

	Metric 1: Size	1
	Metric 2: Buffers and surrounding land use	1
	Metric 3: Hydrology	5
Non-HGM Quantitative 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**

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.

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

^{*}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	ft²	yd ²	yd ² ft on yd on ha m ² side side				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

etric 1 Total	
etric 1 Lotal	

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 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.	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 ir dominant land use(s) outside the wetland's buffer zone.	ntensity of	0.00
7pts	VERY LOW. 2 nd 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	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	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.	
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.	
1pt	Part of riparian corridor.	
depth is	timum water depth. 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 iseful 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	ohserved	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

to have caused more than trivial Assign a score 1, 3 or 7, or Assign a score of 12 since Choose "recovered	Have any of the disturbances identified above caused or appear	NOT SURE
recovery from the disturbance.	to have caused more than trivial alterations to the wetland's natural	Choose "recovered" and assign a score of 9.5.

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								
		any of soil or substrate bances caused or	<u>YES</u>		<u>NO</u>	NOT SURE		
	appea than t	ar to have caused more rivial alterations to the nd's natural soils	Assign a score 1, 2 or 3 an intermediate score depending on degree recovery from the disturbance.	€,	Assign a score of 4 since there are no or no apparent modifications.	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 wetle	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	irbances.		
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 T	ating of his que	how well-developed the w	etland is in comparison to e of the types of wetlands	othe and	nis question asks the evaluator to er ecologically and/or hydrogeom the range in quality typical of the DERATELY GOOD.	orphically similar wetla	nds.	
7	pts	EXCELLENT. Wetland	appears to represent the b	oest o	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.								
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.							
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	pts	POOR TO FAIR. Wetlar	nd appears to be a poor to	fair	example of its type or class.			
1	pt	POOR. Wetland appear disturbances, succession		le of	its type or class because of pas	t or present	1	4b Avg.=

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

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

Other (specify):

Other (specify):

Have any of the disturbances YES <u>NO</u> **NOT SURE** 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 one score or double check adjoining numbers and average the score.			
9pts	ts NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.		
6pts	s 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

Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).	
6a. Wetland Vegetation Communities Check each community present <u>both vertically and horizontally</u> within the wetland with an area of at least 0.1 hectares or 1000m ² (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.	
4)Forested 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".	
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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 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.		
0pt	NONE Wetland has no plan view interspersion		

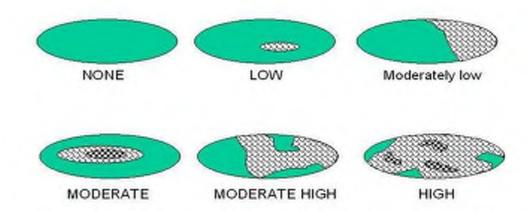


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species. 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	
	6d. Microtopography . 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			
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 Quantitative 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)

W003 **Quantitative Rating Tennessee Rapid Assessment Method**

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

^{*}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 ²	ft on side	yd on 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	ı

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.		1	
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.=	
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 nd 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.

3a. Sources of Water. 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.					
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.	n its water ⁷ Manual				
3 pts	>0.7m (27.6in)					
2pts	0.4 to 0.7m (15.7 to 27.6in)					
1pt	<0.4m (<15.7in)	1				
	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	r 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	Х	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	<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	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	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 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.

	,						
di w ca to 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 portrolling. 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 hay be more appropriate as fixed locations on a	apr	amples of substrate/soil disturba ply): filling and grading plowing grazing (hooves) vehicle use (off-road vehicles, sedimentation 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.		r 3, or Assign a score of 4 since choose "recovere assign a score of 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	t 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.		
	ot RECENT OR NO RECC		have	e occurred recently, and/or the w		1	4a Avg
ra T	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.						
7	ots EXCELLENT. Wetland	appears to represent the t	oest (of its type or class.			
6	vts 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.						
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	disturbances successional state etc					4b Avg.	
						-	- 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, 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.

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

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 other vernal	sq sphagnum or other moss or pools		5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat
(NatureServe (3pts) or unce the ecoregion	ommunity with global rank e): G1 (10pts), G2 (5pts), G2/G3 ommon ecological resource in h (habitat and/or species elogy, wetland type, distribution/ 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 - Olde avg. DBH >=	r-aged mature forested wetland 30 inches		10 pts - Supports species Deemed in Need of Management by TWRA or TN Special Concern by TDEC

Metric 5 Total	0

Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).	0
6a. Wetland Vegetation Communities Check each community present <u>both vertically and horizontally</u> within the wetland with an area of at least 0.1 hectares or 1000m ² (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
4)Forested 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
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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
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.	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 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.		Score	
5pts	pts 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		

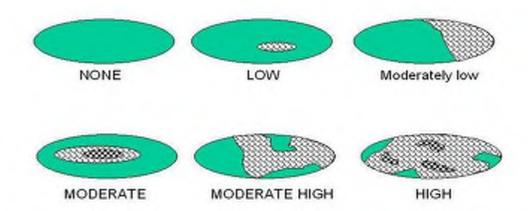


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species. 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		
6d. Microtopography . 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				
	oian 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 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 Quantitative Rating	Metric 4: Habitat	3
	Metric 5: Special Wetland Communities	0
	Metric 6: Plant communities, interspersion, microtopography	3
	TOTAL SCORE	12

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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 09/20 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)	

^{*}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 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.

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 nd 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.	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.				
1pt NARROW. 10m to <25m (32 to <82ft) around the perimeter. 2pt VERY NARROW. <10m (<32ft) around perimeter. 2pt 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 nd 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. 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 nd 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 nd 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]	
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 nd 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	VERY NARROW. <10m (<32ft) around perimeter.		2a Avg.=	
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. Intensity of predominant surrounding land use(s) Select one, or choose up to two and average score, for the intensity of				
3pts MODERATELY HIGH. Residential, pasture, orchard, park, conservation tillage, mowed field, etc.	7pts	VERY LOW. 2 nd growth or older forest, prairie, barren, wildlife area, etc.			
2b Ave	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.=	

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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.

3a. Sources of Water. 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 <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.					
1pt	Part of riparian corridor.					
depth is	imum water depth. 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	1pt <0.4m (<15.7in)					
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				

3d Avg.= **1.00**

W004

SR Ripley II

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		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				

Have any of the disturbances identified above caused or appear to have caused more than trivial alterations to the wetland's natural hydrologic regime.	ified above caused or appear ve caused more than trivial ations to the wetland's natural plogic regime. 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 SU Choose "recove assign a score		
Select one or double check adjoining numbers and average the score.					

Select	one or double check adjoining numbers and average the score.	score		
12pts	2pts 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 ply): filling and grading plowing grazing (hooves) vehicle use (off-road vehicles, sedimentation 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 than trivial alterations to the wetland's natural soils	Assign a score 1, 2 or 3 an intermediate score depending on degree recovery from the disturbance.	€,	Assign a score of 4 since there are no or no apparent modifications.	Choose "recovered' assign a score of (
s	elect one or double check adj	oining numbers and aver	rage	the score.			
4	ots NONE OR NONE APP. evaluator.	ARENT. There are no distu	ırban	nces or no disturbances apparent	t to the		
3	ots RECOVERED. The we	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. 2.00
ra T	ting of how well-developed the	wetland is in comparison to ge of the types of wetlands	othe and	nis question asks the evaluator to er ecologically and/or hydrogeom the range in quality typical of the DERATELY GOOD.	norphically 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.					4	
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	disturbances, successional state, etc.						4b Avg.=

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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, 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.

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.		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		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
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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 ² (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
4)Forested 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)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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
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.	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 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	ots 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	

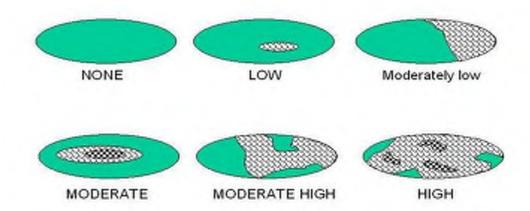


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species . 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		
6d. Microtopography . 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 Quantitative Rating	Metric 4: Habitat	9
	Metric 5: Special Wetland Communities	0
	Metric 6: Plant communities, interspersion, microtopography	6
	TOTAL SCORE	29

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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 9/20/2022 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

^{*}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	ft²	yd ²	ft on side	yd on 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	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	NARROW. 10m to <25m (32 to <82ft) around the perimeter.	1	1	
0pts	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 nd 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	1	
1pt	HIGH. urban, industrial, row cropping, mining, construction, etc.		2b Avg.=	
		_	-3.00	

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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.

3a. Sources of Water. 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. 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.				
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.				
1pt	Part of riparian corridor.				
3c. Maximum water depth. Select only one and assign score. The evaluator does not 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			
	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			

3d Avg.= **1.00**

W005

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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.

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)		other (specify) adjacent to agricultural field		

Have any of the disturbances	<u>YES</u>	<u>NO</u>	NOT SURE			
identified above caused or appear to have caused more than trivial alterations to the wetland's natural hydrologic regime. Assign a score 1, 3 or an intermediate scord depending on degree 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	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.	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**

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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.

	,						
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 grading plowing grazing (hooves) vehicle use (off-road vehicles, construction vehicles) sedimentation dredging, and other mechanical disturbances to the so							
	disturbances caused or appear to have caused more Assign a score 1, 2 or 3, or Assign a score of 4 since Choose "recovere		NOT SURE Choose "recovered" assign a score of 3				
s	elect one 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	t to the		
3	pts RECOVERED. The wetl	and appears to have reco	vere	d from past disturbances.			7
2	pts RECOVERING. The we	tland appears to be in the	proc	cess of recovering from past distu	ırbances.	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 Avg.		
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.							
7	pts EXCELLENT. Wetland	appears to represent the t	oest (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.						
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	disturbances successional state etc					4b Avg.=	
							4.00

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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, 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.

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.	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. =

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	
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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 ² (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
4)Forested 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
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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
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.	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 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	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	

SR Ripley II

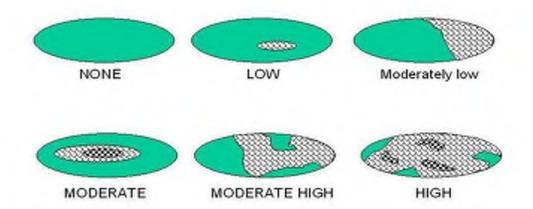


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

	verage of Invasive Plant Species. Refer to Tennessee Exotic Pest Plant Council (http://www.tneppc.org/) for ist. Select only one and assign score.	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	
	Protopography . Check each feature present in the wetland. Assign cover score of 0 to 3 using Table 6. we various microtopograhic habitat features often present in wetlands.	Score
Vegetat	ted hummocks and tussocks	
Coarse	Coarse woody debris >15cm (6in) in diameter	
Standin	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	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 Quantitative Rating	Metric 4: Habitat	11
	Metric 5: Special Wetland Communities	0
	Metric 6: Plant communities, interspersion, microtopography	5.5
	TOTAL SCORE	32

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)

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 *)	
Foto	25 <50 person (west TN)	10. 25 paras (middle TN)	7 <10 cores (cost 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

^{*}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 ² yd ² ft on yd on ha m ²							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 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 mand 0m would be calculated as follows: ABW = (50m + 25m + 10m + 0m)/4 = 21.25m. Intensive land us e.g. active row cropping, paved areas, housing developments, etc.	of 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.	e intensity of	0.00
7pts	VERY LOW. 2 nd 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 conrevery 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.	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.	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	timum water depth. 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	Regularly inundated or saturated	
2pts	Seasonally inundated	3
1pt	Seasonally saturated in the upper 30cm (12in) of soil	

SR Ripley II

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	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 weir(s), 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

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 Choose "recove assign a score	red" and	
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.					

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

Metric 3 Total 7.50

W006

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.

	,						
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 grading — plowing — grazing (hooves) — vehicle use (off-road vehicles, construction vehicles) sedimentation — dredging, and other mechanical disturbances to the second process.							
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	t 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.		
	ot RECENT OR NO RECC		have	e occurred recently, and/or the w		1	4a Avg
ra T	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.						
7	ots EXCELLENT. Wetland	appears to represent the t	oest (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	2pts POOR TO FAIR. Wetland appears to be a poor to fair example of its type or class.						
1	ot POOR. Wetland appear disturbances, successio		le of	f its type or class because of pas	t or present	1	4b Avg.
						-	- 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	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, 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.

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	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.			

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
IVIELLIC 3 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 ² (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
4)Forested 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
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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
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.	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 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	lpt LOW Wetland has a low degree of interspersion.		
0pt	NONE Wetland has no plan view interspersion		

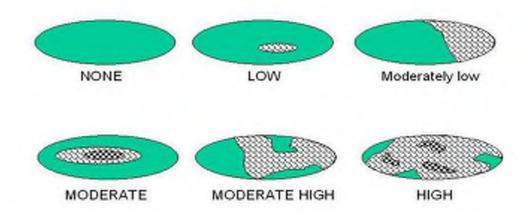


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species. 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	
6d. Microtopography . 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		
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 Quantitative Rating	Metric 4: Habitat	3
	Metric 5: Special Wetland Communities	0
	Metric 6: Plant communities, interspersion, microtopography	2
	TOTAL SCORE	15

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

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)	

^{*}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	ft²	yd ²	ft on side	yd on 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		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 w 25m, 10	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 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.	of 100m,	
7pts	WIDE. >50m (164ft) or more around perimeter.		
4pts	MEDIUM. 25m to <50m (82 to <164ft) around the perimeter.	4	1
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 dominant land use(s) outside the wetland's buffer zone.	intensity of	4.00
7pts	VERY LOW. 2 nd 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

SR Ripley II

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.

3a. Sources of Water. 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. Cor	nnectivity. 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.	0			
1pt	Part of riparian corridor.	0			
depth is	3c. Maximum water depth. Select only one and assign score. The evaluator does not 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)	3			
2pts	0.4 to 0.7m (15.7 to 27.6in)				
1pt	<0.4m (<15.7in)				
	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	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	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

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 SURE 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

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**

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Metric 3 Total 18.00

W007

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 w ca to di	a. Substrate/Soil Disturbance. neck and average. This question sturbances to the soil and surface telland. Note also that the labels ategories are intended to be desc portrolling. In some instances, it in consider the scoring categories sturbance continuum, from very sturbance.	e evaluates physical se substrates of the on the scoring criptive but not nay be more appropriate as fixed locations on a	apr	amples of substrate/soil disturba ply): filling and grading plowing grazing (hooves) vehicle use (off-road vehicles, sedimentation 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 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.			
2	ots RECOVERING. The we	tland appears to be in the	proc	cess 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. 2.50	
ra T	iting of how well-developed the v	vetland is in comparison to e of the types of wetlands	othe and	nis question asks the evaluator to er ecologically and/or hydrogeom the range in quality typical of the DERATELY GOOD.	orphically similar wetla	nds.	
7	ots EXCELLENT. Wetland	appears to represent the I	best o	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	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	disturbances successional state etc					4b Avg.=	
							- O.UU

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				
	Selective cutting	Х	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 Assign a score 1, 3 or 6, Choose "recovered" and appeared to cause more than 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	9pts NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.	
6pts	ots 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. =

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

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 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 ² (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	
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	
4)Forested 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	
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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	
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.	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 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	s 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		

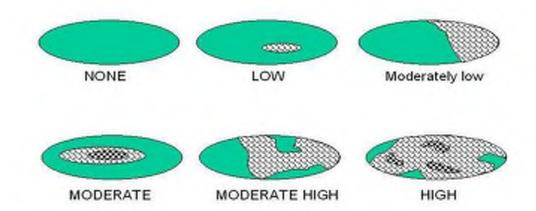


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species . 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	
6d. Microtopography . 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		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 Narrative description 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 Quantitative 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)

W008 **Quantitative Rating Tennessee Rapid Assessment Method**

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)	3
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)	

^{*}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 ²	ft on side	yd on 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	3

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	NARROW. 10m to <25m (32 to <82ft) around the perimeter.	1			
0pts	0pts 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 nd 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 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.

wetland	3a. Sources of Water. 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. Cor	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.	0					
1pt	Part of riparian corridor.	0					
depth is	timum water depth. Select only one and assign score. The evaluator does not 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)	3					
2pts	0.4 to 0.7m (15.7 to 27.6in)						
1pt	<0.4m (<15.7in)						
	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	4					
2pts	Seasonally inundated						
1pt	Seasonally saturated in the upper 30cm (12in) of soil						

SR Ripley II

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	r near the wetland.	
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	The same are a second and a second are a sec						
Χ	X ditch(es), in or near the wetland point source discharges to the (non-stormwate		point source discharges to the (non-stormwater)				
tile(s), in or near the wetland filling/grad		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 dred		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	<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.				
Outland and an development of the development of the control of th							

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 14.00

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.

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di w ca to di	a. Substrate/Soil Disturbance. neck and average. This question sturbances to the soil and surface etland. Note also that the labels ategories are intended to be desc pontrolling. In some instances, it no consider the scoring categories sturbance continuum, from very sturbance.	e evaluates physical se substrates of the on the scoring criptive but not nay be more appropriate as fixed locations on a	apr	amples of substrate/soil disturba ply):filling and gradingplowinggrazing (hooves)vehicle use (off-road vehicles,sedimentationdredging, 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. Assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since there are no or no apparent modifications. Choose "recovered assign a score of 4 since the are no or no apparent modifications. Choose "recovered assign a score of 4 since the are no or no apparent modifications. Choose "recovered assign a score of 4 since the are no or no apparent modifications. Choose "recovered assign a score of 4 since						
s	elect one or double check adjo	oining 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 wet	and appears to have reco	vere	d from past disturbances.			
2	ots RECOVERING. The we	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 not recovered from past disturbances, and/or the disturbances are ongoing.					1	4a Avg.	
ra T	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.						
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	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.= 3.00
							- 3.00

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	NONE OR NONE APPARENT. There are no past or current alterations that are apparent to the evaluator.			
6pts	s 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.

ŀ							
	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 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 ² (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			
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			
4)Forested 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			
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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			
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.	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 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.		
0pt	NONE Wetland has no plan view interspersion		

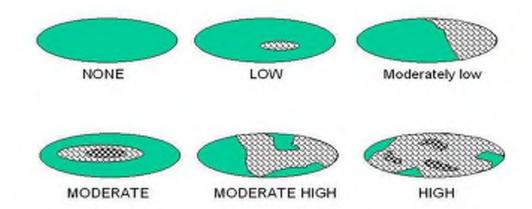


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species . 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	0pt Nearly absent. <5% areal cover of invasive species				
1pt Absent					
6d. Microtopography . 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
	Metric 2: Buffers and surrounding land use	2
	Metric 3: Hydrology	14
Non-HGM Quantitative Rating	Metric 4: Habitat	5
	Metric 5: Special Wetland Communities	5
	Metric 6: Plant communities, interspersion, microtopography	8
	TOTAL SCORE	37

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

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)	I) >25 acres (middle TN) >10 acres (e		
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)	

^{*}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 ²	ft on side	yd on 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 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 nd 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

SR Ripley II

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.

wetlands	3a. Sources of Water. 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	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			
3d. Duration of inundation/saturation. Select one or double check and average the scores if duration is uncertain. The use of ACO 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	X ditch(es), in or near the wetland		point source discharges to the (non-stormwater)
tile(s), in or near the wetland X filling/grading activities 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)	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> Choose "recove assign a score	ered" and
Select	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.				3
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= **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.

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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 gradingplowinggrazing (hooves) vehicle use (off-road vehicles, construction vehicles)sedimentationx_dredging, and other mechanical disturbances to the								
	disturl appea than t	any of soil or substrate bances caused or ar to have caused more rivial alterations to the 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	rage	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.			7
2	ots	RECOVERING. The wet	tland appears to be in the	proc	ess of recovering from past distu	ırbances.	2	
1	pt		VERY. The disturbances disturbances, and/or the		e occurred recently, and/or the warbances are ongoing.	etland has		4a Avg. 2.00
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.								
7	pts	EXCELLENT. Wetland	appears to represent the l	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.								
4	4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.							
3	ots		to be a moderately good successional state, etc. is		nple of its type or class but becar good.	use of past	3	
2	ots	POOR TO FAIR. Wetlan	nd appears to be a poor to	o fair	example of its type or class.			
1	ot	POOR. Wetland appear disturbances, succession		ole of	its type or class because of pas	t or present		4b Avg.=
								- 5.00

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, or an intermediate score, depending on degree of recovery from	Assign a score of 9 since there are no or no apparent modifications.	Choose "recovered" and assign a score of 6.
	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	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
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 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 1000m ² (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.	1
4)Forested 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
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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
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.	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 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	2	
1pt	LOW Wetland has a low degree of interspersion.		
0pt	NONE Wetland has no plan view interspersion		

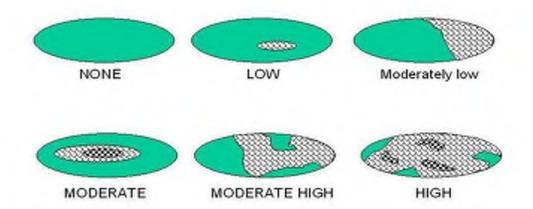


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species. 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	-3	
-1pts	Sparse 5-25% areal cover of invasive species		
0pt	Nearly absent. <5% areal cover of invasive species		
1pt	Absent		
	6d. Microtopography . 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			
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	2
	Metric 2: Buffers and surrounding land use	7
	Metric 3: Hydrology	7
Non-HGM Quantitative Rating	Metric 4: Habitat	8
	Metric 5: Special Wetland Communities	2
	Metric 6: Plant communities, interspersion, microtopography	1
	TOTAL SCORE	27

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)

W010 Quantitative Rating Tennessee Rapid Assessment Method

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

^{*}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 ²	ft on side	yd on 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.

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	NARROW. 10m to <25m (32 to <82ft) around the perimeter.			
0pts	s 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 nd 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 conrevery 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.	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	3c. Maximum water depth. 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)	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)	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.	NOT SUP Choose "recove 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 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**

SR Ripley II

1pt

Metric 3 Total 3.00

NOT CLIDE

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 that apply): filling and gradingplowinggrazing (hooves) Xvehicle use (off-road vehicles, construction vehicles)sedimentationXdredging, and other mechanical disturbances to the soil								
	distur appea than t	any of soil or substrate bances caused or ar to have caused more rivial alterations to the 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	t to the		
3	pts	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.								
not upon considerate most elictriulongos, and/outloodistriulongos, and outloodistriulongos, and outloodistriul				4a Avg				
ra T	ating of his que:	how well-developed the w	retland is in comparison to e of the types of wetlands	othe and	nis question asks the evaluator to er ecologically and/or hydrogeon the range in quality typical of the DERATELY GOOD.	orphically similar wetla	ınds.	
7	pts	EXCELLENT. Wetland	appears to represent the I	best (of its type or class.			
6	pts	ts 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.							
4pts MODERATELY GOOD. Wetland appears to be a fair to good example of its type or class.								
3	pts		to be a moderately good successional state, etc. is		nple of its type or class but becar	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.
							-	- 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.**

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, 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.

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.	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.

L			
	1 '	Om sq sphagnum or other moss or ernal pools	5 pts - Superior fish, waterfowl, bat, or amphibian breeding habitat
	(NatureS (3pts) or the ecore diversity,	al community with global rank erve): G1 (10pts), G2 (5pts), G2/G3 uncommon ecological resource in egion (habitat and/or species geology, wetland type, distribution/ ce) (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
		Older-aged mature forested wetland 1 >= 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 fotal	

Metric 6. Vegetation, Interspersion, and Microtopography (Max 20 points).	0
6a. Wetland Vegetation Communities Check each community present <u>both vertically and horizontally</u> within the wetland with an area of at least 0.1 hectares or 1000m ² (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
4)Forested 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
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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
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.	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 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.		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	

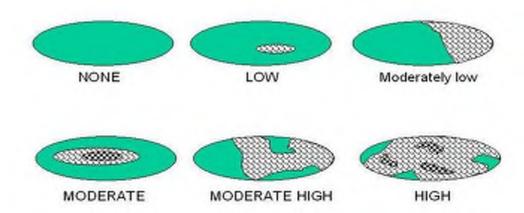


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species. 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	
-1pts	Sparse 5-25% areal cover of invasive species	
0pt	Nearly absent. <5% areal cover of invasive species	0
1pt	Absent	
6d. Microtopography . 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.		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 Quantitative Rating	Metric 4: Habitat	3
	Metric 5: Special Wetland Communities	0
	Metric 6: Plant communities, interspersion, microtopography	1
	TOTAL SCORE	9

SR Ripley II	W010
•	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

^{*}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	ft²	yd ²	ft on side	yd on side	ha	m²	m on side	
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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	ı

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 25m, 1	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	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.=			
	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 nd 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.

3a. Sources of Water. 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.	0				
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	3c. Maximum water depth. 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)	0				
	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 observe	d nracant in	or near the wetland	
Check all that are observe	a present m	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	<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.			
Orbert and an deathly about a finite mount of an analysis of a second						

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	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 3.00

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.

d w c c to	heck an listurbar vetland, ategorie ontrollin o consid	strate/Soil Disturbance. Ind average. This question inces to the soil and surface. Note also that the labels of sea are intended to be described in the scoring categories ince continuum, from very hace.	evaluates physical e substrates of the on the scoring criptive but not lay 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)		
	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 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.			
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	cess of recovering from past distu	ırbances.		
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 1.00	
ra T	ating of his que	how well-developed the w	retland is in comparison to e of the types of wetlands	othe and	nis question asks the evaluator to er ecologically and/or hydrogeom the range in quality typical of the DERATELY GOOD.	orphically similar wetla	ınds.	
7	pts	EXCELLENT. Wetland	appears to represent the I	best (of its type or class.			
6	pts	ots 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	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	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.=
								- 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

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, 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.

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
motific of fotal	

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 ² (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
4)Forested 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
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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
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.	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 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		

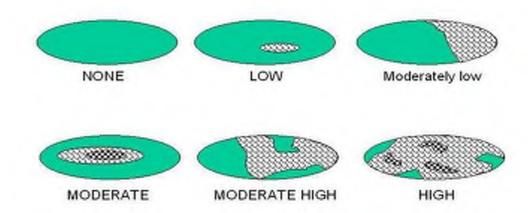


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species. 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	-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			
	6d. Microtopography . 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				
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 Quantitative 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 9/2 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

^{*}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 ²	ft on side	yd on 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	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 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 nd 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.

wetlands	3a. Sources of Water. 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 pother nearby wetland or upland habitat areas.	0		
1pt	Part of riparian corridor.	0		
depth is	imum water depth . 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	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

identifie to have alteratio	ny of the disturbances and 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.	NOT SUF Choose "recove assign a score	ered" and
Select	one or double check adjoini	ng numbers and average the s	score.		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 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

SR Ripley II

1pt

Metric 3 Total _

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 fapply): filling and grading x plowing grazing (hooves) x vehicle use (off-road vehicles, construction vehicles) sedimentation dredging, and other mechanical disturbances to the								
	distur appea than t	any of soil or substrate bances caused or ar to have caused more rivial alterations to the 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.		7
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 1.00			
ra T	ating of his que	how well-developed the w	retland is in comparison to e of the types of wetlands	othe and	nis question asks the evaluator to er ecologically and/or hydrogeom the range in quality typical of the DERATELY GOOD.	orphically similar wetla	ınds.	
7	pts	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	pts		to be a moderately good successional state, etc. is		nple of its type or class but becar 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	its type or class because of pas	t or present	1	4b Avg.=
							•	- 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):

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.

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.	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.

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 Management by TWRA or TN Special Concern by TDEC

(Metric 5 Total	0
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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 ² (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.	1
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
4)Forested 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
5)Mudflats The "mudflat" class is equivalent to the "unconsolidated bottom/mud" class/subclass (PUB ₃) 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
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.	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 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.		Score		
5pts	s 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			

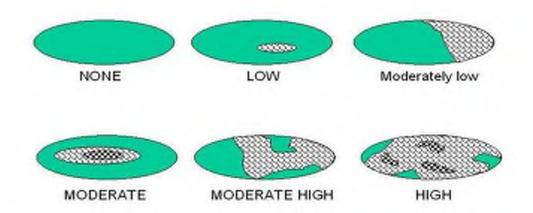


Figure 1. Hypothetical Wetlands for estimating degree of interspersion

6c. Coverage of Invasive Plant Species. 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					
-1pts	Sparse 5-25% areal cover of invasive species					
0pt	Nearly absent. <5% areal cover of invasive species	0				
1pt	Absent					
	6d. Microtopography . 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	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 Quantitative 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	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)		
Degree of historical alteration to natural channel morphology & hydrolog Slight	y (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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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) = 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	О
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. 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	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 2	4.00
	ons, Watercourse is a Wet Weather dary Indicator Score < 19 points

Notes :			

² 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: 9/19/22
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 : 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 (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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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) = 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	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	0
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. 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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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14	U	162	•

25.Macrobenthos (record type & abundance): beetles

² 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)

TCIIIC33CC	Division of Water Resources, Vers	ion 1.5 (i mable i onn)	
Named Waterbody: UNT to Hyde Cree	ek		Date/Time: 9/20/22
Assessors/Affiliation: Benjamin Burde	tte and Jake Irvin		Project ID :
Site Name/Description: S003	SR Ripley II		
Site Location: Runs through agricultu	ral field along property bound	dary	
HUC (12 digit): Cane Creek Upper 08	0102080701	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 : Loring silt loam	, 5 to 8 percent slopes, eroded	Source: USDA We	eb Soil Survey
Surrounding Land Use : Forested, Agr	icultural (cotton & corn)		
Degree of historical alteration to natural Mod	channel morpholoav & hvdrolog derate	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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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) = 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	
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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	16.00	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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: 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	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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	15.00
	litions, Watercourse is a Wet Weather andary Indicator Score < 19 points

Notes :			

² 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 Resources, Ver	Sion 1.5 (Fillable Form)	
Named Waterbody: Hyde Creek	Date/Time: 9/20/22	
Assessors/Affiliation: Benjamin Burdette and Jake Irvin	Project ID:	
Site Name/Description: S005	SR Ripley II	
Site Location: Runs through 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 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 & corn)		
Degree of historical alteration to natural channel morphology & hydrological Severe	ogy (select one & describe fully in Notes):	

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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	V	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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: \$5
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] 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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	70
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ 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:

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

² 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, Vers	sion 1.5 (Fillable F	-orm)			
Named Waterbody: Hyde Creek		Dat	te/Time: 9/20/22		
Assessors/Affiliation: Benjamin Burdette and Jake Irvin		Pro	ject ID :		
Site Name/Description: S006		SR	Ripley II		
Site Location: Starts off-site; flows into riser and flows into foreste	d area off-site)			
HUC (12 digit): Cane Creek Upper 080102080701	Latitude: Se	e Table	1.		
Previous Rainfall (7-days) : 0.03"	Longitude: Se	e Table	1.		
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USA	CE Antecede	ent Prec	ipitation Tool		
Watershed Size: 29,327.89	County: Laud	erdale			
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: USD	A Web S	oil Survey		
Surrounding Land Use: Forested, Agricultural (cotton & corn)					
Degree of historical alteration to natural channel morphology & hydrolog Severe	gy (select one 8	describe	fully in Notes) :		
Primary Field Indicators Obser	rved				
Primary Indicators		NO	YES		
Hydrologic feature exists solely due to a process discharge					
2. Defined bed and bank absent, vegetation composed of upland and F		✓	WWC		
3. Watercourse dry anytime during February through April 15th, under precipitation / groundwater conditions		wwc			
4. Daily flow and precipitation records showing feature only flows in director to rainfall	ect response	✓	wwc		
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase	month	V	Stream		
6. Presence of fish (except Gambusia)		✓	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 v	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. Guidance for the interpretation and scoring of both the primary & secondary indicator.	ors as supporti mplete the seco e below. econdary indica	ng evider andary ind tors is pro	nce. icator table		
Overall Hydrologic Determination = STREAM					
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. 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	23.00	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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)

Torritodoco Britistori e Video i Robodicoco, Vero	ion no (i mable 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: S007		SR Ripley II
Site Location: Starts off-site; flows into S6		
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, 12 to 20 percent slopes, severely eroded, northern phase; 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 & hydrology Moderate	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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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. 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	19.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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, vers	ion 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: S008	SR Ripley II
Site Location: Starts with WWC 21; flows from corn field into fores	sted area 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 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 & 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	Ove
Secondary Indicator Score (if applicable) = _{19.25}	Sec
ustification / Notes :	Justi
S8	_S8

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	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	0.5
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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 1	19.25
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Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Ν	otes	:

11.Grade controls: culvert

² 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 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, 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)	
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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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: 1-4 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	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	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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	70
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

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

Notes:				

² 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)

Torritodoco Bivision of Vvator Roboticos, Volo	on no (i mable i omi)	
Named Waterbody: UNT to Hyde Creek	Date/Ti	me: 9/21/22
Assessors/Affiliation: Benjamin Burdette and Jake Irvin	Project	ID :
Site Name/Description: S010	SR Ripl	ey 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 :	E Antecedent Precipita	ation Tool
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 S	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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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 Dete	rmination = STREAM	
Secondary Indicator Score (i	f applicable) = _{21.00}	
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	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	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	21.00	
	ditions, Watercourse ondary Indicator Sco	

Notes:				

² 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 (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: 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 :	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 Obser	aved.

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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 watershed	✓	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 = 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	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
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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	19.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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: S012	SR Ripley II
Site Location: Forested area near road	·
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	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
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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	V	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	1 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

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

N	otes	:

11.Grade controls: culvert

² 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: 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 Table 1.			
Precipitation this Season vs. Normal: Source of recent & seasonal precip. data: elevated USACE Antecedent Precipitation T			
Watershed Size: 29,327.89	County: Lauderda	le	
Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded Source: USDA Web Soil Surve			
Surrounding Land Use : Forested; Agricultural			
Degree of historical alteration to natural channel morphology & hydrolog Severe	y (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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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: 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	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 = 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	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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 :			

² 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)

Territesace Division of Water Resources, Vers	non 1.5 (i mable i onn)
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 & 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	✓	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
Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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 Hydrolo	gic Determination = STREAM	
Secondary Indicat	Score (if applicable) = _{22.50}	
Justification / Note	<u> </u>	
Bank height: 1-4 ft		
Bank width: 2-4 ft		
Substrate: silt/mud		
S14		

A. Geomorphology (Subtotal = 11.50	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	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]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
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	7 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = $\underline{22.50}$
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :			

² 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, W	ersion 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 : source of recent & seasonal precip. data : elevated US	ACE Antecedent Precipitation Tool			
Watershed Size: 29,327.89	County: Lauderdale			
Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally floode	d Source: USDA Web Soil Survey			
Surrounding Land Use : Forested; Agricultural				
Degree of historical alteration to natural channel morphology & hvdrology (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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	V	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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		
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	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	0.5
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 = 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	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 19.0	0
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Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes:

11.Grade controls: culvert
24.Amphibians: frogs

² 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: 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 : 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, 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	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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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 = STREAN	1	
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. 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	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	23.50	
	ditions, Watercourse ondary Indicator Sco	

Notes:				

² 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	ffsite	
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 USA0	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	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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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	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	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	23.00	
	ditions, Watercourse ondary Indicator Sco	

Notes:				

² 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: S018		SR Ripley II
Site Location: Starts at WWC54 end; Borders property line quickly	runs off-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 : Forested		
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
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 precipitation / groundwater conditions		WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	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	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	21.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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 Ta	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 : Adler silt loam, 0 to 2 percent slopes, occasionally flooded	Source: USDA We	b Soil Survey
Surrounding Land Use : Forested, Agricultural (cotton)		
Degree of historical alteration to natural channel morphology & hydrolog Absent	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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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	
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	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
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
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	= 1.5	0

C. Biology (Subtotal = 6.00	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

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

Notes :			

² 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 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 : Morganfield silt loam, 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	7 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 = 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{12.00}{}$	
Under Normal Conditions, Watercourse is a Wet We Conveyance if Secondary Indicator Score < 19 point	

Notes :			

² 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: E003		SR Ripley II	
Site Location: Forested area near cotton field and site boundar	ry		
HUC (12 digit): Cane Creek Upper 080102080701	Latitude: See Ta	ıble 1.	
Previous Rainfall (7-days) : 0.03" Longitude		^{itude:} See Table 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 : Adler silt loam, 0 to 2 percent slopes, occasionally flooded Source: USDA W		eb Soil Survey	
Surrounding Land Use : Forested, Agricultural (cotton)			
Degree of historical alteration to natural channel morphology & hydr Absent	ology (select one & des	cribe fully in Notes) :	
Primary Field Indicators Ob	convod		

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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	V	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	
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	0
4. Sorting of soil textures or other substrate	0	1	2	3	70
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	
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	7 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 14.00
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :			

² 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)

Territesace Division of Water Resources, Vers	ion 1.5 (i illable i onni)	
Named Waterbody: N/A	Date/Time: 9/19/22	
Assessors/Affiliation: Benjamin Burdette & Jake Irvin	Project ID :	
Site Name/Description: E004	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"	ongitude: 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 & Memphis silt loam, 8 to 12	Source: USDA Web Soil Survey	
Surrounding Land Use : 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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 field into Stream 2	
BH: 0-1 ft	
BW: 1-5 ft	
WWC 4	

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] 1
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	
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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 13.50

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		

² 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: 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 : elevated USAG 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, 8 to 12 percent slopes, severely eroded, northern phase	Source: USDA Web Soil Survey	
Surrounding Land Use : Agricultural (cotton & 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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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] 1
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	
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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 13.50

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		

² 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	sion 1.5 (i mable i omi)
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 Table 1.
Previous Rainfall (7-days) : 0.03"	Longitude: See Table 1.
Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USA0	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 (cotton & 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	7 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	10.00	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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	e Form)	
Named Waterbody: N/A			te/Time: 9/19/22
Assessors/Affiliation: Benjamin Burdette & Jake Irvin		Pro	ject ID :
Site Name/Description: E007		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.			1.
Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC	CE Antece	dent Pred	pipitation Tool
Watershed Size: 29,327.89	County: Lau	ıderdale	
Soil Type(s) / Geology : Adler silt loam, 0 to 2 percent slopes, occasionally flooded Source: USDA Web Soil Survey			
Surrounding Land Use : Agricultural (cotton)			
Degree of historical alteration to natural channel morphology & hydrolog Absent	y (select one	& describe	fully in Notes):
Primary Field Indicators Obser	ved		
Primary Indicators		NO	YES

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 FACU species	✓	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 direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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	7 0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	14.50	
	ditions, Watercourse ondary Indicator Sco	

Notes:				

² 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	on 1.5 (i illable i omi)
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	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 : Agricultural (cotton)	
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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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	0
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	7 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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

Notes :			

² Focus is on the presence of aquatic or wetland plants.



WWC9

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)

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Named Waterbody: N/A	Date/Time: 9/20/22
Assessors/Affiliation: Benjamin 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 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; Loring silt loam, 2 to 5 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 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	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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) = _{18.50}
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

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. 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{18.50}{}$
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :			

² Focus is on the presence of aquatic or wetland plants.



Hydrologic Determination Field Data Sheet

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

Termessee Division of Water Resources, vers	sion 1.5 (Fillable 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 : elevated USAC	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	rved

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	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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	7 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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	

² Focus is on the presence of aquatic or wetland plants.



Hydrologic Determination Field D Tennessee Division of Water Resources, Vers		Form)		
Named Waterbody: N/A		Date	e/Time: 9/20/22	
Assessors/Affiliation: Benjamin Burdette & Jake Irvin	Proj	ect ID :		
Site Name/Description: E011	SRI	Ripley II		
Site Location: In cotton field				
HUC (12 digit): Cane Creek Upper 080102080701	ee Table 1			
Previous Rainfall (7-days) : 0.03"	e Table 1	-		
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USA	ent Preci	pitation Tool		
Watershed Size: 29,327.89 County: Laud				
Soil Type(s) / Geology: Loring silt loam, 8 to 12 percent slopes, severely eroded; Loring silt loam, 2 to 5 percent Source: USD			DA Web Soil Survey	
Surrounding Land Use : Agricultural (cotton)				
Degree of historical alteration to natural channel morphology & hydrolog Severe	gy (select one &	& describe f	ully 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 FACU species			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 direct response to rainfall			WWC	
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase			Stream	
6. Presence of fish (except Gambusia)		✓	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.

Stream

Stream

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.

7. Presence of naturally occurring ground water table connection

9. Evidence watercourse has been used as a supply of drinking water

8. Flowing water in channel and 7 days since last precip >0.1" in local watershed

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	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
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	7 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 = 6.00	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	18.00	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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 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; Adler silt loam, 0 to 2 percent slopes, occasionally flooded	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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	7 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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	

² 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: E013		SR Ripley II
Site Location: In 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 : 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, 12 to 20 percent slopes, severely eroded, northern phase; Adler silt loam, 0 to 2 percent slopes, occasionally flooded	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
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 precipitation / groundwater conditions		WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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	<u>-</u>
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	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 = 2.00	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	1
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	9.50
	litions, Watercourse is a Wet Weather andary Indicator Score < 19 points

Notes :			

² 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 : elevated USA	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
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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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	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
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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	15.50	
Under Normal Cond Conveyance if Seco	•	

Notes :			

² Focus is on the presence of aquatic or wetland plants.



Hydrologic Determination Field Data Sheet

Primary Indicators		NO	VES
Primary Field Indicators Obser	ved		
Degree of historical alteration to natural channel morpholoav & hvdrolog Slight	yy (select one 8	& describe f	fully in Notes) :
Surrounding Land Use : Agricultural (corn)	·	·	
Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase	A Web Sc	oil Survey	
Watershed Size: 29,327.89	County: Laud	lerdale	
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data : elevated USAC	CE Anteced	ent Preci	pitation Tool
Previous Rainfall (7-days) : 0.03" Longitude: See Ta			
HUC (12 digit): Cane Creek Upper 080102080701	Latitude: Se	ee Table 1	
Site Location: Corn field			
Site Name/Description: E015		SRI	Ripley II
Assessors/Affiliation: Benjamin Burdette & Jake Irvin		Proj	ect ID :
Named Waterbody: N/A	Date	e/Time: 9/20/22	
Tennessee Division of Water Resources, Vers	ion 1.5 (Fillable I	Form)	

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	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	11.50	
	ditions, Watercourse ondary Indicator Sco	

Notes:				

² 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: 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 : elevated USAG 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):

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	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	
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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 17.50
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :			

² 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: E017		SR Ripley II
Site Location: Cornfield near Stream 6		
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 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 (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
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 precipitation / groundwater conditions		WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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	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 = 2.00	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 ¹	3	2	1	0	1
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{8.50}{}$
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :				

² 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 : source of recent & seasonal precip. data : elevated US	ACE 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 & hydro Severe	logy (select one & describe fully in Notes):

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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹		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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 14	.00
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Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

11.Grade controls: culvert	

² 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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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		0

C. Biology (Subtotal = 6.00	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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

11.Grade controls: culvert	

² 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: 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	7 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{12.00}{}$	
Under Normal Conditions, Watercourse is a Wet We Conveyance if Secondary Indicator Score < 19 point	

Notes:				

² 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)

Torritogodo Biviolori di Vvator Nocodi codi, Vorc	non no (i mable i omi)
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 : elevated USAG Source of recent & seasonal precip. data :	CE 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 & 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	
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	7 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	10.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² Focus is on the presence of aquatic or wetland plants.



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		
<u> </u>				
Site Location: Cornfield	Latitude: Sad			
1100 (12 digit). Gaine Greek Opper 000 102000701				
Previous Rainfall (7-days): 0.03"	Longitude: See	Table 1.		
Precipitation this Season vs. Normal : elevated USA	CE Antecede	nt Precip	oitation Too	
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 Source: USDA Web Soil Survey			il Survey	
Surrounding Land Use : Agricultural (corn)	1		-	
Degree of historical alteration to natural channel morphology & hydrolog Absent	gy (select one &	describe fu	ully in Notes) :	
Primary Field Indicators Obse	ved			
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 F	•	✓	WWC	
3. Watercourse dry anytime during February through April 15th, under precipitation / groundwater conditions	normal N/A		WWC	
	ect response	✓	WWC	
 Daily flow and precipitation records showing feature only flows in director rainfall 			Stream	
• • • • • • • • • • • • • • • • • • • •	month	✓	C C	
to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2	month	✓	Stream	
to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase	month			
to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase 6. Presence of fish (except <i>Gambusia</i>)		<u> </u>	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) = 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	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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

Notes :			

² 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: 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 : 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, 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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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	7 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	11.50
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Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Ν	otes	:

11.Grade controls: culvert

² 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)

Torridosco Bivision of Water Researces, Vere	ion no (i mable i onn)	
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 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, 8 to 12 percent slopes, severely eroded, northern phase; Adler silt loam, 0 to 2 percent slopes, occasionally flooded	Source: USDA We	eb Soil Survey
Surrounding Land Use : Agricultural (corn)		
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
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 precipitation / groundwater conditions		WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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	7 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	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	11.00
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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: rip-rap	

² 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)

Torritodoco Britistori e Video i Robodicoco, Vero	1011 1.0 (1 mable 1 01111)	
Named Waterbody: N/A	Dat	te/Time: 9/21/22
Assessors/Affiliation: Benjamin Burdette & Jake Irvin	Pro	ject ID :
Site Name/Description: E025	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 : elevated USAC Source of recent & seasonal precip. data :	CE Antecedent Prec	ipitation 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 S	oil Survey
Surrounding Land Use : Agricultural (corn)		
Degree of historical alteration to natural channel morphology & hydrology 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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

Notes :			

² 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 Tab	ole 1.
Previous Rainfall (7-days) : 0.03"	Longitude: See Tab	le 1.
Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC	CE Antecedent Pr	recipitation Tool
Watershed Size: 29,327.89	County: Lauderdale	e
Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase	Source: USDA Web	o Soil Survey
Surrounding Land Use : Agricultural (corn)		
Degree of historical alteration to natural channel morphology & hydrolog Slight	y (select one & descr	ibe fully in Notes) :

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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	V	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	7 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	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	1.5
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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	11.50
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Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

N	otes	:

11.Grade controls: culvert		

² Focus is on the presence of aquatic or wetland plants.



Hydrologic Determination Field Data Sheet

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

Termessee Division of Water Resources, V	version 1.5 (Filiable Form)
Named Waterbody: N/A	Date/Time: 9/21/22
Assessors/Affiliation: Benjamin Burdette & Jake Irvin	Project ID :
Site Name/Description: E027	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 :	SACE 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)	
Degree of historical alteration to natural channel morphology & hydro Slight	ology (select one & describe fully in Notes) :
Primary Field Indicators Ob	served

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 FACU species	✓	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 direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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 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	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	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	12.00	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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: 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 : 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; 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 & 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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	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	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	18.00
	litions, Watercourse is a Wet Weather andary Indicator Score < 19 points

Notes :			

² 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 Recognose, Vere	on no (i mable i omi)	
Named Waterbody: N/A	Da	te/Time: 9/21/22
Assessors/Affiliation: Benjamin Burdette & Jake Irvin	Pro	oject ID :
Site Name/Description: E029	SR	R 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 : elevated USAC Source of recent & seasonal precip. data :	CE Antecedent Pred	cipitation Tool
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 S	Soil Survey
Surrounding Land Use : Agricultural; Forest		
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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	<u> </u>
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	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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

Notes:				

² 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 Tal	ble 1.
Previous Rainfall (7-days) : 0.03"	Longitude: See Tab	ole 1.
Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USAC	CE Antecedent P	recipitation Tool
Watershed Size: 29,327.89	County: Lauderdal	е
Soil Type(s) / Geology : Loring silt loam, 5 to 8 percent slopes, severely eroded	Source: USDA We	b Soil Survey
Surrounding Land Use : Agricultural; Forest		
Degree of historical alteration to natural channel morphology & hydrolog Severe	y (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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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 into S10	
Bank Height: 0-4 ft	
Bank width: 2-4 ft	
Heavily incised in woods	
WWC 30	

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	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	= 1.5	0

C. Biology (Subtotal = 4.00	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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)

Torribodos Bivision of Water Recognose, Vere	ion no (i mabio i omi)
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 : elevated USAC 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, 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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
econdary Indicator Score (if applicable) = _{15.00}
stification / Notes :
Ferraced 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

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	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 15.00	
Under Normal Conditions, Watercourse is a W Conveyance if Secondary Indicator Score < 19	

Notes:				

² 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 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); 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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: 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	
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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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

² 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)

Tollinosoo Biviolit of Water Resources, Vere	nen 1:e (i masie i enni)
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 Table 1.
Previous Rainfall (7-days) : 0.03"	Longitude: See Table 1.
Precipitation this Season vs. Normal : source of recent & seasonal precip. data : elevated USA0	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 : Agricultural (corn); 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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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	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	
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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

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

tes :
rge headcuts

² 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 of Vvator Nocodi coo, Vord	non no (i mabio i omi)
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 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, 20 to 40 percent slopes, northern phase	Source: USDA Web Soil Survey
Surrounding Land Use : Agricultural (corn); Forest; Easement	
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	✓	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	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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	
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	
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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	15.50	
Under Normal Cond Conveyance if Seco	•	

Notes :			

² 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: E035	SR Ripley II
Site Location: Cornfield; Forested area northeastern portion of Sit	e
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: 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	1
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	7 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	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.00	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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 Recognose, Vere	der 1.0 (1 mable 1 emil)	
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"	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, 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	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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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
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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	11.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² Focus is on the presence of aquatic or wetland plants.



Hydrologic Determination Field Data Sheet

Tenness	ee Division of Water Resources, Vers	ion 1.5 (Fillable Form)	
Named Waterbody: N/A			Date/Time: 9/21/22
Assessors/Affiliation: Benjamin Burd	Project ID :		
Site Name/Description: E037			SR Ripley II
Site Location: Roadside ditch			
HUC (12 digit): Cane Creek Upper 0	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 Ioam, 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 natur	al channel morphology & hydrolog evere	gy (select one & desc	cribe fully in Notes) :
Prim	ary Field Indicators Obser	ved	

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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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) = 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	7 0
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	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 ¹	3	2	1	0	1
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	7.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :			
-			

² 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)

Tollinosoo Biviolit of Water Resources, Volume	der 1.0 (i masie i errii)
Named Waterbody: N/A	Date/Time: 9/22/22
Assessors/Affiliation: Benjamin Burdette & Jake Irvin	Project ID :
Site Name/Description: E038	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	✓	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
Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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) = 9.00	
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	7 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	7 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	9.00	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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: E039		SR Ripley II
Site Location: Soybean field		
HUC (12 digit): Cane Creek Upper 080102080701	Latitude: See Tal	ble 1.
Previous Rainfall (7-days) : 0.03"	Longitude: See Tal	ole 1.
Precipitation this Season vs. Normal : elevated USAC Source of recent & seasonal precip. data :	CE Antecedent P	recipitation Tool
Watershed Size: 29,327.89	County: Lauderdal	е
Soil Type(s) / Geology: Memphis silt loam, 8 to 12 percent slopes, severely eroded, northern phase	Source: USDA We	b Soil Survey
Surrounding Land Use : Agricultural		
Degree of historical alteration to natural channel morphology & hydrolog Slight	gy (select one & desc	ribe fully in Notes) :

Primary Field Indicators Observed

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 FACU species	✓	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 direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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 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	70
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	7 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	7 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 10.00
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :			

² 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
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 precipitation / groundwater conditions		WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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	
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	7 0
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	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 = 2.00	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 14.00
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :			

² 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: E041		SR Ripley II
Site Location: Soybean field; Flows into W11; Connects to outfall	from W10	
HUC (12 digit): Cane Creek Upper 080102080701	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, 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	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 = 2.00	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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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

Notes :			

² Focus is on the presence of aquatic or wetland plants.



Hydrologic Determination Field Data Sheet

Tennessee Division	n of Water Resources, Vers	sion 1.5 (Fillable Form)	
Named Waterbody: N/A			Date/Time: 9/22/22
Assessors/Affiliation: Benjamin Burdette & Ja	Project ID :		
Site Name/Description: E042			SR Ripley II
Site Location: Soybean field			
HUC (12 digit): Cane Creek Upper 0801020	80701	Latitude: See Ta	able 1.
Previous Rainfall (7-days) : 0.03"		Longitude: See Ta	able 1.
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :	d USA	CE Antecedent I	Precipitation Tool
Watershed Size : 29,327.89		County: Lauderda	ıle
Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent sl	opes, severely eroded, northern phase	Source: USDA W	eb Soil Survey
Surrounding Land Use : Agricultural			
Degree of historical alteration to natural channel Slight	el morpholoav & hvdrolog	gy (select one & des	cribe fully in Notes) :
Primary Fie	ld 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 FACU species	✓	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 direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 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 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	10.00	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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)

Termosees Bivielen er Water Neesanses, Vere	ion no (i mable i omi)
Named Waterbody: N/A	Date/Time: 9/22/22
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 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; 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
Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	~	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	V	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 watershed	V	Stream
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 CONVEYANG	CE
Secondary Indicator Score (if applicable) = 14.50	
Justification / Notes :	
WWC 43	_
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. 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points = 1	4.50
	itions, Watercourse is a Wet Weather ndary Indicator Score < 19 points

Notes :				
-				
-				

² 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)

Torritodoco Bivision of Vvator Roboticos, Volo	ion no (i mable i onni)		
Named Waterbody: N/A		Date/Time: 9/22/22	
Assessors/Affiliation: Benjamin Burdette & Jake Irvin	Project ID :		
Site Name/Description: E044	•		
Site Location: On forest edge; flows off property			
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; 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
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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	V	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	17.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :				

² 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: E045		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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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 WE	EATHER 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ 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 :		
Notes: Large headcuts		

² 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 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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 CONVI	EYANCE
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	
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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	17.00	
	ditions, Watercourse ondary Indicator Sco	

Notes :	 		

² 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)

Terricosce Division of Water Resources, Vers	non 1.5 (i mable i omi)	
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):	
D	•	

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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	V	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 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) = 13.50				
Justification / Notes :				
WWC 47	_			
Bank Height: 1-4 ft				
Bank width: 2-4 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	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 ¹	3	2	1	0	1
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants. ² Focus is on the presence of aquatic or wetland plants.

Total Points = 13.50

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

Notes :			



Hydrologic Determination Field Data Sheet

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

Torritodoco Britistori e Video i Robodicoco, Vero	ion no (i mabio i onni)
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 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: Convent silt loam, occasionally flooded; 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	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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	7 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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	11.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	7 1
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	7 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	7 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	16.00	
Under Normal Cond Conveyance if Seco	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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)

Torritodoco Britistori e Video i Robodicoco, Vero	ion no (i mabio i omi)
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 : 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, 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 & hydrology 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	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	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	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 = 4.00	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.50	
	ditions, Watercourse ondary Indicator Sco	

Notes:				

² 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: 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 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: Adler silt loam, 0 to 2 percent slopes, occasionally flooded; Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase	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 Obser	ved	

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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	V	Stream
6. Presence of fish (except Gambusia)	✓	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 watershed	✓	Stream
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) = 10.50	
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	
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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	10.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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)

Territesace Division of Water Resources, Vers	ion 1.5 (i illabic i onni)
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 :	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 Obser	aved

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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	V	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	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	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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	17.50	
	ditions, Watercourse ondary Indicator Sco	

Notes :			

² 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 Code Division of Water Researces, Vere	non no (i mable i enin)	
Named Waterbody: N/A		Date/Time: 9/22/22
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 Ta	ble 1.
Previous Rainfall (7-days) : 0.03"	Longitude: See Tal	ble 1.
Precipitation this Season vs. Normal : elevated USAG Source of recent & seasonal precip. data :	CE Antecedent P	recipitation Tool
Watershed Size: 29,327.89	County: Lauderdal	е
Soil Type(s) / Geology: Memphis silt loam, 5 to 8 percent slopes, moderately eroded, northern phase	Source: USDA We	b 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
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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	V	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	7 0
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	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 = 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	17.50	
	ditions, Watercourse ondary Indicator Sco	

Notes:				

² 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: E054		SR Ripley II
Site Location: Starts in soybean; flows into woods off-site and cor	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
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 precipitation / groundwater conditions		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	V	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	
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	7 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 ¹	3	2	1	0	3
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	15.50	
Under Normal Cond Conveyance if Seco	,	

Notes:				

² 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)

Torritodoco Bivision of Vvator Roboticos, Volo	ion no (i mable i onni)	
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 : 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	✓	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
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	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 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 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	T WEATHER CONVEYANCE
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 ¹	3	2	1	0	2
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

Total Points =	12.50
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Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes:	
Notes: Headcut at property line	

² 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 Forr	n)	
Named Waterbody:UNT to Hyde Creek		Date	e/Time:11/1/23
Assessors/Affiliation: I. Maldonado, L. Thiem	,	ect ID :	
Site Name/Description: E056		Riple	ey II
Site Location: Ripley, TN			
HUC (12 digit):Upper Cane Creek 080102080701	25686		
Previous Rainfall (7-days) :1.91	Longitude: -89.5		
Precipitation this Season vs. Normal : IOW Source of recent & seasonal precip. data :	HS and USACE Antec		cipitation Tool
Watershed Size : 29327.89	County:Lauder	dale	
Soil Type(s) / Geology :Adler silt loam, 0 to 2 percent slopes, occasionally flooded	Source:USDA \	Nb Soi	l Survy
Surrounding Land Use : Agriculture			<u>-</u>
Degree of historical alteration to natural channel morphology & hydrolog Absent	gy (select one & de	escribe f	ully 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 F	ACU species	7	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 director rainfall	ect response	~	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase 	month	V	Stream
6. Presence of fish (except Gambusia)		~	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 v	vatershed	~	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 assessors may choose to score secondary indicators	rs as supporting	eviden	ce.
In the absence of a primary indicator, or other definitive evidence, cor on page 2 of this sheet, and provide score	•	ary indic	ator table
Guidance for the interpretation and scoring of both the primary & se TDEC-DWR Guidance For Making Hydrologic Determi			ided in
Overall Hydrologic Determination = WET WEATHER CON	NVEYANCE -		
Secondary Indicator Score (if applicable) = 13.00			
Secondary indicator Score (ii applicable) = 13.00			

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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	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 ¹	3	2	1	0	3	
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0	

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.00
	ditions, Watercourse is a Wet Weather ondary Indicator Score < 19 points

Notes :			

² 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	ey II
Site Location: Ripley, TN			
HUC (12 digit): Upper Cane Creek 080102080701	Latitude: 35.724	552	
Previous Rainfall (7-days) :1.91	Longitude: -89.525	5986	
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :	HS and USACE Antecede	ent Prec	ipitation Tool
Watershed Size : 29327.89	County:Lauderda	le	
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 & desc	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
4. Daily flow and precipitation records showing feature only flows in dire to rainfall	ct response		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2	nonth	7	Stream
aquatic phase			
6. Presence of fish (except <i>Gambusia</i>)			Stream
7. Presence of naturally occurring ground water table connection		4	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local w		<u></u>	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. condary indicators is	/idenc	e. 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

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	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 ¹	3	2	1	0	3	
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0	

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.00
	ditions, Watercourse is a Wet Weather ondary Indicator Score < 19 points

Notes :			

² 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		_	ect ID :
Site Name/Description: E058		Ripley II	
Site Location:Ripley, TN		ı	
HUC (12 digit):Upper Cane Creek 080102080701	Latitude: 35.724	643	
Previous Rainfall (7-days) :1.91	Longitude: -89.52	4977	
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :	HS and USACE Anteced		ipitation Tool
Watershed Size : 29327.89	County:Lauderda	ale	
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 & 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 direct response to rainfall			WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase 	month	V	Stream
6. Presence of fish (except <i>Gambusia</i>)			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	7	Stream
9. Evidence watercourse has been used as a supply of drinking water		<u>/</u>	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 entitle and are below.	vidend y indica s provi	e. ator table
Overall Hydrologic Determination = WET WEATHER CON	IVEYANCE		
Secondary Indicator Score (if applicable) = 13.00			
Justification / Notes :			

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	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 ¹	3	2	1	0	3	
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0	

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.00
	ditions, Watercourse is a Wet Weather ondary Indicator Score < 19 points

Notes :			

² 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 Fo	rm)	
Named Waterbody:UNT to Hyde Creek		Date	e/Time:11/1/23
Assessors/Affiliation: I. Maldonado, L. Thiem		Project ID :	
Site Name/Description: E059		Riple	ey II
Site Location:Ripley, TN		l .	
HUC (12 digit):Upper Cane Creek 080102080701	Latitude: 35.7	724761	
Previous Rainfall (7-days) :1.91	Longitude:_89.	523697	
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :	HS and USACE Ante	ecedent Pre	cipitation Tool
Watershed Size : 29327.89	County:Laude	rdale	
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	describe f	ully 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 F	ACU species	V	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	V	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 aquatic phase 	month	V	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	~	Stream
9. Evidence watercourse has been used as a supply of drinking water		<u> </u>	Stream
NOTE: If any Primary Indicators 1-9 = "Yes", then no further assessors may choose to score secondary indicato In the absence of a primary indicator, or other definitive evidence, cor 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 evideno dary indic ers is prov	cator table
TDEC-DWR Guidance For Making Hydrologic Determi	nations, Version	1.5	

Overall Hydrologic Determination = WET WEATHER CONVEYANCE

Secondary Indicator Score (if applicable) = 14.25

Justification / Notes :

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	No :	= 0	Yes	= 1.5	0

C. Biology (Subtotal = 6.00	Absent	Weak	Moderate	Strong		
20. Fibrous roots in channel bed ¹	3	2	1	0	3	
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0	

¹ Focus is on the presence of terrestrial plants.

Total Points = 14.25
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes :			

² 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: 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		
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :	HS and USACE Anteced		ipitation 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 Soil	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 Observ	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 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 dire to rainfall	ct response	v	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 r 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		<u> </u>	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		✓	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, come 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 Determination.	rs as supporting emplete the secondar below. condary indicators in the patients, Version 1.5	vidend y indica s provi	e. ator table
Overall Hydrologic Determination = WET WEATHER CON	IVEYANCE ▼		
Secondary Indicator Score (if applicable) = 13.00			
Justification / Notes :			

CN-1612 (Rev. 07/21) 1 of 2 RDA-2366

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	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 ¹	3	2	1	0	3	
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0	

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.00
	ditions, Watercourse is a Wet Weather ondary Indicator Score < 19 points

Notes :			

² 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	e/Time:11/1/23
Assessors/Affiliation: I. Maldonado, L. Thiem			ect ID :
Site Name/Description: E061		Ripley II	
Site Location:Ripley, TN			
HUC (12 digit):Upper Cane Creek 080102080701	Latitude: 35.730	0014	
Previous Rainfall (7-days) :1.91	Longitude: -89.52		
Precipitation this Season vs. Normal			
Source of recent & seasonal precip. data .	HS and USACE Anteced		ecipitation 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 So	il Survy
Surrounding Land Use : Agriculture			
Degree of historical alteration to natural channel morphology & hydrolog Absent	gy (select one & des	cribe	fully 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		<u> </u>	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 directions	ect response		14/14/0
to rainfall	_	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2	month [<u> </u>	Stream
aquatic phase 6. Presence of fish (except <i>Gambusia</i>)			Stream
7. Presence of naturally occurring ground water table connection		<u>ィ</u>	Stream
Flowing water in channel and 7 days since last precip >0.1" in local water table confidence.		<u> </u>	Stream
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, core on page 2 of this sheet, and provide score. Guidance for the interpretation and scoring of both the primary & secondary indicator.	mplete the secondar below.	viden y indici	cator 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

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	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 ¹	3	2	1	0	3	
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0	

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.00
	ditions, Watercourse is a Wet Weather ondary Indicator Score < 19 points

Notes :			

² 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: 11/1/2						
Assessors/Affiliation:I. Maldonado, L. Thiem		_	ect ID :			
Site Name/Description: E062		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			
2. Defined bed and bank absent, vegetation composed of upland and F		/	WWC			
3. Watercourse dry anytime during February through April 15th, under r precipitation / groundwater conditions	N/A		WWC			
4. Daily flow and precipitation records showing feature only flows in dire	ect response		WWC			
to rainfall		~	*****			
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	~	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, cor on page 2 of this sheet, and provide score	rs as supporting	evidend	ce.			
Guidance for the interpretation and scoring of both the primary & se TDEC-DWR Guidance For Making Hydrologic Determine			ided in			
Overall Hydrologic Determination = WET WEATHER CON Secondary Indicator Score (if applicable) = 13.00	NVEYANCE -					
Justification / Notes :						

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	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 ¹	3	2	1	0	3	
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0	

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.00
	ditions, Watercourse is a Wet Weather ondary Indicator Score < 19 points

Notes :			

² 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:11/1/2						
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	Latitude: 35.73	0700				
	Longitude: -89.52					
Previous Rainfall (7-days):1.91	20191144089.52	23808				
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :	HS and USACE Antece	edent Pre	cipitation Tool			
Watershed Size : 29327.89	County:Laudero	lale				
Soil Type(s) / Geology: Memphis silt loam, 12 to 20 percent slopes, severely eroded, northern phase	Source: USDA V	Vb Soi	I Survy			
Surrounding Land Use : Agriculture						
Degree of historical alteration to natural channel morphology & hydrolog Absent	y (select one & de	scribe f	ully 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 F		V	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						
to rainfall	ct response	V	WWC			
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 i	month		04			
aquatic phase		V	Stream			
6. Presence of fish (except Gambusia)		V	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	atershed	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 is assessors may choose to score secondary indicator. In the absence of a primary indicator, or other definitive evidence, containing on page 2 of this sheet, and provide score	rs as supporting	eviden	ce.			
Guidance for the interpretation and scoring of both the primary & se TDEC-DWR Guidance For Making Hydrologic Determine			ided in			
Overall Hydrologic Determination = WET WEATHER CON	IVEYANCE -					
Secondary Indicator Score (if applicable) = 13.00		_				
Justification / Notes :						

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	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 ¹	3	2	1	0	3	
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0	

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.00
	ditions, Watercourse is a Wet Weather ondary Indicator Score < 19 points

Notes :			

² Focus is on the presence of aquatic or wetland plants.



Hydrologic Determination Field Data Sheet

Tennessee Division of Water Resources, Ver	sion 1.5 (Fillable F	orm)				
Named Waterbody: UNT to Hyde Creek		Da	ate/Time:11/1/23			
Assessors/Affiliation: I. Maldonado, L. Thiem		Project ID :				
Site Name/Description: E064		Rip	oley II			
Site Location: Ripley, TN						
HUC (12 digit): Upper Cane Creek 080102080701	Latitude: 35.	728626	 3			
Previous Rainfall (7-days) :1.91	Longitude:_89					
Precipitation this Season vs. Normal						
Source of recent & seasonal precip. data :	aHS and USACE Ant	lecedent P	recipitation I ool			
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	oil Survy			
Surrounding Land Use : Agriculture						
Degree of historical alteration to natural channel morphology & hydrolo Absent	gy (select one &	describe	fully in Notes):			
Primary Field Indicators Observed						
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 I	FACU species	V	WWC			
3. Watercourse dry anytime during February through April 15th, under	normal N/A		wwc			
precipitation / groundwater conditions						
4. Daily flow and precipitation records showing feature only flows in dir to rainfall	ect response	v	WWC			
5. Presence of multiple populations of obligate lotic organisms with ≥ 2	month		Stream			
aquatic phase		~				
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	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 indicate. In the absence of a primary indicator, or other definitive evidence, co on page 2 of this sheet, and provide score.	ors as supporting mplete the second	ng evide	nce.			
Guidance for the interpretation and scoring of both the primary & s **TDEC-DWR Guidance For Making Hydrologic Determ**	econdary indicat inations, Versior	n 1.5	ovided in			
Overall Hydrologic Determination = WET WEATHER CO	NVEYANCE -	7				

Secondary Indicator Score (if applicable) = 13.00

Justification / Notes:

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	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 ¹	3	2	1	0	3	
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0	

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.00
	ditions, Watercourse is a Wet Weather ondary Indicator Score < 19 points

Notes :			

² 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: E065		Riple	y II
Site Location: Ripley, TN			
HUC (12 digit): Upper Cane Creek 080102080701	Latitude: 35.727	039	
Previous Rainfall (7-days) :1.91	Longitude: -89.525	5992	
Precipitation this Season vs. Normal : Source of recent & seasonal precip. data :	HS and USACE Antecede	ent Prec	ipitation Tool
Watershed Size : 29327.89	County:Lauderda	le	
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 & desc	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
4. Daily flow and precipitation records showing feature only flows in dire to rainfall	ct response		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2	month	7	Stream
aquatic phase	L		
6. Presence of fish (except Gambusia)		4	Stream
7. Presence of naturally occurring ground water table connection		4	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local w	ratershed	<u> </u>	Stream
9. Evidence watercourse has been used as a supply of drinking water	<u> </u>	/	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, corn on page 2 of this sheet, and provide score. Guidance for the interpretation and scoring of both the primary & secondary indicator. TDEC-DWR Guidance For Making Hydrologic Determination.	rs as supporting examplete the secondary below. condary indicators is	/idenc	e. ator table
Overall Hydrologic Determination = WET WEATHER CON	IVEYANCE -		
Secondary Indicator Score (if applicable) = 13.00			
Justification / Notes :			

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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	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 ¹	3	2	1	0	3	
21. Rooted plants in the thalweg ¹	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 ²	0	0.5	1	1.5	0	

¹ Focus is on the presence of terrestrial plants.

Total Points =	13.00
	ditions, Watercourse is a Wet Weather ondary Indicator Score < 19 points

Notes :			
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² Focus is on the presence of aquatic or wetland plants.