

February 23, 2022

Mr. Lew Hoffman TDEC-Division of Water Resources Memphis Environmental Field Office 8383 Wolf Lake Drive Bartlett, TN 38133

Subject: SR Clarksville II

Hydrologic Determination Request Montgomery County, Tennessee

Mr. Hoffman:

A subsidiary of Silicon Ranch Corporation (SRC), SR Clarksville, LLC intends to develop a site within the city limits of Clarksville, Tennessee as a photovoltaic (PV) solar power generating facility. The SR Clarksville II site ("Project Site") includes approximately 140 acres bordered by I-24 to the west, Rossview Road to the north, and the Red River to the south, in Clarksville, Montgomery County, TN (Appendix A, Figures 1 and 2). On behalf of its subsidiary SR Clarksville, LLC, SRC has authorized HDR Engineering, Inc. (HDR) as its agent to submit the enclosed Hydrologic Determination (HD) request for written approval from the Tennessee Department of Environmental Conservation (TDEC) regarding the extent of Wet Weather Conveyance (WWC) features within the Project Site.

	Requestor/Applicant	Consultant/Requestor	Current Property Owners
Name	Emma Tillitski	Benjamin Burdette, WPIT, QHP	City of Clarksville
Affiliation	SR Bolivar, LLC	HDR	n/a
Mailing Address	222 2 nd Avenue South Suite 1900 Nashville, TN, 37201	440 S. Church Street Suite 1200 Charlotte, NC 28202	Clarksville, TN
Phone Number	615-577-4617	704-249-3619	931-648-6138
Parcel ID:	n/a	n/a	n/a

Project Location: City of Clarksville, TN

Basin: Red River (Hydrologic Unit Code [HUC] (051302060708)

Nearest City: Clarksville **County:** Montgomery County

Center Decimal Degree Coordinates of Project Area: 36.547306°, -87.237242°

USGS Quadrangle Name: Clarksville, TN (1957) (1":24,000'-scale)

Project Site Description

Prior to undertaking fieldwork, HDR scientists conducted a desktop review of the Project Site utilizing a number of resources including U.S. Geological Survey (USGS) topographic maps (Appendix A, Figure 2), aerial imagery (Appendix A, Figure 3), United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Soil Survey (Appendix A, Figure 4), the USGS National Hydrography Dataset (NHD), U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI), Federal Emergency Management Act (FEMA) floodplains (Appendix A, Figure 5), and 12-digit HUC watershed areas (Appendix A, Figure 6). All figures are attached in Appendix A.

According to the USDA NRCS Soil Survey of Montgomery County, TN, 10 different soil types were identified within the Project Site (Appendix A, Figure 4). There are no hydric soils present within the Project Site according to the NRCS National Hydric Soils List for Montgomery County (NRCS 2017).

Review of the USFWS NWI depicts one pond within the Project Site (Appendix A, Figure 5). Review of the USGS NHD depicts an unnamed tributary (UNT) that crosses the northwest corner of the Project Site and flows south where it flows into Red River west of the Project Site (Appendix A, Figure 5). According to FEMA floodplain data, approximately 87% of the Project Site is classified as FEMA Flood Zone X. Zone X is defined as a moderate- to low-risk area of minimal flood hazard due to areas being outside the special flood hazard area and higher than an elevation of the 0.2 percent annual chance flood. Approximately 13% of the Project Site is classified as FEMA Flood Zone AE, which is an area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year (Appendix A, Figure 5). The 1-percent annual chance flood is also referred to as the base flood or 100-year flood.

Based on aerial imagery and the field investigation, the Project Site consists of cultivated cropland with small areas of developed open space, forested and herbaceous wetlands, Red River and its associated tributaries, and mixed deciduous forest (see Appendix A, Figure 3). Dominant woody species consist of black walnut (*Juglans nigra*), southern red oak (*Quercus falcata*), red oak species (*Quercus sp.*), American sycamore (*Platanus occidentalis*), black gum (*Nyssa sylvatica*), shagbark hickory (*Carya ovata*), mockernut hickory (*Carya tomentosa*), eastern red cedar (*Juniperus virginiana*), sugar maple (*Acer saccharum*), common hackberry (*Celtis occidentalis*), and honey locust (*Gleditsia triacanthos*) in the canopy layer. The understory is composed primarily of black gum, black walnut, pawpaw (*Asimina triloba*), eastern red cedar, and Chinese privet (*Ligustrum sinense*). Common herbaceous and vine species include wingstem (*Verbesina altemifolia*), greenbriar (*Smilax rotundifolia*), poison ivy (*Toxicodendron radicans*), and a sedge species (*Carex sp.*).

Jurisdictional Delineation and Hydrological Determination

On November 2, 2021 HDR environmental scientists Lyranda Thiem, Tennessee Qualified Hydrologic Professional in Training (TN-QHP-IT), and Amanda Mills reviewed the Project Site for jurisdictional waters of the U.S. under Section 404 of the Clean Water Act. Jurisdictional waters of the U.S. were delineated according to the methodology and guidance described in the USACE 1987 Wetland Delineation Manual, USACE 2008 Rapanos Guidance, and the 2012 USACE Eastern Mountains and Piedmont Regional Supplement (Version 2.0). Streams were classified utilizing the methodology and guidance provided in the Regulatory Guidance Letter (RGL) 05-05 and the Tennessee Department of Environment and Conservation (TDEC) Division of Water Pollution Control Guidance for Making Hydrologic Determinations (Version 1.4) (TDEC 2011) for the identification and classifications of streams. Potential jurisdictional waters of the U.S. were flagged in the field and mapped using a Trimble® Geo7X GPS unit capable of submeter accuracy and post-processed utilizing Trimble® GPS Pathfinder Office software. Attached to this submittal are Preliminary Jurisdictional Determination Request forms (Appendix B), completed USACE Wetland Determination Data Forms, Hydrologic Determination Field Data Forms (Appendix C), as well as representative photographs of on-site waters (Appendix D).

Results

The results of the on-site field investigation conducted by HDR indicate that there are four (4) jurisdictional stream channels, six (6) jurisdictional wetland, and sixteen (16) non-jurisdictional WWCs located within the Project Site (Appendix A, Figure 7).

The on-site surface waters drain to Red River in the Red River watershed (HUC 051302060708). The on-site surface waters are classified for Domestic Water Supply, Industrial Water Supply, Fish and Aquatic Life, Recreation, Livestock Watering and Wildlife, Navigation, and Irrigation uses as designated by the TDEC Division of Water Resources Water Pollution Control.¹

Wetland Waters

There are six wetlands located within the Project Site, two forested wetlands and four emergent wetlands. On-site wetland waters total approximately 1.66 acres (Appendix A, Figure 7). A summary of on-site wetland waters are summarized in Table 1.

¹0400-40-04 20160301.pdf (tnsosfiles.com)

Table 1. Summary of on-site wetland waters within the Project Site

Feature Name	Coordinates (decimal degrees)	Type of Aquatic Resource	Cowardin Classification ¹	Estimated Amount of Aquatic Resource in Review Area (acres)
Wetland Waters				
Wetland 1	36.543018/ -87.232402	non section 10, non 404 - wetland	PEM	0.06
Wetland 2	36.542459/ -87.232402	non section 10 - wetland	PEM	0.02
Wetland 3	36.541966 / -87.235623	non section 10 - wetland	PEM	0.09
Wetland 4	36.542869 / -87.235246	non section 10 - wetland	PFO	0.81
Wetland 5	36.545315/ -87.236027	non section 10- wetland	PFO	0.12
Wetland 6	36.549137/ -87.239230	non section 10- wetland	PEM	0.51
	1.66 ac.			

¹ PEM = Palustrine emergent PFO = Palustrine forested

Jurisdictional Streams

There are four jurisdictional streams located within the Project Site totaling approximately 2,422 linear feet (0.05 acres) (Appendix A, Figure 7). A summary of on-site non-wetland waters are summarized in Table 2.

Table 1. Summary of on-site non-wetland waters in Project Site

Feature Name	Starting Coordinates (decimal degrees)	Ending Coordinates (decimal degrees)	Type of Aquatic Resource	Cowardin Classification ¹	Estimated Amount of Aquatic Resource in Review Area				
Non-Wetland Waters									
Stream 1 36.545752 / -87.232543 36.543796 / -87.233087 non section 10 - non-wetland R4SB5 Width: 4 feet Area: 0.01 acre									
Stream 2	36.542106 / -87.232589	36.541691/ -87.235882	non section 10 - non- wetland	R1SB5	Length: 1050 feet Width: 30 feet Area: 0.02 acre				
Stream 3	36.552273/ -87.244036	36.551228 / -87.244387	non section 10 - non- wetland	R5UB1	Length: 474 feet Width: 8 feet Area: 0.01 acre				
Stream 4	36.551399 / -87.244553	36.551132 / -87.244608	non section 10 - non- wetland	R4SB3	Length: 113 feet Width: 6 feet Area: < 0.01 acre				
	Total Non-Wetland Waters								

R4SB5 = Riverine, intermittent, mud streambed; R4SB3 = Riverine, intermittent, cobble, gravel streambed; R5UB1 = Riverine, unknown perennial, unconsolidated bottom; R1SB5= Mud, Unconsolidated Bottom, Tidal, Riverine

Wet Weather Conveyances (Non-Jurisdictional)

There are sixteen non-jurisdictional WWCs located within the Project Site totaling approximately 4,114 linear feet (0.094 acres) (Appendix A, Figure 7). A summary of on-site WWCs are summarized in Table 3.

Table 3. Summary of on-site Wet Weather Conveyances

Feature Name	Start Coordinates (decimal degrees)	End Coordinates (decimal degrees)	Estimated Amount of WWC in Review Area (If or ac.)
WWC1	36.545409/ -87.233668	36.544429/ -87.233351	Length: 349 Width: 2 Area: < 0.01
WWC2	36.542429/ -87.232644	36.542116/ -87.232668	Length: 125 Width: 3 Area: 0.002
WWC3	36.542077/ -87.235888	36.541998/ -87.236108	Length: 39 Width: 2 Area: 0.0009
WWC4	36.543233 / -87.236376	36.542939/ -87.236205	Length: 106 Width: 2 Area: 0.002
WWC5	36.543155/ -87.235864	36.542978/ -87.235815	Length: 83 Width: 2 Area: 0.002
WWC6	36.542919/ -87.235644	36.543233/ -87.235669	Length: 132 Width: 1 Area: 0.003
WWC7	36.546741/ -87.234205	36.546565/ -87.234595	Length: 167 Width: 3 Area: 0.004
WWC8	36.547368/ -87.234083	36.546428 / -87.234864	Length: 414 Width: 5 Area: 0.009
WWC9	36.546957 / -87.235913	36.546761/ -87.235815	Length: 100 Width: 5 Area: 0.002
WWC 10	36.547898/ -87.236254	36.546937/ -87.236035	Length: 423 Width: 8 Area: 0.001
WWC 11	36.548486/ -87.237669	36.547898/ -87.236254	Length: 513 Width: 4 Area: 0.012
WWC 12	35.260454/ -89.018287	35.260692/ -89.018228	Length: 596 Width: 8 Area: 0.014

Feature Name	Start Coordinates (decimal degrees)	End Coordinates (decimal degrees)	Estimated Amount of WWC in Review Area (If or ac.)
WWC 13	36.548995/ -87.242036	36.549465/ -87.243646	Length: 527 Width: 3 Area: 0.012
WWC 14	36.550034/ -87.241816	36.549348/ -87.242499	Length: 327 Width: 1 Area: 0.008
WWC 15	36.549955 / -87.243744	Length: 97 Width: 1 Area: 0.002	
WWC 16	36.552229/ -87.243500	36.552072/ -87.243890	Length: 116 Width: 10 Area: 0.003
	Length: 4,114 If Area: 0.094 ac		

On behalf of SRC, HDR is hereby requesting a HD verification for WWCs within the Project Site. Should you have any questions or require additional information following your review of the enclosed materials, please me at (615)-507-9167 or lyranda.thiem@hdrinc.com.

Sincerely, HDR Inc,

Lyranda Thiem- QHP-IT Environmental Scientist

Lyranda Thiem

Ben Burdette- QHP 1204-TN21 Environmental Scientist

Appendices: Appendix A: Figures

Figure 1. Project Location

Figure 2. USGS Topographic Quadrangles

Figure 3. Aerial Imagery

Figure 4. NRCS Soils Survey of Montgomery County, TN Figure 5. USGS NHD, USFWS NWI, and FEMA Floodplains

Figure 6. HUC 12 Watershed

Figure 7. Jurisdictional Delineation Map

Appendix B: Data Forms and Normal Weather Conditions

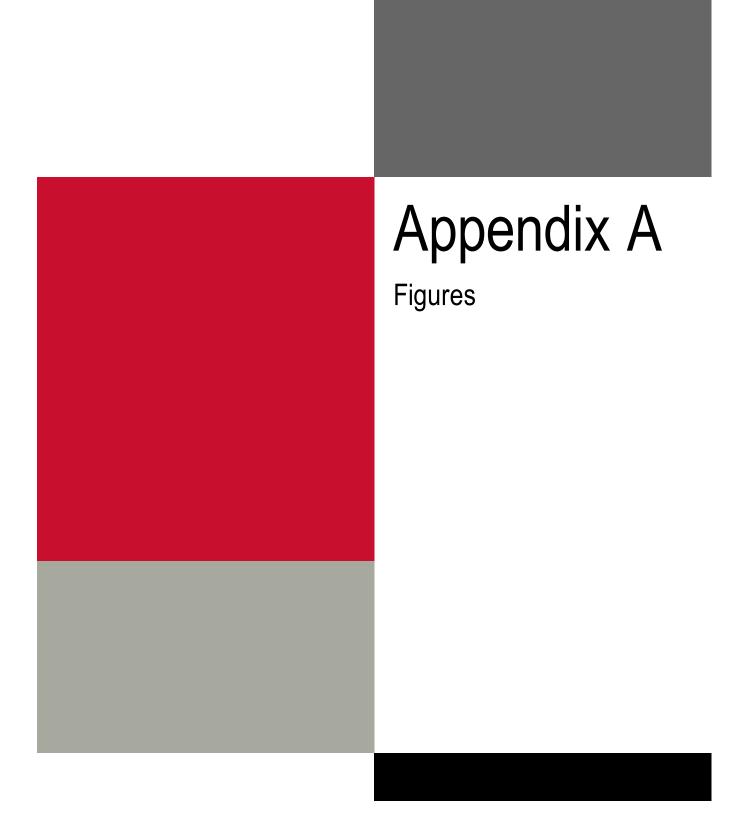
USACE Wetland Determination Data Forms Hydrologic Determination Data Sheets

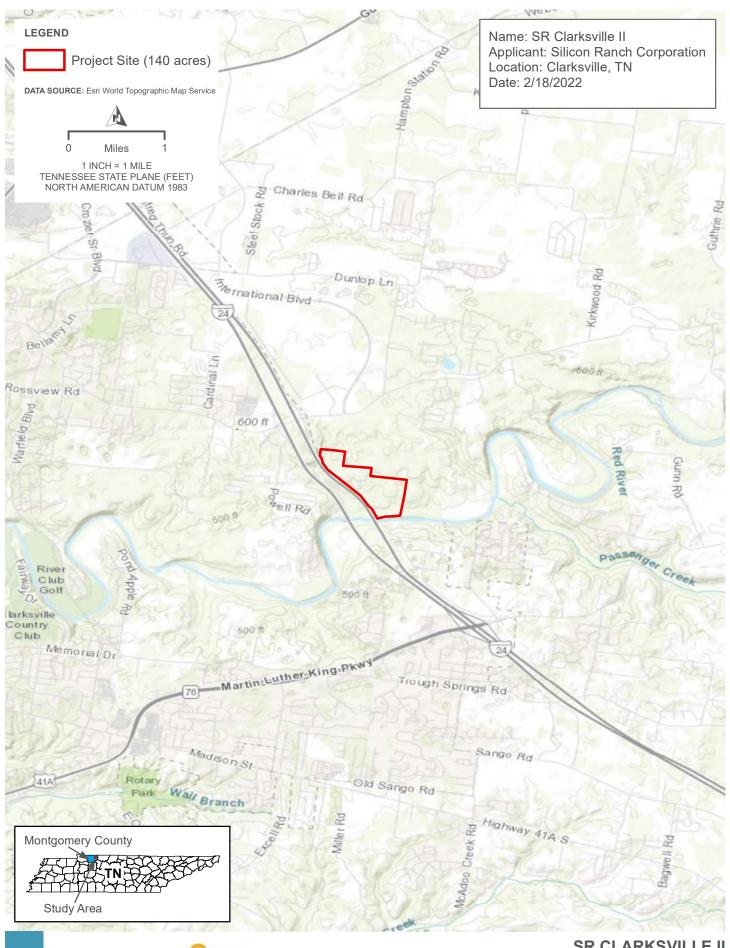
Normal Weather Conditions

Appendix C: Site Photographs

cc: Emma Tillitski, Silicon Ranch Corporation

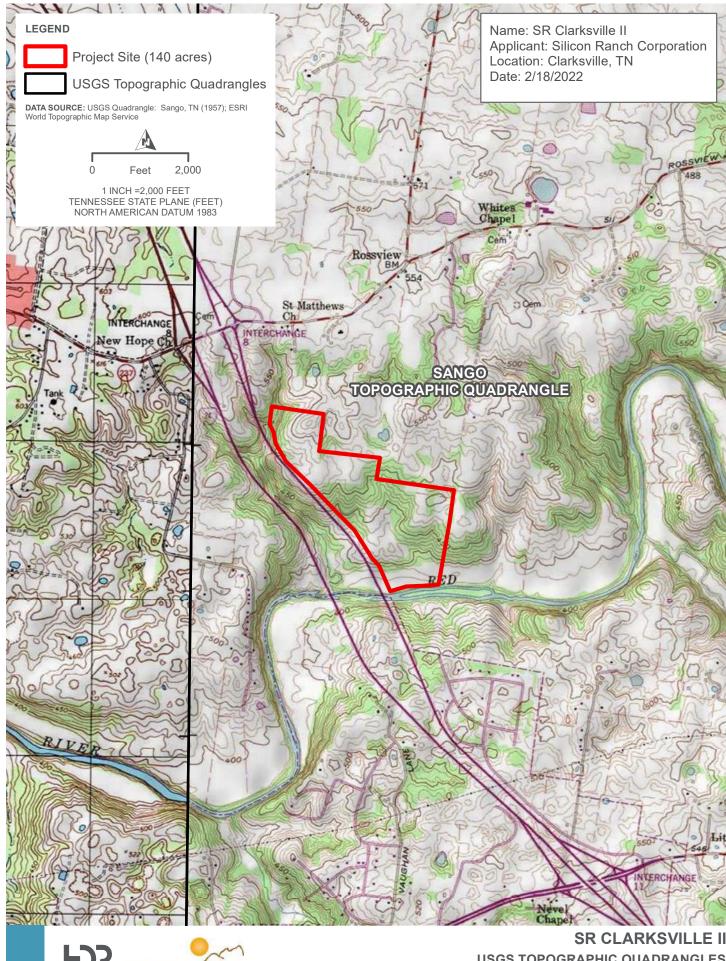








SR CLARKSVILLE II
VICINITY MAP



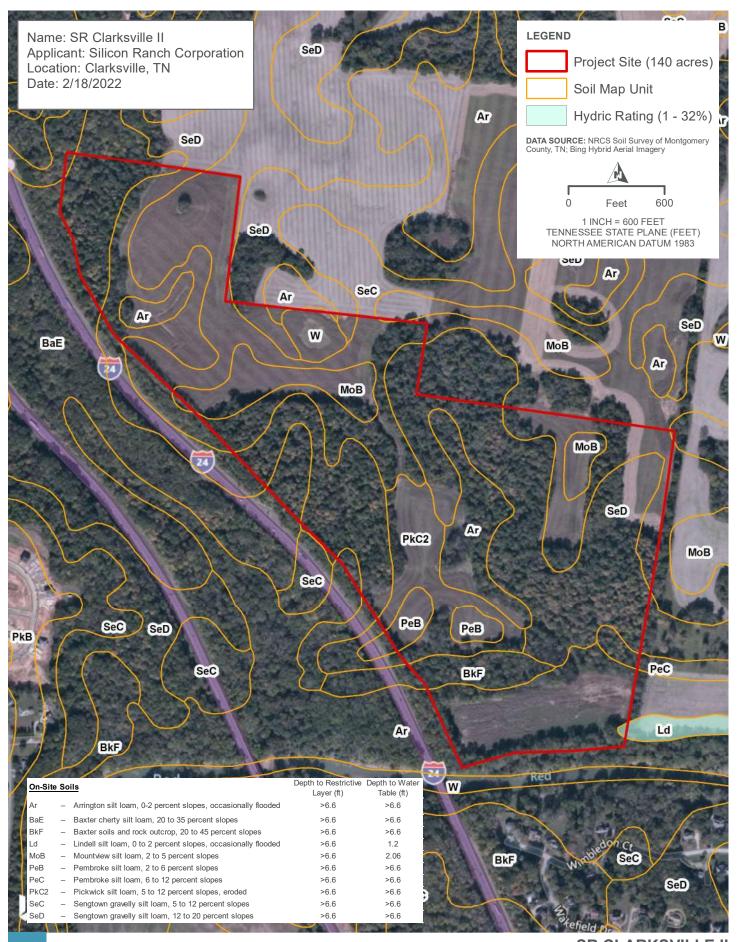
F) SILICON RANCH

USGS TOPOGRAPHIC QUADRANGLES



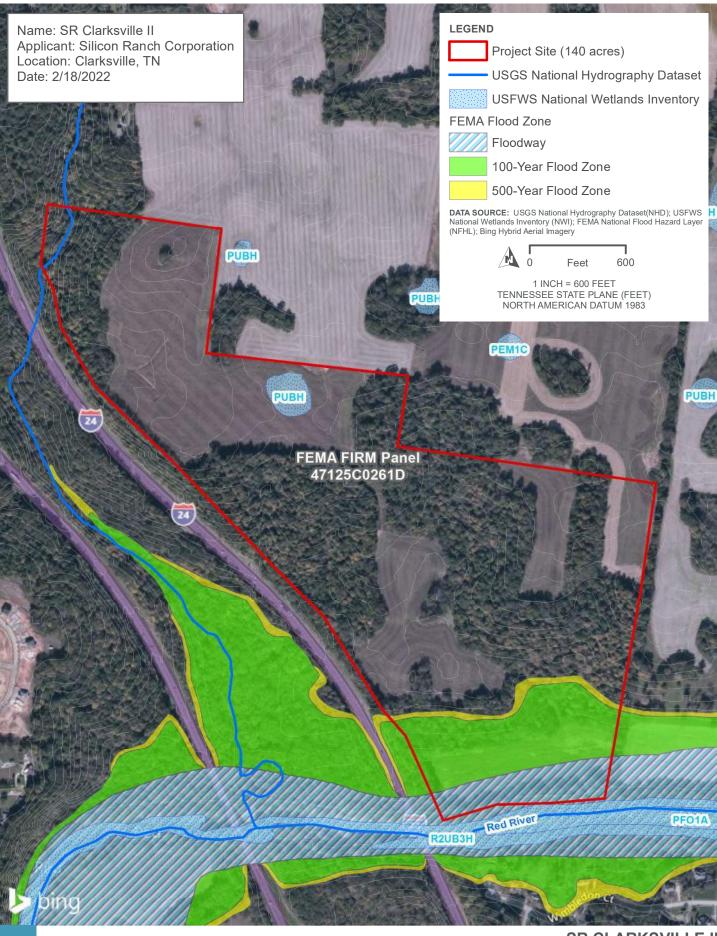


SR CLARKSVILLE II
AERIAL IMAGERY



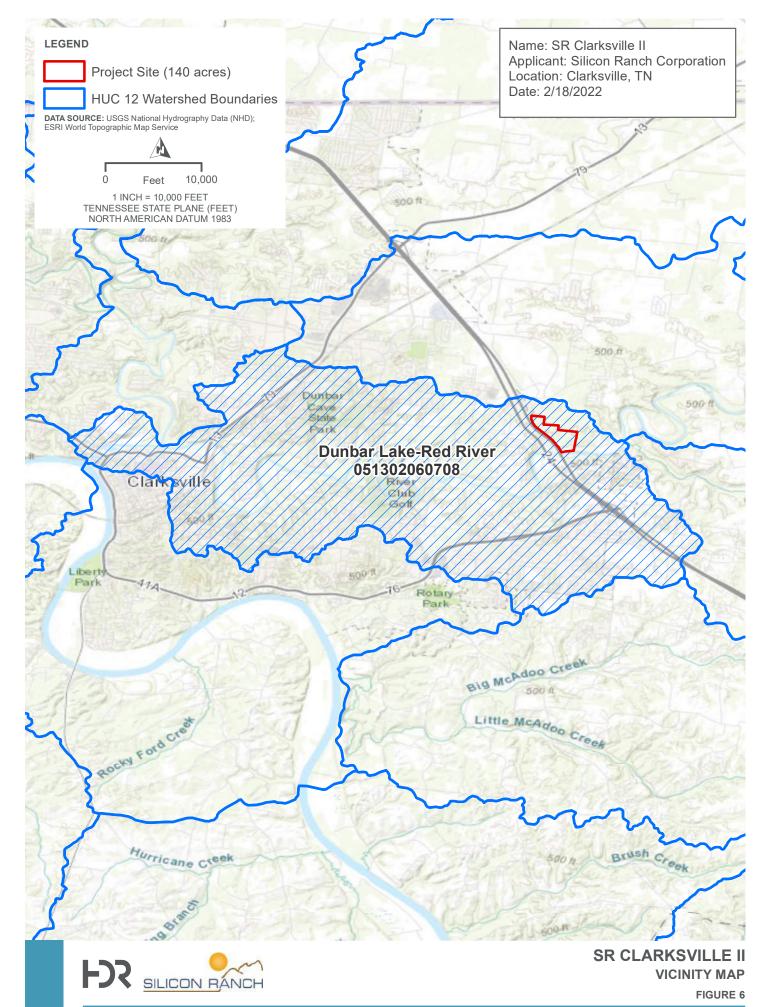


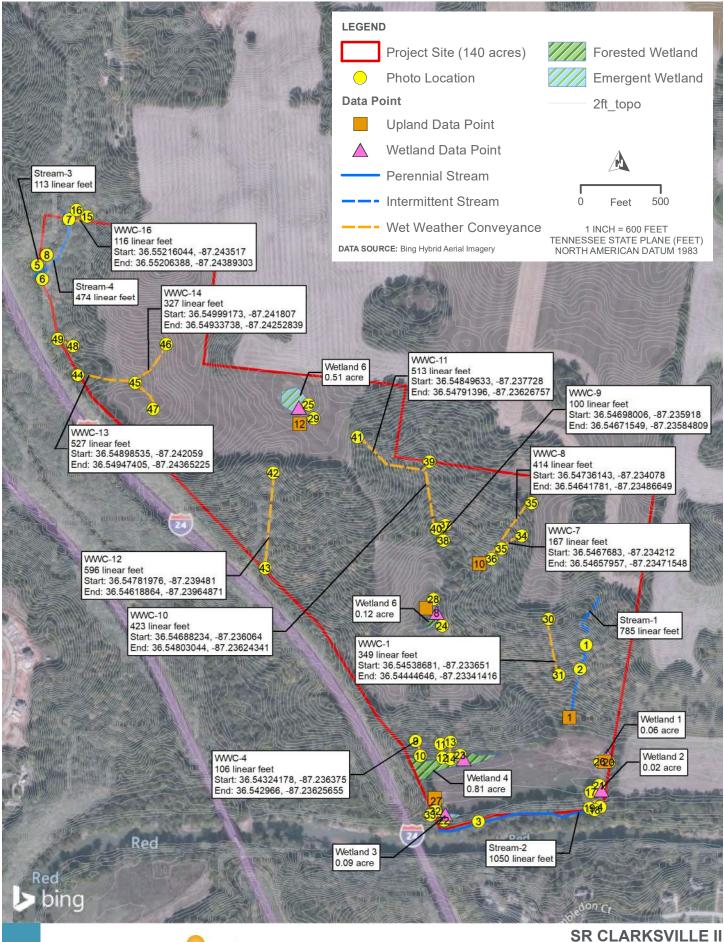
SR CLARKSVILLE II
NRCS SOIL SURVEY OF MONTGOMERY COUNTY, TN





SR CLARKSVILLE II
NHD, NWI AND FEMA FLOOD ZONES







SR CLARKSVILLE II
JURISDICTIONAL DELINEATION



Appendix B

Data Forms and Normal Weather Conditions

Project/Site: SR Clarksville	City/County: M	lontgomery	Sampling Date: 11/2/2021		
Applicant/Owner: SRC		State: TN	Sampling Point: DP1-UP1		
Investigator(s): Lyranda Thiem	Section, Township,	, Range:			
Landform (hillside, terrace, etc.): hillside	Local relief (concave,	convex, none): CONCAVE	Slope (%): 2-5		
Subregion (LRR or MLRA): LRR N, MLRA 1:		Long: -86.543505	Datum: WGS 1984		
Soil Map Unit Name: Arrington silt loam, 0 to	•	NWI classification			
Are climatic / hydrologic conditions on the site			explain in Remarks.)		
Are Vegetation No, Soil No, or Hydrol		Normal Circumstances" present?			
Are Vegetation No , Soil No , or Hydrol	ogy No naturally problematic? (If nee	eded, explain any answers in Re	marks.)		
SUMMARY OF FINDINGS – Attach	site map showing sampling point	locations, transects, im	portant features, etc.		
Hydrophytic Vegetation Present?	Yes No X Is the Sampled A	Area			
Hydric Soil Present?	Yes No X within a Wetland		No X		
Wetland Hydrology Present?	Yes No X				
Remarks: Upland point located right after a stream					
HYDROLOGY					
Wetland Hydrology Indicators:		Secondary Indicators	(minimum of two required)		
Primary Indicators (minimum of one is require	ed; check all that apply)	Surface Soil Crac	ks (B6)		
Surface Water (A1)	True Aquatic Plants (B14)		ed Concave Surface (B8)		
High Water Table (A2)	— Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living Roots		Drainage Patterns (B10)		
Saturation (A3)	· · · · · · · · · · · · · · · · · · ·	Moss Trim Lines (B16)			
Water Marks (B1)		Dry-Season Water Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6	· · · · · · · · · · · · · · · · · · ·			
Drift Deposits (B3) Algal Mat or Crust (B4)	Thin Muck Surface (C7) Other (Explain in Remarks)	Stunted or Stress	on Aerial Imagery (C9)		
Iron Deposits (B5)	Other (Explain in Nemarks)	Geomorphic Posit	, ,		
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard			
Water-Stained Leaves (B9)	,	Microtopographic			
Aquatic Fauna (B13)		FAC-Neutral Test	` '		
Field Observations:		<u></u>			
Surface Water Present? Yes	No X Depth (inches):				
Water Table Present? Yes	No X Depth (inches):				
Saturation Present? Yes		Vetland Hydrology Present?	Yes No X		
(includes capillary fringe)					
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous inspectio	ons), if available:			
Damada					
Remarks: Wetland hydrology is not present					
Wettand Hydrology is not present					

VEGETATION	(Four Strata)	 Use scientific names of plan 	ants.
------------	---------------	--	-------

Number of Dominance Test worksheet:	
2. Quercus rubra	
15	
4. Carya ovata	_(A)
Percent of Dominant Species That Are OBL, FACW, or FAC: 25.0%	
Final Are OBL., FACW, or FAC: 25.0%	_(B)
Total Cover	
Total % Cover of:	_(A/B)
Sapling/Shrub Stratum (Plot size: 15) 10 Yes FAC FAC FACU Species 15 x 2 = 30 FAC Species 15 x 2 = 30 FAC Species 15 x 2 = 30 FAC Species 15 x 3 = 45 FACU Species 15 x 4 = 460 UPL Species 15 x 4 = 460	
Sapling/Shrub Stratum (Plot size: 15)	
1. Asimina triloba 10 Yes FAC FAC FAC FAC FAC Species 15 x 3 = 45	
2. Symphoricarpos orbiculatus 20 Yes FACU FACU species 115	
UPL species 0	
Column Totals: 145 (A) 535	
Prevalence Index = B/A = 3.69 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation¹ (Expl 1 - Verbesina alternifolia	
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is \$3.0 \ 3 - Prevalence Index is \$3.0 \ 4 - Morphological Adaptations \(^1\) (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation \(^1\) (Explosional alternifolia 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is \$3.0 \(^1\) 4 - Morphological Adaptations \(^1\) (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation \(^1\) (Explosional alternifolia 2 - Persicaria virginiana	(B)
1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation¹ (Expl ¹Indicators of hydric soil and wetland hydrology present, unless disturbed or problematic. Persicaria virginiana 5 No FAC Persicaria virginiana 5 No FAC Persicaria virginiana 5 No FAC Definitions of Four Vegetation¹ (Expl ¹Indicators of hydric soil and wetland hydrology present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree − Woody plants, excluding vines, 3 in. (7.1 more in diameter at breast height (DBH), regarn height. Sapling/Shrub − Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. Herb − All herbaceous (non-woody) plants, reg of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 5) Lonicera japonica 5 Yes FACU	
30 =Total Cover 50% of total cover: 15 20% of total cover: 6 Herb Stratum (Plot size: 5) 1. Verbesina alternifolia 15 Yes FACU 2. Persicaria virginiana 5 No FAC 3. Poacea spp.** 2. 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation¹ (Expl 1 Indicators of hydric soil and wetland hydrology present, unless disturbed or problematic. 3. Poacea spp.** 2. 2 Yes FACU 4. Definitions of Four Vegetation Strata: Tree — Woody plants, excluding vines, 3 in. (7 in more in diameter at breast height (DBH), regard height. Sapling/Shrub — Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. 4. Sapling/Shrub — Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. 4. Herb — All herbaceous (non-woody) plants, reg of size, and woody plants less than 3.28 ft tall. Woody Vine — All woody vines greater than 3.2 height. Woody Vine — All woody vines greater than 3.2 height.	
3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation ¹ (Expl. 1	
30 = Total Cover 4 - Morphological Adaptations 1 (Provide su data in Remarks or on a separate sheet Problematic Hydrophytic Vegetation 1 (Expl 1)	
Solve of total cover: 15 20% of total cover: 6 data in Remarks or on a separate sheet	
Herb Stratum Problematic Hydrophytic Vegetation (Expl 1. Verbesina alternifolia 15	pporting
1. Verbesina alternifolia 2. Persicaria virginiana 3. Poacea spp.** 2. 20 Yes FACU 4. 5. 6. 7. 8. 9. 10. 10. 10. 11. 10. 10. 11. 10. 10. 11. 10. 10)
2. Persicaria virginiana 3. Poacea spp. ** 20 Yes FACU Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.4 more in diameter at breast height (DBH), regarn height. Sapling/Shrub – Woody plants, excluding vines height. Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. Herb – All herbaceous (non-woody) plants, reg of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 5) 1. Lonicera japonica 5 Yes FACU	ain)
2. Persicaria virginiana 5 No FAC 3. Poacea spp.** 20 Yes FACU 4. Definitions of Four Vegetation Strata: Tree — Woody plants, excluding vines, 3 in. (7.4 more in diameter at breast height (DBH), regark height. Sapling/Shrub — Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. Herb — All herbaceous (non-woody) plants, reg of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 5) Lonicera japonica 5 Yes FACU Definitions of Four Vegetation Strata: Tree — Woody plants, excluding vines than 3 in. (7.4 more in diameter at breast height (DBH), regark height. Sapling/Shrub — Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. Woody Vine — All woody vines greater than 3.2 height.	must be
Tree – Woody plants, excluding vines, 3 in. (7.0 more in diameter at breast height (DBH), regard height. Sapling/Shrub – Woody plants, excluding vines height. Sapling/Shrub – Woody plants, excluding vines than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. Herb – All herbaceous (non-woody) plants, reg of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 5) Lonicera japonica 5 Yes FACU	
5	
more in diameter at breast height (DBH), regard height. Sapling/Shrub – Woody plants, excluding vine than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. Herb – All herbaceous (non-woody) plants, reg of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 5) Lonicera japonica 5 Yes FACU	cm) or
7. Sapling/Shrub – Woody plants, excluding vine than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. 10. Herb – All herbaceous (non-woody) plants, reg of size, and woody plants less than 3.28 ft tall. 40 =Total Cover 50% of total cover: 20 20% of total cover: 8 Woody Vine Stratum (Plot size: 5) 1. Lonicera japonica 5 Yes FACU	
8	
than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. Herb – All herbaceous (non-woody) plants, reg of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 5) Lonicera japonica 5 Yes FACU than 3 in. DBH and greater than or equal to 3.2 (1 m) tall. Woody Vine – All herbaceous (non-woody) plants, reg of size, and woody plants less than 3.28 ft tall. Woody Vine – All woody vines greater than 3.2 height.	s less
9	
10. Herb – All herbaceous (non-woody) plants, reg of size, and woody plants less than 3.28 ft tall. 40	
11	ardless
40 =Total Cover 50% of total cover: 20 20% of total cover: 8 Woody Vine – All woody vines greater than 3.2 height.	
50% of total cover: 20 20% of total cover: 8 height. Woody Vine Stratum (Plot size: 5) 1. Lonicera japonica 5 Yes FACU	98 ft in
Woody Vine Stratum (Plot size: 5) 1. Lonicera japonica 5 Yes FACU	.0 11 111
1. Lonicera japonica 5 Yes FACU	
	
	
3	
4	
5 Hydrophytic	
5 =Total Cover Vegetation	
50% of total cover: 3 20% of total cover: 1 Present? Yes X No	

Remarks: (Include photo numbers here or on a separate sheet.)

Sampling Point: DP1-UP1

^{. **}Species indicator status range OBL-UPL. Assigned FACU status for wetland/upland determination.

SOIL Sampling Point: DP1-UP1

	ription: (Describe t	o the de				tor or co	onfirm the ab	sence of indi	cators.)	
Depth	Matrix	0/		k Featur		1 - 2	T 4		D	
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture		Ren	narks
0-3	10YR 4/3	100					Sandy			
3-20	10YR 4/4	100					Sandy			
¹ Type: C=Co	ncentration, D=Depl	etion. RM	=Reduced Matrix. N	 IS=Mas	ked Sand	Grains.	² L	 _ocation: PL=F	Pore Linina. N	M=Matrix.
Hydric Soil I			. rougest manny n			0.4				atic Hydric Soils ³ :
Histosol			Polyvalue Be	low Su	rface (S8)	(MLRA	147, 148)		uck (A10) (M	-
	ipedon (A2)		Thin Dark Su						Prairie Redox	
Black His			Loamy Muck	y Miner	al (F1) (M	LRA 136	5)	(MLR	A 147, 148)	
	n Sulfide (A4)		Loamy Gleye	ed Matri	x (F2)			Piedmo	nt Floodplair	n Soils (F19)
	Layers (A5)		Depleted Ma					•	A 136, 147)	
	ck (A10) (LRR N)		Redox Dark						rent Material	
	Below Dark Surface	(A11)	Depleted Da							27, 147, 148)
	rk Surface (A12)		Redox Depre) // DD \				Surface (F22)
	ucky Mineral (S1) eyed Matrix (S4)		Iron-Mangan MLRA 136		sses (F 12	(LKK N	Ι,	Other (i	Explain in Re	marks)
	edox (S5)		Umbric Surfa	•	3) (MLRA	122, 136	3)	³ Indicators of	of hydrophytic	c vegetation and
	Matrix (S6)		Piedmont Flo							-
Dark Sur			Red Parent I		-				disturbed or p	
Restrictive L	ayer (if observed):		<u> </u>							
Type:										
Depth (in	ches):						Hydric So	il Present?	Yes	No X
Remarks:										
Hydric Soils,	are not present.									

Project/Site: SR Clarksville	City/County: Montgomery	у	Sampling Date:	11/1/2021		
Applicant/Owner: SRC		State: TN	Sampling Point:	DP2-W1		
Investigator(s): Lyranda Thiem	Section, Township, Range:		_			
Landform (hillside, terrace, etc.): hillslope Lo	ocal relief (concave, convex, no	one): CONCAVE	Slope (%):	0-2		
Subregion (LRR or MLRA): LRR N, MLRA 122 Lat: 36.543018	Long: -87	·	• ' '	WGS 1984		
Soil Map Unit Name: Arrington silt loam, 0 to 2 percent slopes, occasi		NWI classifica				
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes X	No (If no, e	explain in Remark	s.)		
Are Vegetation No , Soil No , or Hydrology No significantly di	isturbed? Are "Normal Circ	cumstances" present		•		
Are Vegetation No , Soil No , or Hydrology No naturally problem		ain any answers in Re	-			
SUMMARY OF FINDINGS – Attach site map showing		ns, transects, im	portant featu	res, etc.		
Hydrophytic Vegetation Present? Yes X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No	Is the Sampled Area within a Wetland?	Yes X	No			
Remarks: PEM Wetland located within an agricultural field.						
HYDROLOGY						
Wetland Hydrology Indicators:	<u> </u>	Secondary Indicators	•	required)		
Primary Indicators (minimum of one is required; check all that apply)		Surface Soil Crac		(5.0)		
X Surface Water (A1) True Aquatic Plants X High Water Table (A2) Hydrogen Sulfide Oc	· · · · · · · · · · · · · · · · · · ·	X Sparsely Vegetated Concave Surface (B8)				
	eres on Living Roots (C3)	Drainage Patterns (B10)				
Water Marks (B1) Water Marks (B1) Presence of Reduce		Moss Trim Lines (B16) Dry-Season Water Table (C2)				
l 	ion in Tilled Soils (C6)	Crayfish Burrows (C8)				
Drift Deposits (B3) Thin Muck Surface (· · · · · · -	Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4) Other (Explain in Re		Stunted or Stressed Plants (D1)				
Iron Deposits (B5)	· -	X Geomorphic Position (D2)				
Inundation Visible on Aerial Imagery (B7)	-	Shallow Aquitard				
X Water-Stained Leaves (B9)	_	Microtopographic				
Aquatic Fauna (B13)		FAC-Neutral Test	(D5)			
Field Observations:						
Surface Water Present? Yes X No Depth (inch	nes):1					
Water Table Present? Yes X No Depth (inch	nes): 0					
Saturation Present? Yes X No Depth (inch	nes): 0 Wetland Hy	ydrology Present?	Yes X	No		
(includes capillary fringe)						
Describe Recorded Data (stream gauge, monitoring well, aerial photos	s, previous inspections), if ava	ilable:				
Remarks:						
Wetland hydrology is present.						
,						

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP2-W1 Absolute Dominant Indicator 30 ___) % Cover Species? Status **Dominance Test worksheet:** Tree Stratum (Plot size: 1. **Number of Dominant Species** 2. That Are OBL, FACW, or FAC: (A) 3. **Total Number of Dominant** 4. Species Across All Strata: (B) 5. Percent of Dominant Species 6. That Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet: =Total Cover Total % Cover of: 50% of total cover: _____ 20% of total cover: ___ **OBL** species 0 x 1 = Sapling/Shrub Stratum (Plot size: 15 **FACW** species x2 =5 x 3 = 1. FAC species FACU species 0 2. x 4 = 3. UPL species 0 x 5 = 0 25 (A) 4. Column Totals: 55 (B) 5. Prevalence Index = B/A = 2 20 6. **Hydrophytic Vegetation Indicators:** 7. 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% 8. X 3 - Prevalence Index is ≤3.0¹ 9. 4 - Morphological Adaptations¹ (Provide supporting =Total Cover data in Remarks or on a separate sheet) 50% of total cover: ___ 20% of total cover: Herb Stratum (Plot size: 5__) Problematic Hydrophytic Vegetation¹ (Explain) 1. Polygonum sp. **FACW** ¹Indicators of hydric soil and wetland hydrology must be 5 Yes 2. Elymus virginicus FAC present, unless disturbed or problematic. 10 Yes 3. Ranunculus sp. **FACW Definitions of Four Vegetation Strata:** 4. Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or 5. more in diameter at breast height (DBH), regardless of height. 6. 7. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft 8. (1 m) tall. 9. 10. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 25 =Total Cover Woody Vine - All woody vines greater than 3.28 ft in 50% of total cover: 13 20% of total cover: Woody Vine Stratum (Plot size:) 1. 2. 3. 4. Hydrophytic =Total Cover Vegetation 50% of total cover: 20% of total cover: Present? Yes X No Remarks: (Include photo numbers here or on a separate sheet.) **Species indicator status range OBL-UPL. Assigned FACW status for wetland/upland determination.

SOIL Sampling Point: DP2-W1

	ription: (Describe to	o the de				ator or c	onfirm the absence	e of indicators.)
Depth (inches)	Matrix Color (moist)	%	Redo: Color (moist)	x Featur %	res Type ¹	Loc ²	Texture	Remarks
(inches) 0-4	10YR 4/2	95	7.5YR 3/4	 5	С	M	Loamy/Clayey	Remarks
4-18	10YR 4/3	90	7.5YR 3/4	10	<u>C</u>	<u>M</u>	Loamy/Clayey	
								<u></u> -
¹Type: C=Co	ncentration, D=Deple		-Reduced Matrix N	 M-Nae	ked Sand		² l ocatio	on: PL=Pore Lining, M=Matrix.
Hydric Soil II		Suon, Kivi	-Neduced Matrix, N	IO-IVIAS	Keu San	d Grains.		licators for Problematic Hydric Soils ³ :
Histosol (Polyvalue Be	elow Sui	rface (S8) (MLRA		2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Thin Dark Su					Coast Prairie Redox (A16)
Black His			Loamy Muck	-				(MLRA 147, 148)
X Hydroger	n Sulfide (A4)		Loamy Gleye	ed Matri	x (F2)			Piedmont Floodplain Soils (F19)
Stratified	Layers (A5)		X Depleted Ma	trix (F3))			(MLRA 136, 147)
2 cm Mud	ck (A10) (LRR N)		Redox Dark	Surface	(F6)			Red Parent Material (F21)
Depleted	Below Dark Surface	(A11)	Depleted Da	rk Surfa	ice (F7)			(outside MLRA 127, 147, 148)
	rk Surface (A12)		X Redox Depre		-			Very Shallow Dark Surface (F22)
	ucky Mineral (S1)		Iron-Mangan		sses (F12	2) (LRR I	N,	Other (Explain in Remarks)
	eyed Matrix (S4)		MLRA 136	•			3.	
	edox (S5)		Umbric Surfa		-			dicators of hydrophytic vegetation and
	Matrix (S6)		Piedmont Flo		-			wetland hydrology must be present,
Dark Surf	. ,		Red Parent I	viateriai	(FZ1) (IVI	LRA 127	, 147, 148) I	unless disturbed or problematic.
	ayer (if observed):							
Type: Depth (in	ches).						Hydric Soil Pres	sent? Yes X No
Remarks:							1 Tryano Con i Tes	165 <u>X</u> 166
Hydric Soils	are present							
, riyano cono	aro procent.							

Project/Site: SR Clarksville	City/Cou	nty: Montgomery	Sampling Date: 11/2/2021			
Applicant/Owner: SRC		State: TN	Sampling Point: DP3-UP2			
Investigator(s): Lyranda Thiem	Section, Tow	nship, Range:				
Landform (hillside, terrace, etc.): hillslope	Local relief (con-	cave, convex, none): CONCAVE	Slope (%):0-2			
Subregion (LRR or MLRA): LRR N, MLRA 1.	22 Lat: 36.542900	Long: -87.232379	Datum: WGS 1984			
Soil Map Unit Name: Arrington silt loam, 0 to	<u></u>	NWI classific	eation: Upland			
Are climatic / hydrologic conditions on the site			, explain in Remarks.)			
Are Vegetation No , Soil No , or Hydrol		Are "Normal Circumstances" presen				
Are Vegetation No, Soil No, or Hydro		(If needed, explain any answers in F				
SUMMARY OF FINDINGS – Attach	site map showing sampling p	oint locations, transects, ir	mportant features, etc.			
Hydrophytic Vegetation Present?	Yes No X Is the Sam	pled Area				
Hydric Soil Present?	Yes No X within a W		No X			
Wetland Hydrology Present?	Yes No X		<u> </u>			
Remarks:	<u> </u>					
Upland datapoint upslope of wetland wetland	d 1 located within a corn field.					
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indicators	s (minimum of two required)			
Primary Indicators (minimum of one is require		Surface Soil Cra	, ,			
Surface Water (A1)	True Aquatic Plants (B14)		ated Concave Surface (B8)			
——High Water Table (A2)	Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)			
Saturation (A3)	Oxidized Rhizospheres on Living F	Roots (C3) Moss Trim Lines Dry-Season Wa	Moss Trim Lines (B16)			
I	Water Marks (B1) Presence of Reduced Iron (C4)					
Sediment Deposits (B2)	Recent Iron Reduction in Tilled So					
Drift Deposits (B3)	Thin Muck Surface (C7)		le on Aerial Imagery (C9)			
Algal Mat or Crust (B4) Iron Deposits (B5)	Other (Explain in Remarks)	Stunted or Stres Geomorphic Pos				
Inundation Visible on Aerial Imagery (B7	^	Shallow Aquitare	` '			
Water-Stained Leaves (B9)	,	Microtopographi				
Aquatic Fauna (B13)		FAC-Neutral Tes	` ,			
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):	Wetland Hydrology Present?	Yes No X			
(includes capillary fringe)						
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, previous ins	pections), if available:				
Remarks:						
Wetland hydrology is not present						

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP3-UP2 Absolute Dominant Indicator 30 ___) % Cover Species? Status **Dominance Test worksheet:** Tree Stratum (Plot size: 1. **Number of Dominant Species** 2. That Are OBL, FACW, or FAC: (A) 3. **Total Number of Dominant** 4. Species Across All Strata: (B) 5. Percent of Dominant Species 6. That Are OBL, FACW, or FAC: 50.0% (A/B) Prevalence Index worksheet: =Total Cover Total % Cover of: 50% of total cover: _____ 20% of total cover: ___ **OBL** species 0 x 1 = Sapling/Shrub Stratum (Plot size: 15 **FACW** species x2 =x 3 = 1. FAC species 20 FACU species 5 2. x 4 = 3. UPL species 40 x 5 = 65 (A) 4. Column Totals: 280 (B) 5. Prevalence Index = B/A = 6. **Hydrophytic Vegetation Indicators:** 7. 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 8. 3 - Prevalence Index is ≤3.01 9. 4 - Morphological Adaptations¹ (Provide supporting =Total Cover data in Remarks or on a separate sheet) 50% of total cover: 20% of total cover: Herb Stratum (Plot size: 5) Problematic Hydrophytic Vegetation¹ (Explain) UPL 1. Zea mays ¹Indicators of hydric soil and wetland hydrology must be 20 Yes 2. Ranunculus arvensis FAC present, unless disturbed or problematic. 5 3. **Lactuca sp. No **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 height. 6. 7. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft 8. (1 m) tall. 9. 10. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 65 =Total Cover Woody Vine - All woody vines greater than 3.28 ft in 50% of total cover: 33 20% of total cover: Woody Vine Stratum (Plot size: 5) 1. 2. 3. 4. Hydrophytic =Total Cover Vegetation 50% of total cover: 20% of total cover: Present? Yes X No Remarks: (Include photo numbers here or on a separate sheet.) **Species indicator status range OBL-UPL. Assigned FACU status for wetland/upland determination.

SOIL Sampling Point: DP3-UP2

	ription: (Describe t	to the de				tor or co	onfirm the abs	ence of indi	cators.)	
Depth	Matrix	0/		x Featur		1 2	Tasatuma		D	
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture		Ren	narks
0-18	10YR 4/4	100					Loamy/Clay	rey		
	-									
¹ Type: C=Co	ncentration, D=Depl	etion, RM	I=Reduced Matrix, N	 IS=Mas	ked Sand	Grains.	2Lc	cation: PL=F	Pore Lining, N	M=Matrix.
Hydric Soil I		•								atic Hydric Soils ³ :
Histosol (Polyvalue Be	elow Su	rface (S8)	(MLRA	147, 148)		uck (A10) (M	•
	ipedon (A2)		Thin Dark Su						rairie Redox	
Black His	stic (A3)		Loamy Muck						A 147, 148)	. ,
Hydroger	Sulfide (A4)		Loamy Gleye	ed Matri	x (F2)			Piedmo	nt Floodplair	Soils (F19)
Stratified	Layers (A5)		Depleted Ma	trix (F3))			(MLR	A 136, 147)	
2 cm Mud	ck (A10) (LRR N)		Redox Dark	Surface	(F6)			Red Pa	rent Material	(F21)
Depleted	Below Dark Surface	e (A11)	Depleted Da	rk Surfa	ice (F7)			(outs	ide MLRA 12	27, 147, 148)
	rk Surface (A12)		Redox Depre							Surface (F22)
	ucky Mineral (S1)		Iron-Mangan		sses (F12	2) (LRR N	١,	Other (E	Explain in Re	marks)
	eyed Matrix (S4)		MLRA 136	•				2		
	edox (S5)		Umbric Surfa							c vegetation and
	Matrix (S6)		Piedmont Flo		-					nust be present,
Dark Sur			Red Parent I	viateriai	(F21) (M	LRA 127	, 14 <i>1</i> , 148)	unless	disturbed or p	oroblematic.
	ayer (if observed):									
Type:	ah a a \.						Undain Cail	D=====40	Vaa	Na V
Depth (in	cnes):						Hydric Soil	Present?	Yes	No X
Remarks:	ara not procent									
, Hyuric Solls	are not present.									

Project/Site: SR Clarksville	City/County: Montgomery Sampling Date: 11/2/2021
Applicant/Owner: SRC	State: TN Sampling Point: DP4-W2
Investigator(s): Lyranda Thiem	Section, Township, Range:
Landform (hillside, terrace, etc.): hillslope	Local relief (concave, convex, none): CONCAVE Slope (%): 0-2
Subregion (LRR or MLRA): LRR N, MLRA 122	Lat: 36.542419 Long: -87.232445 Datum: WGS 1984
Soil Map Unit Name: Arrington silt loam, 0 to 2 per	
Are climatic / hydrologic conditions on the site typica	
Are Vegetation No , Soil No , or Hydrology _	
Are Vegetation No , Soil No , or Hydrology	No naturally problematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site	map showing sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Yes Yes	X No Is the Sampled Area X No within a Wetland? Yes X No
Remarks: PEM Wetland located within an agricultural field ar	d unslone from the Red River
·	
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; ch	<u> </u>
	rue Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8)
	lydrogen Sulfide Odor (C1)
	Oxidized Rhizospheres on Living Roots (C3) Moss Trim Lines (B16) Processor Meter Table (C3)
l 	Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Recent Iron Reduction in Tilled Soils (C6) Crayfish Burrows (C8)
	hin Muck Surface (C7) Saturation Visible on Aerial Imagery (C9)
	Other (Explain in Remarks) Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
X Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No _	X Depth (inches):
Water Table Present? Yes X No	Depth (inches): 10
Saturation Present? Yes X No	Depth (inches): 0 Wetland Hydrology Present? Yes X No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitorin	g well, aerial photos, previous inspections), if available:
Remarks:	
Wetland hydrology is present.	
,	

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP4-W2 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: (A) 3. **Total Number of Dominant** 4. Species Across All Strata: (B) 5. Percent of Dominant Species 6. That Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet: =Total Cover Total % Cover of: 50% of total cover: _____ 20% of total cover: ___ **OBL** species 0 x 1 = Sapling/Shrub Stratum (Plot size: 15 **FACW** species x2 =5 x 3 = 1. FAC species **FACU** species 10 2. x 4 = 3. UPL species 0 x 5 = 0 65 (A) 4. Column Totals: 155 (B) 5. Prevalence Index = B/A = 6. **Hydrophytic Vegetation Indicators:** 7. 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% 8. X 3 - Prevalence Index is ≤3.0¹ 9. 4 - Morphological Adaptations¹ (Provide supporting =Total Cover data in Remarks or on a separate sheet) 50% of total cover: 20% of total cover: Herb Stratum (Plot size: 5) Problematic Hydrophytic Vegetation¹ (Explain) Arctium minus **FACU** 1. ¹Indicators of hydric soil and wetland hydrology must be 5 2. Elymus virginicus FAC present, unless disturbed or problematic. 50 3. Ranunculus sp. Yes **FACW 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 than 3 in. DBH and greater than or equal to 3.28 ft 8. (1 m) tall. 9. 10. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. =Total Cover Woody Vine - All woody vines greater than 3.28 ft in 50% of total cover: 33 20% of total cover: Woody Vine Stratum (Plot size: 5) 1. 2. 3. Hydrophytic =Total Cover Vegetation 50% of total cover: 20% of total cover: Present? Yes X No Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: DP4-W2

	ription: (Describe to	o the de				ator or c	onfirm the absence	e of indicators.)
Depth (inches)	Matrix Color (moist)	%	Redo: Color (moist)	x Featur %	res Type ¹	Loc ²	Texture	Remarks
(inches) 0-4	10YR 4/2	95	7.5YR 3/4	 5	С	M	Loamy/Clayey	Remarks
4-18	10YR 4/3	90	7.5YR 3/4	10	С	<u>M</u>	Loamy/Clayey	
								<u> </u>
1 _{Typo: C=Co}	ncentration, D=Deple		=Poducod Matrix N		kod San		² l ocatio	on: PL=Pore Lining, M=Matrix.
Hydric Soil II		SUOTI, IXIVI	-Neduced Matrix, N	IO-IVIAS	skeu Sand	d Grains.		licators for Problematic Hydric Soils ³ :
Histosol (Polyvalue Be	elow Sui	rface (S8) (MLRA		2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Thin Dark Su					Coast Prairie Redox (A16)
Black His			Loamy Muck	-				(MLRA 147, 148)
X Hydroger	n Sulfide (A4)		Loamy Gleye	ed Matri	x (F2)			Piedmont Floodplain Soils (F19)
Stratified	Layers (A5)		X Depleted Ma	trix (F3))			(MLRA 136, 147)
2 cm Mud	ck (A10) (LRR N)		Redox Dark	Surface	(F6)			Red Parent Material (F21)
Depleted	Below Dark Surface	(A11)	Depleted Da	rk Surfa	ce (F7)			(outside MLRA 127, 147, 148)
	rk Surface (A12)		X Redox Depre					Very Shallow Dark Surface (F22)
	ucky Mineral (S1)		Iron-Mangan		sses (F12	2) (LRR I	N,	Other (Explain in Remarks)
	eyed Matrix (S4)		MLRA 136	•			3.	
	edox (S5)		Umbric Surfa		-			dicators of hydrophytic vegetation and
	Matrix (S6)		Piedmont Flo		-			wetland hydrology must be present,
Dark Surf	. ,		Red Parent I	viateriai	(FZ1) (IVI	LRA 127	, 147, 148) I	unless disturbed or problematic.
	ayer (if observed):							
Type: Depth (in	ches):						Hydric Soil Pres	sent? Yes X No
Remarks:							1 Tryano con i re-	165 <u>X</u> 165
Hydric Soils	are present							
,i iyano cono (aro procent.							

Project/Site: SR Clarksville		City/County: Montgom	ery	Sampling Date: 11/2/2021
Applicant/Owner: SRC		_	State: TN	Sampling Point: DP5-W3
Investigator(s): Lyranda Thiem		Section, Township, Range		<u> </u>
Landform (hillside, terrace, etc.): hillslope		al relief (concave, convex,	•	Slope (%): 0-2
Subregion (LRR or MLRA): LRR N, MLRA 1			-87.235739 M3	Datum: WGS 1984
				
Soil Map Unit Name: Arrington silt loam, 0 to		-	NWI classifica	
Are climatic / hydrologic conditions on the site	•			explain in Remarks.)
Are Vegetation No, Soil No, or Hydro	logy No significantly dist	turbed? Are "Normal C	Circumstances" present	? Yes X No
Are Vegetation No, Soil No, or Hydro	logy No naturally proble	matic? (If needed, ex	plain any answers in Re	emarks.)
SUMMARY OF FINDINGS – Attach	site map showing sa	ampling point locati	ons, transects, im	portant features, etc.
Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area		
Hydric Soil Present?	Yes X No	within a Wetland?	Yes X	No
Wetland Hydrology Present?	Yes X No	William a Wollana	<u> </u>	<u> </u>
Remarks:				
PEM Wetland located within an agricultural f	field and upslope from the F	Red River		
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators	(minimum of two required)
Primary Indicators (minimum of one is required)	red; check all that apply)		Surface Soil Crac	
X Surface Water (A1)	True Aquatic Plants (E	-		ed Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odd		X Drainage Patterns	
Saturation (A3)		es on Living Roots (C3)	Moss Trim Lines	
Water Marks (B1)	Presence of Reduced	` '	Dry-Season Wate	
Sediment Deposits (B2)	Recent Iron Reduction		Crayfish Burrows	
Drift Deposits (B3)	X Thin Muck Surface (C			on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Rem	narks)	Stunted or Stress	
Iron Deposits (B5)			X Geomorphic Posi	
Inundation Visible on Aerial Imagery (B7	<u>'</u>)		Shallow Aquitard	
Water-Stained Leaves (B9)			Microtopographic	, ,
Aquatic Fauna (B13)			FAC-Neutral Test	(D5)
Field Observations:				
Surface Water Present? Yes X	No Depth (inches			
Water Table Present? Yes	No X Depth (inches			
Saturation Present? Yes	No X Depth (inches	s): Wetland	Hydrology Present?	Yes <u>X</u> No
(includes capillary fringe) Describe Recorded Data (stream gauge, mo	unitoring well perial photos	previous inspections) if a	vailable:	
Beschibe Recorded Bata (stream gauge, me	Thiomig well, actial priotos,	previous inspections), if a	valiable.	
Remarks:				
Wetland hydrology is present.				

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP5-W3 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: (A) 3. **Total Number of Dominant** 4. Species Across All Strata: (B) 5. Percent of Dominant Species 6. That Are OBL, FACW, or FAC: 66.7% (A/B) Prevalence Index worksheet: =Total Cover Total % Cover of: 50% of total cover: _____ 20% of total cover: ____ **OBL** species 0 x 1 = Sapling/Shrub Stratum (Plot size: 15 **FACW** species x2 =25 x 3 = 1. FAC species 75 **FACU** species 25 2. x 4 = 3. UPL species 0 x 5 = 0 75 (A) 4. Column Totals: 225 (B) 5. Prevalence Index = B/A = 6. **Hydrophytic Vegetation Indicators:** 7. 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% 8. X 3 - Prevalence Index is ≤3.0¹ 9. 4 - Morphological Adaptations¹ (Provide supporting =Total Cover data in Remarks or on a separate sheet) 50% of total cover: 20% of total cover: Herb Stratum (Plot size: 5__) Problematic Hydrophytic Vegetation¹ (Explain) Arctium minus **FACU** 1. Yes ¹Indicators of hydric soil and wetland hydrology must be 20 2. Elymus virginicus Yes FAC present, unless disturbed or problematic. Ranunculus sp. 20 Yes 3. **FACW Definitions of Four Vegetation Strata:** 5 4 Sorghum halepense No **FACU** Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or 5 more in diameter at breast height (DBH), regardless of 5. Ambrosia trifida No FAC height. 6. 5 **FACW** Ranunculus abortivus No 7. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft 8. (1 m) tall. 9. 10. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. 75 =Total Cover Woody Vine - All woody vines greater than 3.28 ft in 50% of total cover: 38 20% of total cover: Woody Vine Stratum (Plot size: 5) 1. 2. 3. 4. Hydrophytic =Total Cover Vegetation 50% of total cover: ___ 20% of total cover: Present? Yes X No Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: DP5-W3

	ription: (Describe to	o the de				ator or c	onfirm the absence	e of indicators.)
Depth (inches)	Matrix Color (moist)	%	Redo: Color (moist)	x Featur %	res Type ¹	Loc ²	Texture	Remarks
(inches) 0-4	10YR 4/2	95	7.5YR 3/4	 5	С	M	Loamy/Clayey	Remarks
4-18	10YR 4/3	90	7.5YR 3/4	10	С	<u>M</u>	Loamy/Clayey	
								<u> </u>
1 _{Typo: C=Co}	ncentration, D=Deple		=Poducod Matrix N		kod San		² l ocatio	on: PL=Pore Lining, M=Matrix.
Hydric Soil II		SUOTI, IXIVI	-Neduced Matrix, N	IO-IVIAS	skeu Sand	d Grains.		licators for Problematic Hydric Soils ³ :
Histosol (Polyvalue Be	elow Sui	rface (S8) (MLRA		2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Thin Dark Su					Coast Prairie Redox (A16)
Black His			Loamy Muck	-				(MLRA 147, 148)
X Hydroger	n Sulfide (A4)		Loamy Gleye	ed Matri	x (F2)			Piedmont Floodplain Soils (F19)
Stratified	Layers (A5)		X Depleted Ma	trix (F3))			(MLRA 136, 147)
2 cm Mud	ck (A10) (LRR N)		Redox Dark	Surface	(F6)			Red Parent Material (F21)
Depleted	Below Dark Surface	(A11)	Depleted Da	rk Surfa	ce (F7)			(outside MLRA 127, 147, 148)
	rk Surface (A12)		X Redox Depre					Very Shallow Dark Surface (F22)
	ucky Mineral (S1)		Iron-Mangan		sses (F12	2) (LRR I	N,	Other (Explain in Remarks)
	eyed Matrix (S4)		MLRA 136	•			3.	
	edox (S5)		Umbric Surfa		-			dicators of hydrophytic vegetation and
	Matrix (S6)		Piedmont Flo		-			wetland hydrology must be present,
Dark Surf	. ,		Red Parent I	viateriai	(FZ1) (IVI	LRA 127	, 147, 148) I	unless disturbed or problematic.
	ayer (if observed):							
Type: Depth (in	ches):						Hydric Soil Pres	sent? Yes X No
Remarks:							1 Tryano con i re-	165 <u>X</u> 165
Hydric Soils	are present							
,i iyano cono (aro procent.							

Project/Site: SR Clarksville		City/County: Montgome	ery	Sampling Date: 11	/2/2021
Applicant/Owner: SRC			State: TN	Sampling Point: DI	P6-UP3
Investigator(s): Lyranda Thiem	Se	ection, Township, Range:			
Landform (hillside, terrace, etc.): hillslope		relief (concave, convex,		Slope (%):	0-2
Subregion (LRR or MLRA): LRR N, MLRA 1	-	•	87.236005		GS 1984
		· ·			33 1904
Soil Map Unit Name: Arrington silt loam, 0 to			NWI classifica	•	
Are climatic / hydrologic conditions on the site	•		No (If no, e	explain in Remarks.)	
Are Vegetation No, Soil No, or Hydro	logy <u>No</u> significantly distu	rbed? Are "Normal C	Circumstances" present?	Yes X No	
Are Vegetation No , Soil No , or Hydro	logy <u>No</u> naturally problem	atic? (If needed, ex	plain any answers in Re	marks.)	
SUMMARY OF FINDINGS – Attach	site map showing sai	mpling point locati	ons, transects, im	portant features	s, etc.
Hydrophytic Vegetation Present?	Yes No X I	s the Sampled Area			
Hydric Soil Present?		within a Wetland?	Yes	No X	
Wetland Hydrology Present?	Yes No X				
Remarks:					
Upland datapoint upslope of wetland wetland	13 and 4 located within a cor	n neid.			
HYDROLOGY					
Wetland Hydrology Indicators:			Secondary Indicators	(minimum of two requ	uired)
Primary Indicators (minimum of one is require	red; check all that apply)		Surface Soil Crac	ks (B6)	
Surface Water (A1)	True Aquatic Plants (B1	14)	Sparsely Vegetate	ed Concave Surface ((B8)
High Water Table (A2)	Hydrogen Sulfide Odor	(C1)	Drainage Patterns	s (B10)	
Saturation (A3)	Oxidized Rhizospheres	on Living Roots (C3)	Moss Trim Lines ((B16)	
Water Marks (B1)	Presence of Reduced II	on (C4)	Dry-Season Wate	r Table (C2)	
Sediment Deposits (B2)	Recent Iron Reduction	n Tilled Soils (C6)	Crayfish Burrows	(C8)	
Drift Deposits (B3)	Thin Muck Surface (C7)			on Aerial Imagery (C	9)
Algal Mat or Crust (B4)	Other (Explain in Rema	rks)	Stunted or Stress		
Iron Deposits (B5)			Geomorphic Posit		
Inundation Visible on Aerial Imagery (B7	')		Shallow Aquitard		
Water-Stained Leaves (B9)			Microtopographic		
Aquatic Fauna (B13)			FAC-Neutral Test	(D5)	
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)	: Wetland	Hydrology Present?	Yes No	<u> </u>
(includes capillary fringe) Describe Recorded Data (stream gauge, mo	nitoring well porial photos in	rovious inspections) if a	vailable:		
Describe Recorded Data (stream gauge, mo	initoring well, aerial priotos, p	revious irispections), ii a	valiable.		
Remarks:					
Wetland hydrology is not present					

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP6-UP3 Absolute Dominant Indicator 30 ___) % Cover Species? Status **Dominance Test worksheet:** Tree Stratum (Plot size: 1. **Number of Dominant Species** 2. That Are OBL, FACW, or FAC: (A) 3. **Total Number of Dominant** 4. Species Across All Strata: (B) 5. Percent of Dominant Species 6. That Are OBL, FACW, or FAC: 50.0% (A/B) Prevalence Index worksheet: =Total Cover Total % Cover of: 50% of total cover: _____ 20% of total cover: ___ **OBL** species 0 x 1 = Sapling/Shrub Stratum (Plot size: 15 **FACW** species x2 =1. FAC species x 3 = 120 FACU species 10 2. x 4 = 3. UPL species 40 x 5 = 90 (A) 4. Column Totals: 360 (B) 5. Prevalence Index = B/A = 6. **Hydrophytic Vegetation Indicators:** 7. 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 8. 3 - Prevalence Index is ≤3.01 9. 4 - Morphological Adaptations¹ (Provide supporting =Total Cover data in Remarks or on a separate sheet) 50% of total cover: ___ 20% of total cover: 5__) Herb Stratum (Plot size: Problematic Hydrophytic Vegetation¹ (Explain) UPL 1. Zea mays Yes ¹Indicators of hydric soil and wetland hydrology must be 30 2. Ranunculus arvensis Yes FAC present, unless disturbed or problematic. 10 3. Sorghum halepense No **FACU Definitions of Four Vegetation Strata:** 4 Polygonum sp. ** 10 FAC Nο 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 than 3 in. DBH and greater than or equal to 3.28 ft 8. (1 m) tall. 9. 10. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. =Total Cover Woody Vine - All woody vines greater than 3.28 ft in 50% of total cover: 45 20% of total cover: Woody Vine Stratum (Plot size: 5) 1. 2. 3. 4. Hydrophytic =Total Cover Vegetation 50% of total cover: 20% of total cover: Present? No X Remarks: (Include photo numbers here or on a separate sheet.) **Species indicator status range OBL-UPL. Assigned FAC status for wetland/upland determination.

SOIL Sampling Point: DP6-UP3

	ription: (Describe t	to the de				tor or co	onfirm the abs	ence of indi	cators.)	
Depth	Matrix	0/		x Featur		1 2	Tasatuma		D.,,	
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture		Ren	narks
0-18	10YR 4/4	100					Loamy/Clay	rey		
	-									
¹ Type: C=Co	ncentration, D=Depl	etion, RM	I=Reduced Matrix, N	 IS=Mas	ked Sand	Grains.	2Lc	cation: PL=F	Pore Lining, N	M=Matrix.
Hydric Soil I		•								atic Hydric Soils ³ :
Histosol (Polyvalue Be	elow Su	rface (S8)	(MLRA	147, 148)		uck (A10) (M	•
	ipedon (A2)		Thin Dark Su						rairie Redox	
Black His	stic (A3)		Loamy Muck						A 147, 148)	. ,
Hydroger	Sulfide (A4)		Loamy Gleye	ed Matri	x (F2)			Piedmo	nt Floodplair	Soils (F19)
Stratified	Layers (A5)		Depleted Ma	trix (F3))			(MLR	A 136, 147)	
2 cm Mud	ck (A10) (LRR N)		Redox Dark	Surface	(F6)			Red Pa	rent Material	(F21)
Depleted	Below Dark Surface	e (A11)	Depleted Da	rk Surfa	ice (F7)			(outs	ide MLRA 12	27, 147, 148)
	rk Surface (A12)		Redox Depre							Surface (F22)
	ucky Mineral (S1)		Iron-Mangan		sses (F12	2) (LRR N	١,	Other (E	Explain in Re	marks)
	eyed Matrix (S4)		MLRA 136	•				2		
	edox (S5)		Umbric Surfa							c vegetation and
	Matrix (S6)		Piedmont Flo		-					nust be present,
Dark Sur			Red Parent I	viateriai	(F21) (M	LRA 127	, 14 <i>1</i> , 148)	unless	disturbed or p	oroblematic.
	ayer (if observed):									
Type:	ah a a \.						Undain Cail	D=====40	Vaa	Na V
Depth (in	cnes):						Hydric Soil	Present?	Yes	No X
Remarks:	ara not procent									
, Hyuric Solls	are not present.									

Project/Site: SR Clarksville	City/C	ounty: Montgomery	Sampling Date: 11/2/2021
Applicant/Owner: SRC		State: TN	Sampling Point: DP7-W4
Investigator(s): Lyranda Thiem	Section, 1	ownship, Range:	
Landform (hillside, terrace, etc.): hillslope	Local relief (c	concave, convex, none): CONCAVE	Slope (%):0-2
Subregion (LRR or MLRA): LRR N, MLRA 1	22 Lat: 36.542927	Long: -87.235373	Datum: WGS 1984
Soil Map Unit Name: Arrington silt loam, 0 to		ded NWI classific	ation: PFO
Are climatic / hydrologic conditions on the site			explain in Remarks.)
Are Vegetation No , Soil No , or Hydro	•	Are "Normal Circumstances" present	
		(If needed, explain any answers in R	
Are Vegetation No, Soil No, or Hydro SUMMARY OF FINDINGS – Attach			•
Hydrophytic Vegetation Present?	Yes X No Is the S	ampled Area	
Hydric Soil Present?		Wetland? Yes X	No
Wetland Hydrology Present?	Yes X No		
Remarks:			
PFO Wetland located near an agricultural fie	eld.		
HYDROLOGY			
		Sacandary Indicators	(minimum of two required)
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required)	red: check all that apply)	Surface Soil Cra	s (minimum of two required)
Surface Water (A1)	True Aquatic Plants (B14)		ted Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterr	
Saturation (A3)	Oxidized Rhizospheres on Livir		
Water Marks (B1)	Presence of Reduced Iron (C4)		
Sediment Deposits (B2)	Recent Iron Reduction in Tilled		
Drift Deposits (B3)	Thin Muck Surface (C7)		e on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Remarks)	X Stunted or Stres	
Iron Deposits (B5)		X Geomorphic Pos	sition (D2)
Inundation Visible on Aerial Imagery (B7	7)	Shallow Aquitard	I (D3)
X Water-Stained Leaves (B9)		Microtopographic	
Aquatic Fauna (B13)		FAC-Neutral Tes	st (D5)
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):	Wetland Hydrology Present?	Yes X No
(includes capillary fringe)			
Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, previous	inspections), if available:	
Remarks: Wetland hydrology is present.			
Welland Hydrology is present.			

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

T Ott (DI-t-: 00)				Indicator	
Tree Stratum (Plot size: 30)	% (Cover	Species?	Status	Dominance Test worksheet:
Platanus occidentalis	;	30	Yes	FACW	Number of Dominant Species
2. Celtis occidentalis		20	Yes	FACU	That Are OBL, FACW, or FAC:6 (A)
3. Acer rubrum		10	No	FAC	Total Number of Dominant
4. Acer saccharinum	:	20	Yes	FACW	Species Across All Strata: 9 (B)
5. Robinia pseudoacacia		5	No	FACU	Percent of Dominant Species
6					That Are OBL, FACW, or FAC:66.7% (A/B)
7.					Prevalence Index worksheet:
		85 =	=Total Cover		Total % Cover of: Multiply by:
50% of total cover:	43	20%	of total cover:	17	OBL species 0 x 1 = 0
Sapling/Shrub Stratum (Plot size: 15)	1			FACW species 50 x 2 = 100
1. Symphoricarpos orbiculatus		10	Yes	FACU	FAC species 55 x 3 = 165
2. Carya tomentosa		5	Yes	UPL	FACU species 35 x 4 = 140
3.					UPL species 5 x 5 = 25
4.					Column Totals: 145 (A) 430 (B)
·· 5.					Prevalence Index = B/A = 2.97
6.					Hydrophytic Vegetation Indicators:
7.					1 - Rapid Test for Hydrophytic Vegetation
					X 2 - Dominance Test is >50%
8.	_				
^					X 3 - Prevalence Index is ≤3.0 ¹
9					4. Manus Isala ni ad Adam tati an al / Duna del accomo anticon
			=Total Cover		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:	8		=Total Cover of total cover:	3	data in Remarks or on a separate sheet)
50% of total cover:				3	1 ——
50% of total cover: Herb Stratum (Plot size: 5)	8			3 FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover:	8	20%	of total cover:		data in Remarks or on a separate sheet)
50% of total cover: Herb Stratum (Plot size: 5) 1. Verbesina alternifolia 2. Persicaria virginiana	8	20% 15	of total cover:	FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) Indicators of hydric soil and wetland hydrology must be
50% of total cover:	8	20% 15 10	of total cover: Yes Yes	FAC FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
50% of total cover:	8	20% 15 10	of total cover: Yes Yes	FAC FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
50% of total cover: Herb Stratum (Plot size: 5) 1. Verbesina alternifolia 2. Persicaria virginiana 3. Toxicodendron radicans 4.	8	20% 15 10	of total cover: Yes Yes	FAC FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
50% of total cover:	8	20% 15 10	of total cover: Yes Yes	FAC FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
50% of total cover:	8	20% 15 10	of total cover: Yes Yes	FAC FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
50% of total cover: Herb Stratum (Plot size: 5) 1. Verbesina alternifolia 2. Persicaria virginiana 3. Toxicodendron radicans 4. 5. 6. 7. 88.	8	20% 15 10	of total cover: Yes Yes	FAC FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less
50% of total cover:	8	20% 15 10	of total cover: Yes Yes	FAC FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
50% of total cover:	8	20% 15 10	of total cover: Yes Yes	FAC FAC	data in Remarks or on a separate sheet) 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 or equal to 3.28 ft
50% of total cover:	8	20% 15 10 10	Yes Yes Yes	FAC FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Herb Stratum (Plot size: 5) 1. Verbesina alternifolia 2. Persicaria virginiana 3. Toxicodendron radicans 4. 5. 6. 7. 8. 9. 10. 11.	8	20% 15 10 10 35	Yes Yes Yes Total Cover	FAC FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
50% of total cover:	8	20% 15 10 10 35	Yes Yes Yes	FAC FAC	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover:	8	20% 15 10 10 35 20%	Yes Yes Yes Yes Total Cover of total cover:	FAC FAC 7	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
50% of total cover:	8	20% 15 10 10 35	Yes Yes Yes Total Cover	FAC FAC	data in Remarks or on a separate sheet) 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 or equal to 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
50% of total cover: Herb Stratum (Plot size: 5) 1. Verbesina alternifolia 2. Persicaria virginiana 3. Toxicodendron radicans 4. 5. 6. 7. 8. 9. 110. 111. 50% of total cover: Woody Vine Stratum (Plot size: 1. Smilax rotundifolia 2.	8	20% 15 10 10 35 20%	Yes Yes Yes Yes Total Cover of total cover:	FAC FAC 7	data in Remarks or on a separate sheet) 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 or equal to 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
50% of total cover: Herb Stratum (Plot size: 5) 1. Verbesina alternifolia 2. Persicaria virginiana 3. Toxicodendron radicans 4. 5. 6. 7. 8. 9. 10. 11. 50% of total cover: Woody Vine Stratum (Plot size: 1. Smilax rotundifolia 2. 3. 3. 50% of total cover: 2. 3. 50% of total c	8	20% 15 10 10 35 20%	Yes Yes Yes Yes Total Cover of total cover:	FAC FAC 7	data in Remarks or on a separate sheet) 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 or equal to 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
50% of total cover:	8	20% 15 10 10 35 20%	Yes Yes Yes Yes Total Cover of total cover:	FAC FAC 7	data in Remarks or on a separate sheet) 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 or equal to 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
50% of total cover:	8	20% 15 10 10 35 20% 10	Yes Yes Yes Yes Total Cover of total cover:	FAC FAC 7	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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
50% of total cover:	18	20% 15 10 10 35 20% 10	Yes Yes Yes Yes Total Cover of total cover:	FAC FAC 7	data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 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.

Wetland vegetation is present.

Sampling Point: DP7-W4

SOIL Sampling Point: DP7-W4

	ription: (Describe t	o the de				ator or c	onfirm the absence	e of indicators.)
Depth (inches)	Matrix Color (maint)	%	Color (moist)	x Featur %		Loc ²	Toyturo	Domarka
(inches) 0-6	Color (moist) 10YR 4/2	100	Color (moist)		Type ¹	LOC	Texture	Remarks
							Loamy/Clayey	
6-18	10YR 4/2	90	10YR 5/6	10	<u>C</u>	M	Loamy/Clayey	
¹ Type: C=Co	ncentration, D=Deple	etion, RM	=Reduced Matrix, M	 IS=Mas	ked Sand	Grains.	² Locatio	on: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Inc	licators for Problematic Hydric Soils ³ :
Histosol ((A1)		Polyvalue Be	elow Sur	face (S8	(MLRA	147, 148)	2 cm Muck (A10) (MLRA 147)
Histic Ep	pedon (A2)		Thin Dark Su	urface (S	89) (MLR	A 147, 1	48)	Coast Prairie Redox (A16)
Black His	tic (A3)		Loamy Muck	y Miner	al (F1) (N	ILRA 13	6)	(MLRA 147, 148)
Hydroger	Sulfide (A4)		Loamy Gleye	ed Matri	x (F2)			_Piedmont Floodplain Soils (F19)
	Layers (A5)		X Depleted Ma					(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark					_Red Parent Material (F21)
	Below Dark Surface	(A11)	Depleted Da					(outside MLRA 127, 147, 148)
	rk Surface (A12)		Redox Depre		-			_Very Shallow Dark Surface (F22)
	ucky Mineral (S1)		Iron-Mangan		sses (F12	2) (LRR I	N,	Other (Explain in Remarks)
	eyed Matrix (S4)		MLRA 136	•			3.	
	edox (S5)		Umbric Surfa					dicators of hydrophytic vegetation and
	Matrix (S6)		Piedmont Flo		-			wetland hydrology must be present,
Dark Sur	. ,		Red Parent I	viateriai	(FZ1) (IVI	LRA 12/	, 147, 148) I	unless disturbed or problematic.
	ayer (if observed):							
Type: Depth (in	chee).						Hydric Soil Pre	sent? Yes X No
							Tryunc 3011 File	<u> </u>
Remarks: ,Hydric Soils	ara procent							
,i iyunc sons	are present.							

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

Project/Site: SR Clarksville		City/County: Montgo	omery	Sampling Date: 11/2/2021
Applicant/Owner: SRC			State: TN	Sampling Point: DP8-W5
Investigator(s): Lyranda Thiem		Section, Township, Ran	 ge:	<u> </u>
Landform (hillside, terrace, etc.): hillslope		cal relief (concave, conve	•	Slope (%): 0-2
Subregion (LRR or MLRA): LRR N, MLRA 1			g: -87.236005	Datum: WGS 1984
Soil Map Unit Name: Arrington silt loam, 0 to	·	·	NWI classifica	
				•
Are climatic / hydrologic conditions on the site			-	explain in Remarks.)
Are Vegetation No, Soil No, or Hydro			ll Circumstances" present	
Are Vegetation Yes, Soil No, or Hydro			explain any answers in R	•
SUMMARY OF FINDINGS – Attach	site map showing s	sampling point loca	ntions, transects, in	nportant 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			
Remarks:	<u>.</u>			
PFO wetland located in a forested island wit	hin an agricultural field. Th	e wetland is sparsly vege	etated with upland plants	growing around the outside of
the wetland.				
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators	(minimum of two required)
Primary Indicators (minimum of one is require	red; check all that apply)		Surface Soil Crad	
X Surface Water (A1)	True Aquatic Plants ((B14)	X Sparsely Vegetat	ed Concave Surface (B8)
X High Water Table (A2)	Hydrogen Sulfide Od	or (C1)	Drainage Pattern	s (B10)
X Saturation (A3)	Oxidized Rhizospher	es on Living Roots (C3)	Moss Trim Lines	(B16)
Water Marks (B1)	Presence of Reduced	d Iron (C4)	Dry-Season Wate	er Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction	on in Tilled Soils (C6)	Crayfish Burrows	(C8)
Drift Deposits (B3)	X Thin Muck Surface (0	C7)	Saturation Visible	e on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Rer	marks)	Stunted or Stress	sed Plants (D1)
Iron Deposits (B5)			X Geomorphic Pos	ition (D2)
Inundation Visible on Aerial Imagery (B7	['])		Shallow Aquitard	(D3)
X Water-Stained Leaves (B9)			Microtopographic	Relief (D4)
Aquatic Fauna (B13)			FAC-Neutral Tes	t (D5)
Field Observations:		, .		
Surface Water Present? Yes X	No Depth (inche	·		
Water Table Present? Yes X	No Depth (inche	· -		
Saturation Present? Yes X	No Depth (inche	es): <u>12</u> Wetlar	id Hydrology Present?	Yes <u>X</u> No
(includes capillary fringe) Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos	previous inspections), i	f available:	
		, p ,		
Remarks:				
Wetland hydrology is present.				

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP8-W5 Absolute Dominant Indicator 30 ___) % Cover Tree Stratum (Plot size: Species? Status **Dominance Test worksheet:** 1. Juglans nigra 20 Yes FACU **Number of Dominant Species** 2. Carya tomentosa 5 Yes UPL That Are OBL, FACW, or FAC: (A) 3. **Total Number of Dominant** 4. Species Across All Strata: (B) 5. Percent of Dominant Species 6. That Are OBL, FACW, or FAC: 40.0% (A/B) 7. Prevalence Index worksheet: 25 =Total Cover Total % Cover of: 50% of total cover: 13 20% of total cover: **OBL** species x 1 = **FACW** species Sapling/Shrub Stratum (Plot size: x2 =20 1. Asimina triloba **FAC FAC** species x3 =2. Carya tomentosa **UPL FACU** species 20 x 4 = 3. UPL species 15 x 5 = 75 60 (A) 4. Column Totals: 225 (B) 5. Prevalence Index = B/A = 6. **Hydrophytic Vegetation Indicators:** 7. 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 8. 3 - Prevalence Index is ≤3.01 9. 4 - Morphological Adaptations¹ (Provide supporting 30 =Total Cover data in Remarks or on a separate sheet) 50% of total cover: 15 20% of total cover: Herb Stratum (Plot size: 5) Problematic Hydrophytic Vegetation¹ (Explain) Polygonum achoreum 1. 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 than 3 in. DBH and greater than or equal to 3.28 ft 8. (1 m) tall. 9. 10. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. =Total Cover Woody Vine - All woody vines greater than 3.28 ft in 50% of total cover: 3 20% of total cover: Woody Vine Stratum (Plot size: 5) 1. 2. 3. 4. Hydrophytic =Total Cover Vegetation 20% of total cover: 50% of total cover: Present? No X Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point: DP8-W5

	ription: (Describe t	o the de				ator or c	onfirm the absence	e of indicators.)
Depth (inches)	Color (moist)	%	Color (moist)	x Featur %	res Type ¹	Loc ²	Texture	Remarks
0-4	2.5Y 5/2	90	7.5YR 4/4	10	С	M	Loamy/Clayey	Remarks
								-
4-18	2.5Y 6/2	80	5YR 4/6	20	<u>C</u>	<u>M</u>	Loamy/Clayey	
			_					
1- 0.0							2,	
'Type: C=Co	ncentration, D=Deple	etion, RM	=Reduced Matrix, N	1S=Mas	ked Sand	d Grains.		on: PL=Pore Lining, M=Matrix. licators for Problematic Hydric Soils ³ :
Histosol (Polyvalue Be	elow Sur	rface (S8) (MI RA		2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Thin Dark Su					Coast Prairie Redox (A16)
Black His			Loamy Muck	-				(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye	•	. , .		-,	Piedmont Floodplain Soils (F19)
	Layers (A5)		X Depleted Ma		, ,			(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark					Red Parent Material (F21)
	Below Dark Surface	(A11)	Depleted Da					(outside MLRA 127, 147, 148)
Thick Da	rk Surface (A12)		X Redox Depre	essions	(F8)			Very Shallow Dark Surface (F22)
Sandy M	ucky Mineral (S1)		Iron-Mangan	ese Ma	sses (F12	2) (LRR I	Ν,	Other (Explain in Remarks)
Sandy G	leyed Matrix (S4)		MLRA 136	5)				
Sandy Re	edox (S5)		Umbric Surfa	ace (F13	3) (MLRA	122, 13	6) 3Ino	dicators of hydrophytic vegetation and
Stripped	Matrix (S6)		Piedmont Flo		-			wetland hydrology must be present,
Dark Sur	face (S7)		Red Parent I	Material	(F21) (M	LRA 127	', 147, 148)	unless disturbed or problematic.
	.ayer (if observed):							
Type:								
Depth (in	iches):						Hydric Soil Pres	sent? Yes X No
Remarks:								
Hydric Soils,	are present.							

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

Project/Site: SR Clarksville		City/County:	Montgomery		Sampling Date:	11/2/2021		
Applicant/Owner: SRC				State: TN	— Sampling Point:	DP9-UP5		
Investigator(s): Lyranda Thiem		Section, Townsh	ip, Range:		_			
Landform (hillside, terrace, etc.): Flat	Lo	- ocal relief (concave		CONCAVE	Slope (%):	0		
Subregion (LRR or MLRA): LRR N, MLRA 12		,	Long: -87.236			WGS 1984		
Soil Map Unit Name: Arrington silt loam, 0 to		ionally flooded	Long	NWI classifica		WGG 1004		
Are climatic / hydrologic conditions on the site	typical for this time of ye	ear? Y	es X No	(If no,	explain in Remark	.s.)		
Are Vegetation No , Soil No , or Hydrol	logy No significantly di	isturbed? Are	"Normal Circums	tances" present	:? Yes X	No		
Are Vegetation No , Soil No , or Hydrol			eeded, explain ar			- —		
SUMMARY OF FINDINGS – Attach	<u> </u>		•	•	,	res, etc.		
Hydrophytic Vegetation Present?	Yes No X	Is the Sample	d Area					
	Yes No X	within a Wetla	nd?	Yes	No X			
Wetland Hydrology Present?	Yes No X				<u> </u>			
Upland datapoint upslope of wetland 5 locate								
HYDROLOGY								
Wetland Hydrology Indicators:	•		Seco	ndary Indicators	(minimum of two	required)		
Primary Indicators (minimum of one is require	ed; check all that apply)		s	Surface Soil Cra	cks (B6)			
Surface Water (A1)	True Aquatic Plants		s	parsely Vegeta	ted Concave Surfa	ce (B8)		
—— High Water Table (A2)	Hydrogen Sulfide Od			rainage Pattern				
Saturation (A3)	Oxidized Rhizospher	=		Moss Trim Lines (B16) Dry-Season Water Table (C2)				
Water Marks (B1)	Presence of Reduce	` '		-				
Sediment Deposits (B2)	Recent Iron Reduction		· ·	Crayfish Burrows	s (C8) e on Aerial Imager	v (CO)		
Drift Deposits (B3) Algal Mat or Crust (B4)	Thin Muck Surface (Other (Explain in Re				_	y (C9)		
Iron Deposits (B5)	Other (Explain in Net	illaino)		Stunted or Stressed Plants (D1) Geomorphic Position (D2)				
Inundation Visible on Aerial Imagery (B7	·)			Shallow Aquitard (D3)				
Water-Stained Leaves (B9)	,			Microtopographic Relief (D4)				
Aquatic Fauna (B13)			<u> </u>	AC-Neutral Tes	t (D5)			
Field Observations:	_							
Surface Water Present? Yes	No X Depth (inch							
Water Table Present? Yes		nes):						
Saturation Present? Yes	No X Depth (inch	nes):	Wetland Hydrol	ogy Present?	Yes	No X		
(includes capillary fringe) Describe Recorded Data (stream gauge, more	nitoring well aerial photos	s previous inspec	tions) if available	<u>.</u>				
Describe Necorded Data (stream gauge, mor	Thiorning went, derial priotos	s, previous irispec	iions), ii avallabic	·•				
Remarks:								
Wetland hydrology is not present								

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP9-UP5 Absolute Dominant Indicator 30 ___) % Cover Species? Status **Dominance Test worksheet:** Tree Stratum (Plot size: 1. **Number of Dominant Species** 2. That Are OBL, FACW, or FAC: (A) 3. **Total Number of Dominant** 4. Species Across All Strata: (B) 5. Percent of Dominant Species 6. That Are OBL, FACW, or FAC: 50.0% (A/B) Prevalence Index worksheet: =Total Cover Total % Cover of: 50% of total cover: _____ 20% of total cover: ___ **OBL** species 0 x 1 = Sapling/Shrub Stratum (Plot size: 15 **FACW** species x2 =x 3 = 1. FAC species 20 FACU species 0 2. x 4 = 3. UPL species 50 x 5 = 250 70 (A) 4. Column Totals: 310 (B) 5. Prevalence Index = B/A = 6. **Hydrophytic Vegetation Indicators:** 7. 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 8. 3 - Prevalence Index is ≤3.01 9. 4 - Morphological Adaptations¹ (Provide supporting =Total Cover data in Remarks or on a separate sheet) 50% of total cover: ___ 20% of total cover: Herb Stratum (Plot size: 5) Problematic Hydrophytic Vegetation¹ (Explain) UPL 1. Zea mays Yes ¹Indicators of hydric soil and wetland hydrology must be 2. Ranunculus arvensis FAC 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 than 3 in. DBH and greater than or equal to 3.28 ft 8. (1 m) tall. 9. 10. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. =Total Cover Woody Vine - All woody vines greater than 3.28 ft in 50% of total cover: 35 20% of total cover: Woody Vine Stratum (Plot size: 5) 1. 2. 3. 4. Hydrophytic =Total Cover Vegetation 50% of total cover: 20% of total cover: Present? No X Remarks: (Include photo numbers here or on a separate sheet.) **Species indicator status range OBL-UPL. Assigned FAC status for wetland/upland determination.

SOIL Sampling Point: DP9-UP5

	ription: (Describe t	to the de				itor or co	onfirm the abs	ence of indi	cators.)	
Depth	Matrix	0/		x Featur		1 2	T		D	wl
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture		Ren	narks
0-18	10YR 4/4	100					Loamy/Clay	ey		
	-									
¹ Type: C=Co	ncentration, D=Depl	etion, RM	I=Reduced Matrix, N	 IS=Mas	ked Sand	Grains.	2Lc	cation: PL=F	Pore Lining, N	л=Matrix.
Hydric Soil I		,								atic Hydric Soils ³ :
Histosol (Polyvalue Be	elow Su	rface (S8)	(MLRA	147, 148)		uck (A10) (M	-
	ipedon (A2)		Thin Dark Su						rairie Redox	
Black His	stic (A3)		Loamy Muck						A 147, 148)	. ,
Hydroger	Sulfide (A4)		Loamy Gleye	ed Matri	x (F2)			Piedmo	nt Floodplair	Soils (F19)
Stratified	Layers (A5)		Depleted Ma	trix (F3))			(MLR	A 136, 147)	
2 cm Mud	ck (A10) (LRR N)		Redox Dark	Surface	(F6)			Red Pa	rent Material	(F21)
Depleted	Below Dark Surface	e (A11)	Depleted Da	rk Surfa	ice (F7)			(outs	ide MLRA 12	27, 147, 148)
	rk Surface (A12)		Redox Depre							Surface (F22)
	ucky Mineral (S1)		Iron-Mangan		sses (F12	2) (LRR N	١,	Other (E	Explain in Re	marks)
	eyed Matrix (S4)		MLRA 136	•				2		
	edox (S5)		Umbric Surfa							c vegetation and
	Matrix (S6)		Piedmont Flo		-					iust be present,
Dark Sur			Red Parent I	viateriai	(F21) (M	LRA 127	, 147, 148)	unless	disturbed or p	problematic.
	ayer (if observed):									
Type:	ah a a \.						Usadais Csil	D=====40	V	No. V
Depth (in	cnes):						Hydric Soil	Present?	Yes	No X
Remarks:	ara not procent									
, Hyuric Solls	are not present.									

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

Project/Site: SR Clarksville		City/County:	Montgomery		Sampling Date:	11/2/2021		
Applicant/Owner: SRC				State: TN	Sampling Point:	DP10-UP6		
Investigator(s): Lyranda Thiem		Section, Townsh	nip, Range:		_			
Landform (hillside, terrace, etc.): hillslope	Lo	- ocal relief (concav	e, convex, none):	CONCAVE	Slope (%):	5-10		
Subregion (LRR or MLRA): LRR N, MLRA 1	_	•	Long: -87.234		Patum:	WGS 1984		
Soil Map Unit Name: Arrington silt loam, 0 to		ionally flooded	Eong07.204	NWI classifica		VVCC 100+		
Are climatic / hydrologic conditions on the site	typical for this time of ye	ear? Y	es X No	(If no,	explain in Remark	s.)		
Are Vegetation No , Soil No , or Hydro	logy No significantly di	isturbed? Are	"Normal Circums	stances" present	? Yes X	No		
Are Vegetation No , Soil No , or Hydro			needed, explain a					
SUMMARY OF FINDINGS – Attach			• •	•	,	res, etc.		
Hydrophytic Vegetation Present?	Yes No X	Is the Sample	d Area					
Hydric Soil Present?	Yes No X	within a Wetla	and?	Yes	No X			
Wetland Hydrology Present?	Yes No X				<u> </u>			
Upland datapoint upslope of wetland wetland	1 5 located within a corn fi	îeld.						
HYDROLOGY								
Wetland Hydrology Indicators:			Seco	ndary Indicators	(minimum of two	required)		
Primary Indicators (minimum of one is require	red; check all that apply)			Surface Soil Crac				
Surface Water (A1)	True Aquatic Plants				ed Concave Surfa	ice (B8)		
High Water Table (A2)	Hydrogen Sulfide Oc			Drainage Pattern				
Saturation (A3)	Oxidized Rhizospher	_		Moss Trim Lines (B16) Dry-Season Water Table (C2)				
Water Marks (B1) Sediment Deposits (B2)	Presence of Reduce Recent Iron Reduction	, ,		Ory-Season wate Crayfish Burrows				
Drift Deposits (B3)	Thin Muck Surface (· · · · —	-	on Aerial Imager	v (C9)		
Algal Mat or Crust (B4)	Other (Explain in Re				_	y (00)		
Iron Deposits (B5)		,		Stunted or Stressed Plants (D1) Geomorphic Position (D2)				
Inundation Visible on Aerial Imagery (B7	')			Shallow Aquitard (D3)				
Water-Stained Leaves (B9)			<u></u> N	/licrotopographic	Relief (D4)			
Aquatic Fauna (B13)			F	AC-Neutral Tes	t (D5)			
Field Observations:								
Surface Water Present? Yes	No X Depth (inch							
Water Table Present? Yes		nes):						
Saturation Present? Yes	No X Depth (inch	nes):	Wetland Hydro	logy Present?	Yes	No X		
(includes capillary fringe) Describe Recorded Data (stream gauge, mo	nitoring well aerial photos	s previous inspec	tions) if available	a·				
Describe Necorded Data (stream gauge, mo	Thomas wen, aenai priotos	s, previous mapec	nions), ii availabit	5 .				
Remarks:								
Wetland hydrology is not present								

VEGETATION	(Four Strata)) – Use	scientific	names	of I	olants.
------------	---------------	---------	------------	-------	------	---------

VE	GETATION (Four Strata) – Use scienti	fic names	of plants.		Sampling Point: <u>DP10-UP6</u>
Tr	ee Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.	Acer saccharinum	20	Yes	FACW	Number of Dominant Species
2.	Celtis occidentalis	20	Yes	FACU	That Are OBL, FACW, or FAC: 4 (A)
3.	Juglans nigra	10	No	FACU	
4.	Prunus serotina	10	No	FACU	Total Number of Dominant Species Across All Strata: 7 (B)
5.	Quercus alba	15	Yes	FACU	``
6.			1.00	17100	Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)
7.		-	_		Prevalence Index worksheet:
٠.		75	=Total Cover		Total % Cover of: Multiply by:
	50% of total cover: 3		6 of total cover:	15	OBL species 0 x 1 = 0
Sa	upling/Shrub Stratum (Plot size: 15)	<u>,,, </u>	o or total cover.		FACW species 20 x 2 = 40
1.	Asimina triloba	20	Yes	FAC	FAC species 40 x 3 = 120
2.	Cornus florida	5	No	FACU	FACU species 70 x 4 = 280
3.		5	No No	FACU	UPL species 0 x 5 = 0
	Fagus grandifolia		INO	FACU	
4.			_		
5.	-				Prevalence Index = B/A = 3.38
6.					Hydrophytic Vegetation Indicators:
7.			_		1 - Rapid Test for Hydrophytic Vegetation
8.			_		X 2 - Dominance Test is >50%
9.					3 - Prevalence Index is ≤3.0 ¹
		30	=Total Cover		4 - Morphological Adaptations ¹ (Provide supporting
	50% of total cover:1	5 20%	% of total cover:	6	data in Remarks or on a separate sheet)
He	erb Stratum (Plot size:5)				Problematic Hydrophytic Vegetation ¹ (Explain)
1.	Verbesina alternifolia	10	Yes	FAC	¹ Indicators of hydric soil and wetland hydrology must be
2.	Persicaria virginiana	10	Yes	FAC	present, unless disturbed or problematic.
3.	Polystichum acrostichoides	5	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
8.					than 3 in. DBH and greater than or equal to 3.28 ft
9.					(1 m) tall.
10					Herb – All herbaceous (non-woody) plants, regardless
11		-	_		of size, and woody plants less than 3.28 ft tall.
' '	·	25	=Total Cover		Woody Vine – All woody vines greater than 3.28 ft in
	F00/ of total covers 4		-	E	height.
۱۸/		3 20%	% of total cover:	5	, and the second
	oody Vine Stratum (Plot size: 5)				
1.					
2.					
3.					
4.					
5.					Hydrophytic
			=Total Cover		Vegetation
	50% of total cover:	20%	6 of total cover:		Present? Yes X No
D	emarks: (Include photo numbers here or on a sens		<u> </u>		<u> </u>

Remarks: (Include photo numbers here or on a separate sheet.)
**Species indicator status range OBL-UPL. Assigned FACU status for wetland/upland determination.

SOIL Sampling Point: DP10-UP6

	ription: (Describe t	o the dep				tor or co	onfirm the al	bsence of	indicators.)	
Depth	Matrix			k Featur		. 2	- .		5	
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Textur	<u>e </u>	Ken	narks
0-18	7.5YR 4/4	100					Loamy/Cl	ayey		
			_							_
¹Type: C=Co	oncentration, D=Deple	etion RM	=Reduced Matrix M	 IS=Mas	ked Sand	Grains	2	l ocation:	PL=Pore Lining, I	M=Matrix
Hydric Soil I		,								atic Hydric Soils ³ :
Histosol			Polyvalue Be	elow Sur	face (S8)	(MLRA	147, 148)		m Muck (A10) (M	-
	ipedon (A2)		Thin Dark Su						ast Prairie Redox	
Black His			Loamy Muck	-					MLRA 147, 148)	,
	n Sulfide (A4)		Loamy Gleye	•	. , .		•		dmont Floodplair	n Soils (F19)
	Layers (A5)		Depleted Ma	trix (F3))				MLRA 136, 147)	. ,
2 cm Mu	ck (A10) (LRR N)		Redox Dark	Surface	(F6)			Re	d Parent Material	(F21)
Depleted	Below Dark Surface	(A11)	Depleted Da	rk Surfa	ce (F7)				outside MLRA 1	27, 147, 148)
Thick Da	rk Surface (A12)		Redox Depre	essions	(F8)			Vei	ry Shallow Dark S	Surface (F22)
	ucky Mineral (S1)		Iron-Mangan	ese Ma	sses (F12	2) (LRR N	١,	Oth	ner (Explain in Re	emarks)
	leyed Matrix (S4)		MLRA 136	•						
	edox (S5)		Umbric Surfa		-				ors of hydrophytic	-
	Matrix (S6)		Piedmont Flo		-				tland hydrology m	
Dark Sur	face (S7)		Red Parent I	Material	(F21) (M	LRA 127	, 147, 148)	unl	ess disturbed or p	problematic.
Restrictive L	.ayer (if observed):									
Type:										
Depth (in	iches):						Hydric Sc	oil Present	? Yes	No X
Remarks:										
Hydric Soils,	are not present.									

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

Project/Site: SR Clarksville		City/County: Montgom	nery	Sampling Date: 11/2/2021
Applicant/Owner: SRC			State: TN	Sampling Point: DP11-W6
Investigator(s): Lyranda Thiem	8	ection, Township, Range);	
Landform (hillside, terrace, etc.): hillslope		Il relief (concave, convex		Slope (%): 0-2
Subregion (LRR or MLRA): LRR N, MLRA 1		•	-87.238966	
				
Soil Map Unit Name: Arrington silt loam, 0 to			NWI classifica	
Are climatic / hydrologic conditions on the site	•		No (If no, e	explain in Remarks.)
Are Vegetation Yes, Soil No, or Hydro	logy No significantly dist	urbed? Are "Normal of	Circumstances" present	? Yes X No
Are Vegetation No, Soil No, or Hydro	logy No naturally problem	natic? (If needed, ex	xplain any answers in Re	emarks.)
SUMMARY OF FINDINGS – Attach	site map showing sa	mpling point locat	ions, transects, im	portant features, etc.
Hydrophytic Vegetation Present?	Yes X No	Is the Sampled Area		
Hydric Soil Present?		within a Wetland?	Yes X	No
Wetland Hydrology Present?	Yes X No	William a Wollana	<u>X</u>	<u> </u>
Remarks:				
PEM Wetland located within an agricultural f	•		,	
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indicators	(minimum of two required)
Primary Indicators (minimum of one is require	red; check all that apply)		Surface Soil Crac	ks (B6)
Surface Water (A1)	True Aquatic Plants (B	•	Sparsely Vegetate	ed Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor		X Drainage Patterns	
Saturation (A3)	Oxidized Rhizospheres		Moss Trim Lines	
Water Marks (B1)	Presence of Reduced	` '	Dry-Season Wate	
Sediment Deposits (B2)	Recent Iron Reduction		Crayfish Burrows	
Drift Deposits (B3)	Thin Muck Surface (C7			on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Rema	arks)	Stunted or Stress	
Iron Deposits (B5)			X Geomorphic Posi	
Inundation Visible on Aerial Imagery (B7	')		Shallow Aquitard	
X Water-Stained Leaves (B9)			Microtopographic	
Aquatic Fauna (B13)			FAC-Neutral Test	(D5)
Field Observations:				
Surface Water Present? Yes	No X Depth (inches			
Water Table Present? Yes	No X Depth (inches			Waa W Na
Saturation Present? Yes (includes capillary fringe)	No X Depth (inches): wetiand	Hydrology Present?	Yes <u>X</u> No
Describe Recorded Data (stream gauge, mo	onitoring well aerial photos	revious inspections) if a	available:	
Describe Nessiaca Data (stream gaage, me	willowing won, donar priotos, j	sieviode inepedaeriej, ir e	availabio.	
Remarks:				
Wetland hydrology is present.				

 VEGETATION (Four Strata) – Use scientific names of plants.
 Sampling Point:
 DP11-W6

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.		'		Number of Dominant Species
2.				That Are OBL, FACW, or FAC: 1 (A)
3.				Total Number of Dominant
4.				Species Across All Strata:4 (B)
5.				Percent of Dominant Species
6.				That Are OBL, FACW, or FAC: 25.0% (A/B)
7				Prevalence Index worksheet:
	=	=Total Cover		Total % Cover of: Multiply by:
50% of total cover:	20%	of total cover:		OBL species 0 x 1 = 0
Sapling/Shrub Stratum (Plot size:)				FACW species 20 x 2 = 40
1				FAC species 0 x 3 = 0
2				FACU species 30 x 4 = 120
3				UPL species 40 x 5 = 200
4				Column Totals: 90 (A) 360 (B)
5				Prevalence Index = B/A = 4.00
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8.				2 - Dominance Test is >50%
9.				3 - Prevalence Index is ≤3.0 ¹
	=======================================	=Total Cover		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:	20%	of total cover:		data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5)				Problematic Hydrophytic Vegetation ¹ (Explain)
Digitaria sanguinalis	30	Yes	FACU	¹ Indicators of hydric soil and wetland hydrology must be
2. Stellaria media	20	Yes	UPL	present, unless disturbed or problematic.
3. Panicum dichotomiflorum	20	Yes	FACW	Definitions of Four Vegetation Strata:
4. Zea mays	20	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				Sapling/Shrub – Woody plants, excluding vines, less
8				than 3 in. DBH and greater than or equal to 3.28 ft
9				(1 m) tall.
10				Herb – All herbaceous (non-woody) plants, regardless
44				of size, and woody plants less than 3.28 ft tall.
11				
· · · · · · · · · · · · · · · · · · ·	90 =	=Total Cover		Woody Vine – All woody vines greater than 3.28 ft in
50% of total cover: 45		=Total Cover of total cover:	18	Woody Vine – All woody vines greater than 3.28 ft in height.
			18	
50% of total cover: 45			18	
50% of total cover: 45 Woody Vine Stratum (Plot size:)			18	
50% of total cover: 45 Woody Vine Stratum (Plot size:) 1.			18	
50% of total cover: 45 Woody Vine Stratum (Plot size:) 1			18	
50% of total cover:			18	height.
50% of total cover: 45 Woody Vine Stratum (Plot size:) 1 2 3 4	20%		18	height. Hydrophytic
50% of total cover: 45 Woody Vine Stratum (Plot size:) 1 2 3 4	20%	of total cover:	18	height.
50% of total cover: 45 Woody Vine Stratum (Plot size:) 1 2 3 4 5 50% of total cover:	20%	of total cover:	18	height. Hydrophytic Vegetation
50% of total cover: 45 Woody Vine Stratum (Plot size:) 1 2 3 4 5 Remarks: (Include photo numbers here or on a separ	20% 20% 20% 20% 20%	of total cover:		Hydrophytic Vegetation Present? Yes No _X
50% of total cover: 45 Woody Vine Stratum (Plot size:) 1 2 3 4 5 50% of total cover:	20% 20% 20% 20% 20%	of total cover:		Hydrophytic Vegetation Present? Yes No _X
50% of total cover: 45 Woody Vine Stratum (Plot size:) 1. 2. 3. 4. 5. 50% of total cover:	20% 20% 20% 20% 20%	of total cover:		Hydrophytic Vegetation Present? Yes No _X
50% of total cover: 45 Woody Vine Stratum (Plot size:) 1. 2. 3. 4. 5. 50% of total cover:	20% 20% 20% 20% 20%	of total cover:		Hydrophytic Vegetation Present? Yes No _X
50% of total cover: 45 Woody Vine Stratum (Plot size:) 1. 2. 3. 4. 5. 50% of total cover:	20% 20% 20% 20% 20%	of total cover:		Hydrophytic Vegetation Present? Yes No _X

SOIL Sampling Point: DP11-W6

	ription: (Describe t	o the dep				ator or co	onfirm the abse	nce of indi	icators.)	
Depth	Matrix			c Featur		. 2				
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	Texture		Remarks	
0-18	2.5Y 5/2	80	7.5YR 4/6	20	C	PL/M	Loamy/Claye	у		
										_
¹Type: C=Co	ncentration, D=Deple	etion RM=	Reduced Matrix M	IS=Mas	ked Sand	Grains	² l oc	ation: PI =	Pore Lining, M=Matrix.	
Hydric Soil I	•	2				. 0			for Problematic Hydric	Soils ³ :
Histosol			Polyvalue Be	low Sur	face (S8	(MLRA			luck (A10) (MLRA 147)	
	pedon (A2)		Thin Dark Su				_		Prairie Redox (A16)	
Black His			Loamy Muck				-		RA 147, 148)	
	Sulfide (A4)		Loamy Gleye	-					ont Floodplain Soils (F19))
Stratified	Layers (A5)		X Depleted Ma	trix (F3))		-	(MLF	RA 136, 147)	
2 cm Mu	ck (A10) (LRR N)		Redox Dark	Surface	(F6)		_	Red Pa	arent Material (F21)	
Depleted	Below Dark Surface	(A11)	Depleted Da	rk Surfa	ce (F7)			(outs	side MLRA 127, 147, 148	3)
	k Surface (A12)		X Redox Depre		-		_		hallow Dark Surface (F22	2)
	ucky Mineral (S1)		Iron-Mangan		sses (F12	2) (LRR N	l, _	Other (Explain in Remarks)	
	eyed Matrix (S4)		MLRA 136	•						
	edox (S5)		Umbric Surfa						of hydrophytic vegetation	
	Matrix (S6)		Piedmont Flo		-				d hydrology must be pres	
Dark Sur			Red Parent N	Material	(F21) (M	LRA 127	147, 148)	unless	disturbed or problematic.	-
	ayer (if observed):									
Type:										
Depth (in	ches):						Hydric Soil P	resent?	Yes X No	
Remarks:										
Hydric Soils,	are present.									

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

Project/Site: SR Clarksville		City/County:	Montgomery		Sampling Date:	11/2/2021			
Applicant/Owner: SRC				State: TN	Sampling Point:	DP12-UP7			
Investigator(s): Lyranda Thiem		Section, Townsh	ip, Range:		_				
Landform (hillside, terrace, etc.): Flat	Lo	- ocal relief (concav		CONCAVE	Slope (%):	0			
Subregion (LRR or MLRA): LRR N, MLRA 12	_	•	Long: -87.238		. , ,	WGS 1984			
Soil Map Unit Name: Arrington silt loam, 0 to		ionally flooded		NWI classifica		W 00 100+			
Are climatic / hydrologic conditions on the site	typical for this time of ye	ear? Y	es X No	o (If no,	explain in Remark	s.)			
Are Vegetation No , Soil No , or Hydrol	logy No significantly di	isturbed? Are	"Normal Circums	tances" present	? Yes X	No			
Are Vegetation No , Soil No , or Hydrol			needed, explain ar	nv answers in Re	emarks.)				
SUMMARY OF FINDINGS – Attach			•	•	,	res, etc.			
Hydrophytic Vegetation Present?	Yes No X	Is the Sample	d Area						
Hydric Soil Present?	Yes No X	within a Wetla	ind?	Yes	No X				
Wetland Hydrology Present?	Yes No X								
HYDROLOGY									
Wetland Hydrology Indicators:	•		Seco	ndary Indicators	(minimum of two	required)			
Primary Indicators (minimum of one is require	ed; check all that apply)		s	Surface Soil Crac	cks (B6)				
Surface Water (A1)	True Aquatic Plants		s	Sparsely Vegetat	ed Concave Surfa	ice (B8)			
High Water Table (A2)	Hydrogen Sulfide Oc			Orainage Pattern					
Saturation (A3)	Oxidized Rhizospher	_		Moss Trim Lines (B16)					
Water Marks (B1)	Presence of Reduce	, ,		Ory-Season Wate					
Sediment Deposits (B2)	Recent Iron Reduction			Crayfish Burrows		(00)			
Drift Deposits (B3) Algal Mat or Crust (B4)	Thin Muck Surface (Other (Explain in Re				e on Aerial Imager	y (C9)			
Iron Deposits (B5)	Other (Explain in Ne	allaiks)		Stunted or Stressed Plants (D1) Geomorphic Position (D2)					
Inundation Visible on Aerial Imagery (B7	')			Shallow Aguitard (D3)					
Water-Stained Leaves (B9)	,			Microtopographic Relief (D4)					
Aquatic Fauna (B13)				AC-Neutral Tes					
Field Observations:									
Surface Water Present? Yes	No X Depth (inch	nes):							
Water Table Present? Yes		nes):							
Saturation Present? Yes	No X Depth (inch	nes):	Wetland Hydrol	logy Present?	Yes	No X			
(includes capillary fringe) Describe Recorded Data (stream gauge, more	nitoring wall parial photos	s provious inspec	tions) if available	· ·					
Describe Necolded Data (stream gauge, mor	Tilloring well, aerial priotos	s, previous irispec	dioris), ii avallabie	J.					
Remarks:									
Wetland hydrology is not present									

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody:	Date/Time: 11/2/2021	
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID :	
Site Name/Description: S1	SR Clarksville	
Site Location: located within a forested portion on the sourthern part of the project a	area	
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	Lat/Long: 36.543155/	
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	-87.235864	
Precipitation this Season vs. Normal: abnormally wet elevated average low abn Source of recent & seasonal precipidata: ESRL and AHPS	ormally dry unknown	
Watershed Size : 40,200 acres County: M	ontgomery	
Soil Type(s) / Geology: Arrington silt loam, 0 to 2 percent slopes, occasionally flooded	USDA: Web Soil Survey Source:	
Surrounding Land Use : Agricultural, forested, and residential/commerical		
Degree of historical alteration to natural channel morphology & hydrology (circle one & de Severe Moderate Slight Ab	escribe fully in Notes) : osent	

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
Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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) = 19.5	

Jı.	ısti	fica	tion	/ N	Nο	tes	•

distillication / Notes .
This is an intermittent stream with appromitelly 4-6 ft bank width and 6 inches to 3 feet bank height that runs downsloped starting near an agricultural corn field and running down through a forested area. No water was
observed in the channel at the time of the survey.

A. Geomorphology (Subtotal = 12)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	_1_	2	3
Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits		0.5	1	1.5
9. Natural levees	0	1	2	م
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS				
or	No:	= 0	Yes	= 3
NRCS map				

B. Hydrology (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	Ω	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel		lo = 0	Yes	= 1.5

C. Biology (Subtotal = 5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	9	1	2	3
23. Bivalves/mussels	9	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

¹ Focus is on the presence of terrestrial plants.

Total Points = 19.5
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes:	
Some gravel was sorting from the cobble. Lots of larger headcuts occured throughout the stream as we	II.

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Red River	Date/Time: 11/2/2021
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID:
Site Name/Description: S2	SR Clarksville
Site Location: located within a forested portion on the sourthern part of the project	ct area
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	Lat/Long: 36.542106° /
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	-87.232589°
Precipitation this Season vs. Normal: abnormally wet elevated average low a Source of recent & seasonal precipidata: ESRL and AHPS	bnormally dry unknown
Watershed Size : 40,200 acres	: Montgomery
Soil Type(s) / Geology: Arrington silt loam, 0 to 2 percent slopes, occasionally flooded	USDA: Web Soil Survey Source:
Surrounding Land Use : Agricultural, forested, and residential/commerical	
Degree of historical alteration to natural channel morphology & hydrology (circle one & Severe Moderate Slight	describe fully in Notes) : Absent

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	NA	wwc
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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-WPC Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = Stream	
Secondary Indicator Score (if applicable) = 42	

Justification / Notes:

dollineation / iteles i
This a section of the Red River. The bank width ranges from 15 feet to over 30 feet. Bank height ranges from 6 to
about 10 feet. Water depth in the channel was not measured at the time of the survey. Substrate within the river
consisted of mud, silt, gravel, and some cobble.

A. Geomorphology (Subtotal = 22)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits		0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS	No = 0			
or			Yes	= 3
NRCS map				

B. Hydrology (Subtotal = 9)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	ð
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No:	= 0	Yes	= 1.5

C. Biology (Subtotal = 11)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	9	1	2	3
24. Amphibians	9	0.5	\vdash	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

Total Points = $\frac{42}{1}$

Conveyance if Secondary Indicator Score < 19 points	
Notes:	
-	

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

Tennessee Division of Water Pollution Control. Version 1.5

Soil type(s) / Geology : Sengtown gravelity stit loam, 12 to 20 percent stops Surrounding Land Use : Agricultural, forested, and residential/commentar Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate Slight Absent Primary Field Indicators Observed Primary Field Indicators Observed Primary Indicators WWC 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 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with 2 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of insturally occurring ground water table connection With Stream 8. Flowing water in channel and 7 days since last precip >0.1° model watershed With Stream 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The peremitable of cobbie and gravel sorting from eachother. The intermittent stream Overall Hydrologic Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Assessors/Affiliation: HDR INC/ Lyranda Thiem Site Name/Description: S3 Site Location: located within a forested portion on the northern part of the project area HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 Per Vicus Rainfall (7-days): In the previous seven days trained 1.73 liches Precipitation this Season vs. Normal: abnormally wet elevated average low abnormally drightnown source of recent & seasonal precipidata: ESTR, MARAPITS Watershed Size: 40,200 acres County, Montgomery Watershed Size: 40,200 acres Surrounding Land Use: Agricultural, forested, and residential/commencet Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Slight Absent 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 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with 2 months aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of instruction of the project area 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 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 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 Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score seconda	Torribodo Dividion of Water Foliation Control, Verdien		
Assessors/Affiliation: HDR INC/ Lyranda Thiem Site Name/Description: S3 Site Location: located within a forested portion on the northern part of the project area HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 per part of the project area HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 per part of the project area HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 per part of the project area HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 per part of the project area Previous Rainfall (7-days): In the previous seven days it rained 1.73 (per part of the project area Previous Rainfall (7-days): In the previous seven days it rained 1.73 (per part of the project area Previous Rainfall (7-days): In the previous seven days it rained 1.73 (per part of the project area Watershed Size : 40.200 acres Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 per per part of the project area Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 per per part of the project area Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 per per part of the project area Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 per per part of the project area Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 per per part of the project area Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 per part stopes Source of react sength gravelly silt loam, 12 to 20 per part stopes Source of part sength gravelly silt loam, 12 to 20 per part stopes Source of part sength gravelly silt loam, 12 to 20 per part stopes Source of part sength gravelly silt loam, 12 to 20 per part stopes Source of part sength gravelly silt loam, 12 to 20 per part stopes Source of part sength gravelly silt loam, 12 to 20 per part stopes Source of part sength gravelly silt loam, 12 to 20 per part stopes Source of part sength gravelly silt loam, 12 to 20 per part stopes Source of part sength gravelly silt loam, 12 to 20 per part sto	Assessors/Affiliation: HDR INC/ Lyranda Thiem Site Name/Description: S3 Site Location: located within a forested portion on the nortifem/part of the project area HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 per part of the project area HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 per part of the project area HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 per part of the project area Previous Rainfall (7-days): In the previous seven days it rained 1.73 (2240 per part of the project area Previous Rainfall (7-days): In the previous seven days it rained 1.73 (2240 per part of the project area Previous Rainfall (7-days): In the previous seven days it rained 1.73 (2240 per part of the project area Rainfall (7-days): In the previous seven days it rained 1.73 (2240 per part of the project area Rainfall (7-days): In the previous seven days it rained 1.73 (2240 per part of the project area Rainfall (7-days): In the previous seven days it rained 1.73 (2240 per part of the project area Rainfall (7-days): In the previous seven days it rained 1.73 (2240 per part of the project area Rainfall (7-days): In the previous seven days it rained 1.73 (2240 per part of the project area Rainfall (7-days): Rainfall (7-da	Named Waterbody: UNT to Red River 5	Date/Tir	ne: 1/2/2021
Site Location: located within a forested portion on the northern part of the project area HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060	Site Location: located within a forested portion on the northern part of the project area HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302050			
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 Pee) Previous Rainfall (7-days): In the previous seven days it rained 1.73 Lobes Precipitation this Season vs. Normal: abnormally were elevated average low abnormally drynknown source of recent & seasonal precipitation 2 process and precipitation 3 process and precipitation 3 process and precipitation 3 process and precipitation 3 process and precipitation 4 precipitation 4 process and precipitation 4 precipitation 4 precipitation 4 precipitation 4 precipitation 4 precipitation 4 precipitation 5 process and precipitation 6 process and precipitation 6 process and precipitation 6 process and precipitation 7 proundwater conditions and precipitation 7 process and precipitation 8 process and precipitation 8 process and precipitation 8 process and precipitation 9 process 9	HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 Peep Lat/Long: 38.552273') Previous Rainfall (7-days): In the previous seven days it rained 1.73 lighted Precipitation this Season vs. Normal: abnormally wet elevated average low abnormally drynknown source of recent & seasonal precipitation areas Watershed Size: 40.200 acres County: Montgomery Watershed Size: 40.200 acres Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes Sourcourding Land Use: Agricultural, forested, and residential/commercal Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Primary Field Indicators Observed Primary Indicators 1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with 2.2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of inaturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precipi 301 micro as supporting evidence. In the absence of a primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perenywer graphs algered for Making Wight Biggs Department Making Resonance and starting the stream. The stream has lost of cobbie and gravel sorting from eachother. The intermittent stream Deverability thrologic Determination = Stream Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Site Name/Description: S3	SR CI	arksville
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 Pee) Previous Rainfall (7-days): In the previous seven days it rained 1.73 Lobes Precipitation this Season vs. Normal: abnormally were elevated average low abnormally drynknown source of recent & seasonal precipitation 2 process and precipitation 3 process and precipitation 3 process and precipitation 3 process and precipitation 3 process and precipitation 4 precipitation 4 process and precipitation 4 precipitation 4 precipitation 4 precipitation 4 precipitation 4 precipitation 4 precipitation 5 process and precipitation 6 process and precipitation 6 process and precipitation 6 process and precipitation 7 proundwater conditions and precipitation 7 process and precipitation 8 process and precipitation 8 process and precipitation 8 process and precipitation 9 process 9	HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060 Peep Lat/Long: 38.552273') Previous Rainfall (7-days): In the previous seven days it rained 1.73 lighted Precipitation this Season vs. Normal: abnormally wet elevated average low abnormally drynknown source of recent & seasonal precipitation areas Watershed Size: 40.200 acres County: Montgomery Watershed Size: 40.200 acres Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes Sourcourding Land Use: Agricultural, forested, and residential/commercal Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Primary Field Indicators Observed Primary Indicators 1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with 2.2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of inaturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precipi 301 micro as supporting evidence. In the absence of a primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perenywer graphs algered for Making Wight Biggs Department Making Resonance and starting the stream. The stream has lost of cobbie and gravel sorting from eachother. The intermittent stream Deverability thrologic Determination = Stream Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Site Location: located within a forested portion on the northern part of the project	area	
Previous Rainfall (7-days): In the previous seven days it rained 1.73 lighted Precipitation this Season vs. Normal: abnormally wet elevated average low abnormally drainwown Source of recent & seasonal precipidata; i. sink. and AHPS Watershed Size: 40.200 acres Soil Type(s) / Geology: Sengtown grawelly sitt loam, 12 to 20 percent slopes Surrounding Land Use: Agricultural, forested, and residential/commencat Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Slight Absent Primary Field Indicators Observed Primary Indicators I. Hydrologic feature exists solely due to a process discharge WWC 2. Defined bed and bank absent, vegetation composed of uplant and FACU species WWC 3. Watercourse dry anytime during February through April 15th, under normal precipitation of groundwater conditions NA WWC 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with 2 2 month aquatic phase 6. Presence of instrually occurring ground water table connection 7. Presence of instrually occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1* model watershed V Stream 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perennial of the premary of the primary of the primary of the stream has lost of cobble and gravel sorting from eachother. The intermittent stream Deverallity dropogic Determination = Stream Becondary Indicator Score (if ap	Previous Rainfall (7-days): In the previous seven days frained 1,73 ichae Precipitation this Season vs. Normal: abnormally wet elevated average low abnormally drynknown Source of recent & seasonal precipitation. Season vs. Normal: abnormally wet elevated average low abnormally drynknown Source of recent & seasonal precipitation. Seasonal precipitation of the previous seven days in the previous d		•	g: 36.552273°/
Precipitation this Season vs. Normal: abnormally wet elevated average low abnormally drynknown Source of recent & seasonal precipidata: 1 ESRL and AHPS Watershed Size: 40.200 acres Soil Type(s) / Geology: Sengtown gravelly slit loam, 12 to 20 percent slopps Surrounding Land Use: Agricultural, forested, and residential/commercal Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Slight Absent Primary Field Indicators Primary Field Indicators Observed Primary Indicators I. 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 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 7. Presence of in flower flower flows in cell ast precipical of dividence watercourse has been used as a supply of drinking water with the stream of the premise of	Precipitation this Season vs. Normal: abnormally wet elevated average low abnormally drynknown Source of recent is seasonal precipidata: 1 5981, and AMPS Watershed Size: 40.200 acres Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopps Surrounding Land Use: Agricultural, forested, and residential/commencer Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Slight Absent Primary Field Indicators Observed Primary Indicators I 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 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with \$\geq 2\$ month aquatic phase 6. Presence of instruelly occurring ground water table connection 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1* mycal watershed 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perentypelegonal and Secondary indicators is provided i			-87.244036°
Watershed Size: 140,200 acres Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes Surrounding Land Use: Agricultural, forested, and residential/commercal Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Slight Primary Field Indicators Observed 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 NA WWC 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of instructuring ground water table connection W Stream 8. Flowing water in channel and 7 days since last precip >0.1" Procedulates with the 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-The perentiple evidence in the primary indicator in the primary indicator is provided in TDEC-The perentiple evidence (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Watershed Size: 140,200 acres Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes Surrounding Land Use: Agricultural, forested, and residential/commercal Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Slight Absent Primary Field Indicators Observed Primary Indicators 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 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of naturally occurring ground water table connection W Stream 8. Flowing water in channel and 7 days since last precip >0.1" Proceal watershed Without 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-The perentiple elegans and scoring of both the primary & secondary indicators is provided in TDEC-The perentiple elegans and scoring of both the primary & secondary indicators is provided in TDEC-The perentiple elegans and scoring of both the primary & secondary indicators is provided in TDEC-The perentiple elegans and scoring of the tream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of		ha armallu d	manual (no.) vin
Soil Type(s) / Geology : Sengtown gravelly silt loam, 12 to 20 percent slopes Surrounding Land Use : Agricultural, forested, and residential/commercal Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate Slight Absent Primary Field Indicators Observed Primary Indicators 1. Hydrologic feature exists solely due to a process discharge WWC 2. Defined bed and bank absent, vegetation composed of uplant and FACU species WWC 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except *Gambusia*) 7. Presence of fish (except *Gambusia*) 8. Flowing water in channel and 7 days since last precip > 0.1" Proceed watershed Stream NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-The perentype etication and scoring of both the primary & secondary indicators is provided in *TDEC-The perentype etication and scoring of both the primary & secondary indicators is provided in *TDEC-The perentype etication and scoring of both the primary & secondary indicators is provided in *TDEC-The perentype etication and scoring of both the primary & secondary indicators is provided in *TDEC-The perentype etication and scoring of both the primary & secondary indicators is provided in *TDEC-The perentype etication and scoring of both the primary & secondary indicators is provided in *TDEC-The perentype eti	Soil Type(s) / Geology : Sengtown gravelly silt loam, 12 to 20 percent slopes Surrounding Land Use : Agricultural, forested, and residential/commercal Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate Slight Absent Primary Field Indicators Observed Primary Indicators 1. Hydrologic feature exists solely due to a process discharge WWC 2. Defined bed and bank absent, vegetation composed of uplant and FACU species WWC 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1° mycal watershed Stream 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perentyle of Canada and Starting the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overasility thrological Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	, ,		nknown
Soil type(s) / Geology : Sengtown gravelity stit loam, 12 to 20 percent stops Surrounding Land Use : Agricultural, forested, and residential/commentar Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate Slight Absent Primary Field Indicators Observed Primary Field Indicators Observed Primary Indicators WWC 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 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with 2 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of insturally occurring ground water table connection With Stream 8. Flowing water in channel and 7 days since last precip >0.1° model watershed With Stream 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The peremitable of cobbie and gravel sorting from eachother. The intermittent stream Overall Hydrologic Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Soil type(s) / Geology : Sengiown gravelity sit loam, 12 to 20 percent stops Surrounding Land Use : Agricultural, forested, and residential/commerical Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate Slight Absent Primary Field Indicators Observed Primary Indicators WWC 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 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" model watershed Stream 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC. The peremptive (Cambailed Fell Marine) Where interpretation and scoring from eachother. The intermittent stream Overall Hydrologic Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Watershed Size : 40,200 acres	: Montgome	7
Primary Field Indicators Primary Field Indicators Primary Field Indicators Primary Field Indicators NO YES 1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1° mocal watershed 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perennymbet camanates = 10 man provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perennymbet camanates = 10 man provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perennymbet camanates = 10 man provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perennymbet camanates = 10 man provide score below. Guidance for the interpretation = 2 man provide score below. Guidance for the interpretation = 2 man provide score below. This is a UNT to the Red River. Only a portion of the head of the stream starts in	Primary Field Indicators Observed Primary Field Indicators Observed Primary Field Indicators Observed Primary Field Indicators Observed Primary Indicators Observed Primary Indicators Observed Primary Indicators Observed Primary Indicators Observed 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 NA WWC 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall S. Presence of multiple populations of obligate lotic organisms with ≥ 2 month with a quatic phase 6. Presence of fish (except Gambusia) 7. Presence of fish (except Gambusia) 8. Flowing water in channel and 7 days since last precip >0.1° mocal watershed ✓ Stream 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perennyobetroamaied and scoring whome and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perennyobetroamaied and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perennyobetroamaied and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perennyobetroamaied and provide score below. Guidance for the interpretation and scoring whome and the stream starts in the project are	Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 per <mark>cent slop</mark> es	Sour	USDA: Web Soil Survey Ce:
Primary Field Indicators	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 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) ✓ Stream 7. Presence of fish (except Gambusia) ✓ Stream 8. Flowing water in channel and 7 days since last precip ≥0.1° mocal 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-The perennyabeticantalest eff most by Workership Decambination and starting the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overabli Hydrologim Determination = Stream Secondary Indicator Score (if applicable) = 27.5 This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Surrounding Land Use : Agricultural, forested, and residential/commerical		
Primary Indicators 1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except *Gambusia*) 7. Presence of fish (except *Gambusia*) 8. Flowing water in channel and 7 days since last precip ≥0.1" Have alwatershed 9. Evidence watercourse has been used as a supply of drinking water 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDECTIPE PROPRIMED FOR	Primary Indicators 1. Hydrologic feature exists solely due to a process discharge 2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with \$\geq 2\$ month aquatic phase 6. Presence of fish (except *Gambusia*) 7. Presence of fish (except *Gambusia*) 8. Flowing water in channel and 7 days since last precip >0.1" mocal watershed 9. Evidence watercourse has been used as a supply of drinking water 9. Evidence watercourse has been used as a supply of drinking water 1. In the absence of a primary indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. 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 *TDECTIPECTIPECTIPECTIPECTIPECTIPECTIPECTIP			lly in Notes) :
1. Hydrologic feature exists solely due to a process discharge	1. Hydrologic feature exists solely due to a process discharge	Primary Field Indicators Observed		0
1. Hydrologic feature exists solely due to a process discharge	1. Hydrologic feature exists solely due to a process discharge	Primary Indicators	NO	YES
2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precipi > 0.1" mocal watershed √ Stream 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC—The perentiable of page 1 manney with the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overallity trabeging Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	2. Defined bed and bank absent, vegetation composed of upland and FACU species 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precipi > 0.1" model watershed ✓ Stream 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC-The perentiable of mathing where the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overall inty direction and score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
## Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase ### Stream ### Str	precipitation / groundwater conditions 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 6. Presence of fish (except *Gambusia*) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip > 0.1" more allowed watershed with the stream of the		V	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms adjusted phase 6. Presence of fish (except *Gambusia*) 7. Presence of fish (except *Gambusia*) 8. Flowing water in channel and 7 days since last precip >0.1" in ocal watershed \$\forall \text{ Stream}\$ 9. Evidence watercourse has been used as a supply of drinking water \$\forall \text{ 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-The perentipal elegation for the last ream has lost of cobble and gravel sorting from eachother. The intermittent stream Overall Hydrologic Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	4. Daily flow and precipitation records showing feature only flows in direct response to rainfall 5. Presence of multiple populations of obligate lotic organisms adjusted phase 6. Presence of fish (except *Gambusia*) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" in ocal watershed \$\forall \text{ Stream}\$ 9. Evidence watercourse has been used as a supply of drinking water \$\forall \text{ 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-The perentiple translated for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-The perentiple translated for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-The perentiple translated for the interpretation and scoring from eachother. The intermittent stream Overall Hydrologic Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of		NA	WWC
5. Presence of multiple populations of obligate lotic organisms with 2 2 month aquatic phase 6. Presence of fish (except *Gambusia*) 7. Presence of naturally occurring ground water table connection 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" repeated watershed \$\frac{1}{2}\$ Stream 9. Evidence watercourse has been used as a supply of drinking water \$\frac{1}{2}\$ 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-The perential and *TD	5. Presence of multiple populations of obligate lotic organisms with \$\geq 2\$ month aquatic phase 6. Presence of fish (except *Gambusia*) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" repeated watershed \$\geq\$ Stream 9. Evidence watercourse has been used as a supply of drinking water \$\geq\$ 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-The perention of the primary of *Daylorg* indicators* is provided in *TDEC-The perention of the stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overabli *Hydrologic* Determination* = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	4. Daily flow and precipitation records showing feature only flows in direct response	NA	WWC
6. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" mocal watershed	6. Presence of fish (except Gambusia) 7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" mocal watershed	5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month	/	Stream
7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" mocal watershed	7. Presence of naturally occurring ground water table connection 8. Flowing water in channel and 7 days since last precip >0.1" mocal watershed 9. Evidence watercourse has been used as a supply of drinking water 9. Evidence watercourse has been used as a supply of drinking water NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDECThe perential and starting the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overallity the logic Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of		./	Stream
8. Flowing water in channel and 7 days since last precip >0.1" mocal watershed	8. Flowing water in channel and 7 days since last precip >0.1" mocal watershed	, , ,	1	
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. The perenty of provided in the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overalli Hydrologic Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	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-The perenty of provided in the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overalli Hydrologic Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of			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. Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in TDEC. The perenniabetroam starts of proving where it is to stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overallity dropogie Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	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. The perentiable companies of providing where is the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overallity dropegier Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of		✓	Stream
the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overalli Hydrologic Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream Overalli Hythrologic Determination = Stream Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	assessors may choose to score secondary indicators as support. In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator, or other definitive evidence, complete the secondary indicators as support.	ing evidenc	e. ator table
Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Secondary Indicator Score (if applicable) = 27.5 ustification / Notes: This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of			
ustification / Notes : This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	ustification / Notes : This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Overasli Mythrologio Determination = Stream		
This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Secondary Indicator Score (if applicable) = 27.5		
This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area. Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Justification / Notes :		
Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of	Bank width ranged from 4 to 6 feet. Bank height ranged from 1 to 3 feet. Water depth in the channel at the time of		oiect area.	
				el at the time of
,g	,g			
		-,g-= to		

A. Geomorphology (Subtotal = 14.5)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
Sorting of soil textures or other substrate	9	1	2	3
5. Active/relic floodplain	0	0.5	7	1.5
Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS				
or	No = 0		Yes	= 3
NRCS map				

B. Hydrology (Subtotal = 6)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	9	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	ð
17. Sediment on plants or on debris		0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1 .5
19. Hydric soils in channel bed or sides of channel	No:	= 0	Yes	= 1.5

C. Biology (Subtotal = 7)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	9	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{27.5}{}$
Under Normal Conditions, Watercourse is a Wet Weather
Conveyance if Secondary Indicator Score < 19 points

Notes: The perennial stream starts off project where groundwater is coming out of hillside and starting
the stream. The stream has lost of cobble and gravel sorting from eachother. The intermittent stream
flows into this perennial.

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT to Red River	Date/Time: 11/2/2021	
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID:	
Site Name/Description: S4	SR Clarksville	
Site Location: located within a forested portion on the northern part of the project	area	
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	Lat/Long: 36.551399° /	
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	01.E11000	
Precipitation this Season vs. Normal: abnormally wet elevated average low a Source of recent & seasonal precipidata: ESRL and AHPS	onormally dry unknown	
Watershed Size : 40,200 acres	Montgomery	
Soil Type(s) / Geology: Arrington silt loam, 0 to 2 percent slopes, occasionally flooded	USDA: Web Soil Survey Source:	
Surrounding Land Use : Agricultural, forested, and residential/commerical		
Degree of historical alteration to natural channel morphology & hydrology (circle one & Severe Moderate Slight	describe fully in Notes) : Absent	

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	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 = Stream
Secondary Indicator Score (if applicable) = 27
Justification / Notes :
This is a UNT to the Red River. Only a portion of the head of the stream starts in the project area.
Bank width ranges from 2 to 5 feet. Bank height ranged from 2 to 4 feet. There was approximatley 1 foot of water
in the channel at the time of the survey. The start of this stream was flowing out of a rock outcrop area.

Tennessee Division of Water Pollution Control, Version 1.5

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	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = WWC
Secondary Indicator Score (if applicable) = 12

Justification / Notes:

dotinoution/ Notes:
This WWC flows within a forested region. Bed and Bank disappears near the start and near the ending of the WWC
Bank height ranged from 0 inches to 12inches. Bank widht ranged from 1 to 2 feet. No water was in the channel at
the time of the survey.

A. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong	
Continuous bed and bank	0	1	2	3	
2. Sinuous channel	0	1	2	3	
3. In-channel structure: riffle-pool sequences	0	1	2	3	
Sorting of soil textures or other substrate	0	1	2	3	
5. Active/relic floodplain	0	0.5	1	1.5	
6. Depositional bars or benches	0	1	2	3	
7. Braided channel	0	1	2	3	
Recent alluvial deposits	0	0.5	1	1.5	
9. Natural levees	0	1	2	ત	
10. Headcuts	0	1	2	3	
11. Grade controls	0	0.5	1	1.5	
12. Natural valley or drainageway	0	0.5	1	1.5	
13. At least second order channel on existing USGS	No = 0 Yes				
or			Yes	= 3	
NRCS map					

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

C. Biology (Subtotal = 4)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	Э	1	2	3
23. Bivalves/mussels	g	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{12}{12}$
Under Normal Conditions, Watercourse is a Wet Weather
Conveyance if Secondary Indicator Score < 19 points

Notes:

5) This WWC lies within the floodplain of the Red River. 21) Grass species were growing at the end and
start of the channel.

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC	Date/Time: 11/2/2021
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID :
Site Name/Description: WWC 2, leads into the Red River	SR Clarksville
Site Location: located within a forested portion on the sourthern part of the project area	•
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	Lat/Long: 36.543155/
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	-87.235864
Precipitation this Season vs. Normal: abnormally wet elevated average low about Source of recent & seasonal precipidata: ESRL and AHPS	normally dry unknown
Watershed Size : 40,200 acres County: N	Montgomery
Soil Type(s) / Geology: Arrington silt loam, 0 to 2 percent slopes, occasionally flooded	USDA: Web Soil Survey Source:
Surrounding Land Use : Agricultural, forested, and residential/commerical	
Degree of historical alteration to natural channel morphology & hydrology (circle one & c Severe Moderate Slight A	lescribe fully in Notes) : bsent

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	V	WWC
Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = WWC
Secondary Indicator Score (if applicable) = 13.5
Justification / Notes :
This is a WWC that flows into the Red River, bank width ranges from 2 to 4 feet and bank height ranges from

6 inches to 5 feet. No water was in the channel at the time of the survey.

A. Geomorphology (Subtotal = 8.5)	Absent Weak Moderate Stro			Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits	0.5		1.5	
9. Natural levees	0 1 2		3	
10. Headcuts	0	1	2	3
11. Grade controls	0 0.5 1		1.5	
12. Natural valley or drainageway	0 0.5 1 1		1.5	
13. At least second order channel on existing USGS				
or	No:	= 0	Yes = 3	
NRCS map				

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

C. Biology (Subtotal = 4)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	9	1	2	3
23. Bivalves/mussels	9	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

¹ Focus is on the presence of terrestrial plants.

Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points	Total Points = $\frac{13.5}{1}$
	•

lotes :	 		

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC	Date/Time: 11/2/2021	
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID :	
Site Name/Description: WWC 3, leads into a UNT to the Red River	SR Clarksville	
Site Location: located within a forested portion on the sourthern part of the project area	•	
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	Lat/Long: 36.543155/	
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	-87.235864	
Precipitation this Season vs. Normal: abnormally wet elevated average low absource of recent & seasonal precipidata: ESRL and AHPS	normally dry unknown	
Watershed Size : 40,200 acres County: N	/lontgomery	
Soil Type(s) / Geology: Arrington silt loam, 0 to 2 percent slopes, occasionally flooded	USDA: Web Soil Survey Source:	
Surrounding Land Use : Agricultural, forested, and residential/commerical		
Degree of historical alteration to natural channel morphology & hydrology (circle one & c Severe Moderate Slight A	lescribe fully in Notes) : bsent	
	·	

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	V	WWC
Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = WWC	
Secondary Indicator Score (if applicable) = 12	

Justification / Notes:

Audition / 110100 i
This WWC flows into a UNT of the Red River. Bank width ranged from 1 to 2 feet. Bank height ranged from 6 inche
to 1 foot. No water was found within the channel at the time of the survey. This WWC starts in an agricultural
corn field before leading into a wooded area and into the UNT to the Red River.

A. Geomorphology (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits		0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS	No = 0 Yes = 3			
or			Yes	= 3
NRCS map				

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

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

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{12}{12}$
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

otes: 5) this WWC lies within the Red River floodplain	

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC	Date/Time: 11/2/2021				
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID :				
Site Name/Description: WWC 4	SR Clarksville				
Site Location: located within a forested portion on the sourthern part of the project area	·				
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	Lat/Long: 36.542919/				
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	-87.235644				
Precipitation this Season vs. Normal: abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precipidata: ESRL and AHPS					
Watershed Size : 40,200 acres County	: Montgomery				
Soil Type(s) / Geology: Arrington silt loam, 0 to 2 percent slopes, occasionally flooded Source:					
Surrounding Land Use : Agricultural, forested, and residential/commerical					
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in No Severe Moderate Slight Absent					

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	V	WWC
Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 = WWC
Secondary Indicator Score (if applicable) = 10.5
Justification / Notes :
This wwc flows from the wooded hillside down into wetland 4. Bank height ranged from 6 inches to 1 foot.
Bank width ranged from 1 to 2 feet. No water was onserved within the channel at the time of the survey.

A. Geomorphology (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	_1_	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS	No = 0 Yes = 3			
or			Yes	= 3
NRCS map				

B. Hydrology (Subtotal = 0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	Ο	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	9	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No :	=)	Yes =	= 1.5

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

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{10.5}{}$
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC	Date/Time: 11/2/2021		
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID :		
Site Name/Description: WWC 5, erosional hillside feature		SR Clarksville	
Site Location: located within a forested portion on the sourthern part of the project area	a		
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)		Lat/Long:	
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	36.543174/-87.235875		
Precipitation this Season vs. Normal: abnormally wet elevated average Source of recent & seasonal precipidata: ESRL and AHPS	low abn	ormally dry unknown	
Watershed Size : 40,200 acres	ontgomery		
Soil Type(s) / Geology: Arrington silt loam, 0 to 2 percent slopes, occasionally	/ flooded	USDA: Web Soil Survey Source:	
Surrounding Land Use : Agricultural, forested, and residential/commerical			
Degree of historical alteration to natural channel morphology & hydrology (circ Severe Moderate Slight		escribe fully in Notes) : osent	

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	V	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 = WWC
Secondary Indicator Score (if applicable) = 8
Justification / Notes :
This wwc flows from the wooded hillside down into wetland 4. Bank height ranged from 6 inches to 1 foot.
Bank width ranged from 1 to 2 feet. No water was onserved within the channel at the time of the survey.

A. Geomorphology (Subtotal = 6)	Abs	sent	Weak	Moderate	Strong
Continuous bed and bank)	1	2	3
2. Sinuous channel)	1	2	3
3. In-channel structure: riffle-pool sequences)	1	2	3
Sorting of soil textures or other substrate)	1	2	3
5. Active/relic floodplain)	0.5	1	1.5
Depositional bars or benches)	1	2	3
7. Braided channel)	1	2	3
Recent alluvial deposits)	0.5	1	1.5
9. Natural levees			1	2	3
10. Headcuts	()		2	3
11. Grade controls)	0.5	1	1.5
12. Natural valley or drainageway)	0.5	1	1.5
13. At least second order channel on existing USGS					
or		No	= 0	Yes	= 3
NRCS map					

B. Hydrology (Subtotal = 0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	Ω	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	9	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No :	=)	Yes =	: 1.5

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

¹ Focus is on the presence of terrestrial plants.

Total Points = 8
Under Normal Conditions, Watercourse is a Wet Weather
Conveyance if Secondary Indicator Score < 19 points

Notes: 5) this WWC is within the Red River floodplain. 10) one smaller headcut starts this WWC
21). Grass species are growing throughout the stream channel

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC	Date/Time: 11/2/2021	
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID :	
Site Name/Description: WWC 6, erosional hillside feature	SR Clarksville	
Site Location: located within a forested portion on the sourthern part of the project area		
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	Lat/Long:	
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	36.543245/-87.235621	
Precipitation this Season vs. Normal: abnormally wet elevated average low at Source of recent & seasonal precipidata: ESRL and AHPS	normally dry unknown	
Watershed Size : 40,200 acres County:	Montgomery	
Soil Type(s) / Geology: Arrington silt loam, 0 to 2 percent slopes, occasionally flooded	USDA: Web Soil Survey Source:	
Surrounding Land Use : Agricultural, forested, and residential/commerical		
Degree of historical alteration to natural channel morphology & hydrology (circle one & Severe Moderate Slight	describe fully in Notes) : Absent	
	·	

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	V	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 = WWC
Secondary Indicator Score (if applicable) = 8
Justification / Notes :
This wwc flows from the wooded hillside down into wetland 4. Bank height ranged from 6 inches to 1 foot.
Bank width ranged from 1 to 2 feet. No water was onserved within the channel at the time of the survey.

A. Geomorphology (Subtotal = 6)	Abs	sent	Weak	Moderate	Strong
Continuous bed and bank)	1	2	3
2. Sinuous channel)	1	2	3
3. In-channel structure: riffle-pool sequences)	1	2	3
Sorting of soil textures or other substrate)	1	2	3
5. Active/relic floodplain)	0.5	1	1.5
Depositional bars or benches)	1	2	3
7. Braided channel)	1	2	3
Recent alluvial deposits)	0.5	1	1.5
9. Natural levees			1	2	3
10. Headcuts	()		2	3
11. Grade controls)	0.5	1	1.5
12. Natural valley or drainageway)	0.5	1	1.5
13. At least second order channel on existing USGS	No = 0 Yes =				
or			= 3		
NRCS map					

B. Hydrology (Subtotal = 0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	Ω	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	9	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No :	=)	Yes =	: 1.5

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

¹ Focus is on the presence of terrestrial plants.

Total Points = 8
Under Normal Conditions, Watercourse is a Wet Weather
Conveyance if Secondary Indicator Score < 19 points

Notes: 5) this WWC is within the Red River floodplain. 10) one smaller headcut starts this WWC					
21). Grass species are growing throughout the stream channel					

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC		Date/Time: 11/2/2021		
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID :			
Site Name/Description: WWC 7, erosional hillside feature that flows down into	SR Clarksville			
Site Location: located within a forested portion on the sourthern part of the project area	a			
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)		Lat/Long:		
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches		36.543245/-87.235621		
Precipitation this Season vs. Normal: abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precipidata: ESRL and AHPS				
Watershed Size : 40,200 acres	ontgomery			
Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes Source:				
Surrounding Land Use : Agricultural, forested, and residential/commerical				
Degree of historical alteration to natural channel morphology & hydrology (circ Severe Moderate Slight	escribe fully in Notes) : osent			

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	V	WWC
Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 = WWC	
Secondary Indicator Score (if applicable) = 5	
Justification / Notes :	
This WWC flows from forested hillside down into WWC8 which then flows down into a sinkhole.	
Bank height ranged from 0 inches to 1 foot. Bank width ranged from 1 to 2 feet. No water was in the channel	
at the time of the survey.	

A. Geomorphology (Subtotal = 4)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0		2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS	No = 0 Yes =			
or			Yes	= 3
NRCS map				

B. Hydrology (Subtotal = 0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	Ω	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	9	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No :	=)	Yes =	: 1.5

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

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{5}{}$

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.

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC		Date/Time: 11/2/2021	
Assessors/Affiliation: HDR INC/ Lyranda Thiem		Project ID :	
Site Name/Description: WWC 8, erosional hillside feature that flows down into a	a sinkhole	SR Clarksville	
Site Location: located within a forested portion on the sourthern part of the project area	3		
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)		Lat/Long:	
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches		36.547347/-87.234004	
Precipitation this Season vs. Normal: abnormally wet elevated average Source of recent & seasonal precip data: ESRL and AHPS	ormally dry unknown		
Watershed Size : 40,200 acres	County: M	ontgomery	
Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes		USDA: Web Soil Survey Source:	
Surrounding Land Use : Agricultural, forested, and residential/commerical			
Degree of historical alteration to natural channel morphology & hydrology (circ Severe Moderate Slight		escribe fully in Notes) : osent	

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	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 = WWC	
Secondary Indicator Score (if applicable) = 8.5	

. 1	ust	ifi	cat	tio	n /	N	O t	29	•
u	usi		-ca	uv	,,,,	14	Vι	CO.	

ustification / Notes :
This WWC flows from an agricultural corn field down through a decidous wooded area and finally ending up
flowing into a sinkhole. Bank width ranged from 3 to 4 feet. Bank height ranged from 2 to 4 feet high. No water
was observed within the channel at the time of the survey

A. Geomorphology (Subtotal = 6.5)		osen	t	Weak	Moderate	Strong
Continuous bed and bank	0		1	2	3	
2. Sinuous channel		0		1	2	3
3. In-channel structure: riffle-pool sequences		0		1	2	3
Sorting of soil textures or other substrate		0		1	2	3
5. Active/relic floodplain		0		0.5	1	1.5
6. Depositional bars or benches		0		1	2	3
7. Braided channel		0		1	2	3
Recent alluvial deposits		0		0.5	1	1.5
9. Natural levees		0		1	2	3
10. Headcuts		0		1	2	3
11. Grade controls		0		0.5	1	1.5
12. Natural valley or drainageway		0		0.5	1	1.5
13. At least second order channel on existing USGS						
or		No = 0		= 0	Yes	= 3
NRCS map						

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

C. Biology (Subtotal = 2)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	E	0
22. Crayfish in stream (exclude in floodplain)	9	1) N	3
23. Bivalves/mussels	О	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{8.5}{}$
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes : 21) some grass species were growing at the start and end of this channel.						
		-				

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC	Date/Time: 11/2/202	21				
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID :					
Site Name/Description: WWC 9, erosional hillside feature	SR Clarksville					
Site Location: located within a forested portion on the sourthern part of the project area	ea .					
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	Lat/Long:					
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	36.546693/-87.235845	36.546693/-87.235845				
Precipitation this Season vs. Normal: abnormally wet elevated average Source of recent & seasonal precipidata: ESRL and AHPS	low abnormally dry unknow	/n				
Watershed Size : 40,200 acres	County: Montgomery					
Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes	USDA: Web Soil S Source:	urvey				
Surrounding Land Use : Agricultural, forested, and residential/commerical						
Degree of historical alteration to natural channel morphology & hydrology (circ Severe Moderate Slight	cle one & describe fully in Notes) Absent	1:				

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	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 = WWC	
Secondary Indicator Score (if applicable) = 6.5	

Justification / Notes :
This WWC is a erosional hillside feature. Bank height ranges from 6 inches to 12 inches. Bank width ranges from
1 to 2 feet. No water was found within the channel during the time of the survey

A. Geomorphology (Subtotal = 4.5)	Α	Absent Wea			Moderate	Strong
Continuous bed and bank		0		1	2	3
2. Sinuous channel		0		1	2	3
3. In-channel structure: riffle-pool sequences		0		1	2	3
Sorting of soil textures or other substrate		0		1	2	3
5. Active/relic floodplain		0		0.5	1	1.5
6. Depositional bars or benches		0		1	2	3
7. Braided channel		0		1	2	3
Recent alluvial deposits				0.5	1	1.5
9. Natural levees		0		1	2	3
10. Headcuts		0 1		1	2	3
11. Grade controls		0 0.5		0.5	1	1.5
12. Natural valley or drainageway		0 0.5		1	1.5	
13. At least second order channel on existing USGS						
or		No = 0		Yes	= 3	
NRCS map						

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

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

¹ Focus is on the presence of terrestrial plants.

Total Points = 6.5
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

tes: 21) som	e grass spec	ies were g	rowing at 1	ine start an	a ena ot thi	s channel.	

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC	Date/Time: 11/2/2021					
Assessors/Affiliation: HDR INC/ Lyranda Thiem		Project ID:				
Site Name/Description: WWC 10, erosional hillside feature that flows down into	a sinkhole	SR Clarksville				
Site Location: located within a forested portion on the sourthern part of the project area	a					
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	Lat/Long:					
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	36.548046 /-87.236207					
Precipitation this Season vs. Normal: abnormally wet elevated average Source of recent & seasonal precip data: ESRL and AHPS	low abn	ormally dry unknown				
Watershed Size : 40,200 acres	ontgomery					
Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes	USDA: Web Soil Survey Source:					
Surrounding Land Use : Agricultural, forested, and residential/commerical						
Degree of historical alteration to natural channel morphology & hydrology (circles Severe Moderate Slight	escribe fully in Notes) : osent					

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	V	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 = WWC	
Secondary Indicator Score (if applicable) = 12.5	

Justification / Notes :
This WWC flows from agricultural corn field down through a wooded area and finally flows into a sinkhole.
Bank height ranges from 4 to 6 feet. Bank width ranges from 6 to 8 feet wide. No water was withing the channel at
the time of the survey.

A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS				
or	No = 0		Yes	= 3
NRCS map				

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

C. Biology (Subtotal = 4)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	Ь	1	2	3
23. Bivalves/mussels	О	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

¹ Focus is on the presence of terrestrial plants.

Total Points = 12.5
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes: 4) sorting o	of gravel from silt.		

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC		Date/Time: 11/2/2021
Assessors/Affiliation: HDR INC/ Lyranda Thiem		Project ID:
Site Name/Description: WWC 11, hillside erosional feature flows into WWC10 and then down into a sinkhole	SR Clarksville	
Site Location: located within a forested portion on the eastern part of the project area		
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)		Lat/Long:
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches		36.548443/-87.237724
Precipitation this Season vs. Normal: abnormally wet elevated average Source of recent & seasonal precipidata: ESRL and AHPS	low abno	ormally dry unknown
Watershed Size : 40,200 acres	County: Mo	0 ,
Soil Type(s) / Geology : Sengtown gravelly silt loam, 12 to 20 percent slopes		USDA: Web Soil Survey Source:
Surrounding Land Use : Agricultural, forested, and residential/commerical		
Degree of historical alteration to natural channel morphology & hydrology (circ Severe Moderate Slight		escribe fully in Notes) : sent

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	<u> </u>	WWC
Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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-WPC Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = WWC	
Secondary Indicator Score (if applicable) = 13.5	

Justification / Notes:

This WWC starts within an agricultural corn field and then flows into WWC10 which flows into a sinkhole.

Bank height ranges from 4 to 6 feet. Bank width ranges from 6 to 8 feet wide. No water was withing the channel at the time of the survey.

Note: The start of the WWC has been used as a dumping site.

A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
In-channel structure: riffle-pool sequences	0	1	2	3
Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1_	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS				
or	No = 0		Yes	= 3
NRCS map				

B. Hydrology (Subtotal = 1)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	Ο	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	9	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No =)		Yes = 1.5	

C. Biology (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	6	1	2	3
23. Bivalves/mussels	Ь	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

¹ Focus is on the presence of terrestrial plants.

Total Points = 13.5
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

lotes: 4) sorting of grave	el from silt.		

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC	D	ate/Time: 11/2/2021	
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Р	Project ID :	
Site Name/Description: WWC 12, Flows from corn field down through wooded a	area	SR Clarksville	
Site Location: located within a forested portion on the western part of the project area			
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	L	at/Long:	
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	36	36.547892/-87.239503	
Precipitation this Season vs. Normal: abnormally wet elevated average Source of recent & seasonal precipidata: ESRL and AHPS	low abnorr	nally dry unknown	
Watershed Size : 40,200 acres	County: Mon	tgomery	
Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes		USDA: Web Soil Survey Source:	
Surrounding Land Use : Agricultural, forested, and residential/commerical			
Degree of historical alteration to natural channel morphology & hydrology (circ Severe Moderate Slight	ele one & desc Abse	•	

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	V	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 = WWC
Secondary Indicator Score (if applicable) = 15
Justification / Notes :

Justification / Notes :
This WWC starts at an agricultural corn field and flows down through mixed deciduous forest.
Bank height ranges from 4 to 6 feet. Bank width ranges from 3 to 5 feet wide. No water was withing the channel at
the time of the survey.

A. Geomorphology (Subtotal = 11)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1_	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS				
or	No = 0 Yes = 3		= 3	
NRCS map				

B. Hydrology (Subtotal = 0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	9	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No:	=	Yes =	= 1.5

C. Biology (Subtotal = 4)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	Ь	1	2	3
23. Bivalves/mussels	О	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

¹ Focus is on the presence of terrestrial plants.

Total Points = 15
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

es:4) sorting	n graver from	ont. Ocotions	OI TIIIO STICAL	ii dio licavily	Orodou.	_
						—

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC		Date/Time: 11/2/2021	
Assessors/Affiliation: HDR INC/ Lyranda Thiem		Project ID :	
Site Name/Description: WWC 13, Flows from corn field down through wooded a	area	SR Clarksville	
Site Location: located within a forested portion on the western part of the project area			
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)		Lat/Long:	
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches		36.547892/-87.239503	
Precipitation this Season vs. Normal: abnormally wet elevated average Source of recent & seasonal precip data: ESRL and AHPS	low abn	ormally dry unknown	
Watershed Size : 40,200 acres	County: M	ontgomery	
Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes		USDA: Web Soil Survey	
Surrounding Land Use : Agricultural, forested, and residential/commerical			
Degree of historical alteration to natural channel morphology & hydrology (circles Severe Moderate Slight		escribe fully in Notes) : osent	

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	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = WWC	
Secondary Indicator Score (if applicable) = 10.5	

Justification / Notes:

This WWC starts at an agricultural corn field and flows down through mixed deciduous forest.
Bank height ranges from 6 inches to 1 foot. Bank width ranges from 1 to 3 feet wide. No water was withing the channel at
the time of the survey.
The second half of this stream has been altered to have a concrete bottom

A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	J	1	2	3
3. In-channel structure: riffle-pool sequences	5	1	2	3
Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits	Р	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS				
or	No :	= 0	Yes	= 3
NRCS map				

B. Hydrology (Subtotal = 0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	Ω	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	9	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No =		Yes = 1.5	

C. Biology (Subtotal = 3)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	9	1	2	3
23. Bivalves/mussels	q	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{10.5}{10.5}$
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

Notes : 4) sorting of gravel from silt	t.		

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC		Date/Time: 11/2/2021	
Assessors/Affiliation: HDR INC/ Lyranda Thiem		Project ID :	
Site Name/Description: WWC 14, eroisional feature within a corn field		SR Clarksville	
Site Location: located within a forested portion on the northern part of the project area			
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)		Lat/Long:	
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches		36.548930/-87.242115	
Precipitation this Season vs. Normal: abnormally wet elevated average Source of recent & seasonal precipidata: ESRL and AHPS	low abno	ormally dry unknown	
Watershed Size : 40,200 acres	County: Mo		
Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes		USDA: Web Soil Survey Source:	
Surrounding Land Use : Agricultural, forested, and residential/commerical			
Degree of historical alteration to natural channel morphology & hydrology (circ Severe Moderate Slight		escribe fully in Notes) : sent	

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	V	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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 = WWC	
Secondary Indicator Score (if applicable) = 9.5	
Justification / Notes :	
This WWC is a corn field erosional feature and leads into WWC 13.	
Bank height ranges from 6 inches to 1 foot. Bank width ranges from 1 to 2 feet wide. No water was withing the chan	inel at
the time of the current	

A. Geomorphology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
Continuous bed and bank	0	1	2	3
2. Sinuous channel	}	1	2	3
3. In-channel structure: riffle-pool sequences	О	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits	Ы	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS				
or	No :	= 0	Yes	= 3
NRCS map				

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

C. Biology (Subtotal = 3)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	9	1	2	3
23. Bivalves/mussels	q	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

¹ Focus is on the presence of terrestrial plants.

Total Points = $\frac{9.5}{}$
Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points

otes: 4) sorting o	graver nom si	11.		

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC	Date/Time: 11/2/2021
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project ID :
Site Name/Description: WWC 15, eroisional hillside feature	SR Clarksville
Site Location: located within a forested portion on the northern part of the project area	
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (051302060708)	Lat/Long:
Previous Rainfall (7-days): In the previous seven days it rained 1.73 inches	36.549995/-87.243727
Precipitation this Season vs. Normal: abnormally wet elevated average Source of recent & seasonal precipidata: ESRL and AHPS	low abnormally dry unknown
Watershed Size : 40,200 acres	County: Montgomery
Soil Type(s) / Geology: Sengtown gravelly silt loam, 12 to 20 percent slopes	USDA: Web Soil Survey Source:
Surrounding Land Use : Agricultural, forested, and residential/commerical	
Degree of historical alteration to natural channel morphology & hydrology (circ Severe Moderate Slight	cle one & describe fully in Notes) : Absent

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	NA	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	NA	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	✓	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.

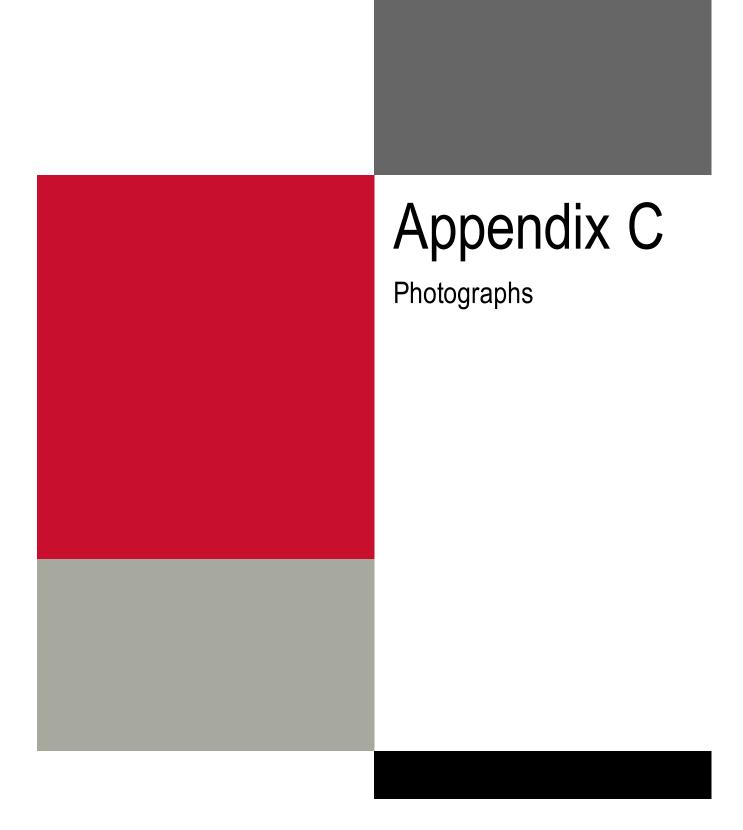
Overall Hydrologic Determination = WWC
Secondary Indicator Score (if applicable) =
ustification / Notes :
This is an erosional WWC that flows within a forest.
Bank width ranged from 1 to 2 feet. No water was observed within the channel at the time of the survey.

Tennessee Division of Water Pollution Control, Version 1.5

Total Cooco Division of Water Foliation Control, Volcien	1.0	
Named Waterbody: WWC	Date/Ti	ime: 11/2/2021
Assessors/Affiliation: HDR INC/ Lyranda Thiem	Project	
Site Name/Description: WWC 16, hillside WWC that flows into Stream 4	SR C	Clarksville
Site Location: located within a forested portion on the northern part of the project area		
HUC (12 digit): Red River (Hydrologic Unit Code [HUC] (0513020607	Lat/Lon	ng:
Previous Rainfall (7-days): In the previous seven days it rained 1.73 in the	36.54893	30/-87.242115
Precipitation this Season vs. Normal: abnormally wet elevated average low a Source of recent & seasonal precipidata: ESRL and AHPS	bnormally o	dry unknown
Watershed Size : 40,200 acres	: Montgome	∍ry
Soil Type(s) / Geology : Sengtown gravelly silt loam, 12 to 20 percent slopes	Sou	USDA: Web Soil Survey
Surrounding Land Use : Agricultural, forested, and residential/commerical		
Degree of historical alteration to natural channel morphology & hydrology (circle one & Severe 1.5 Moderate Slight	& describe fo Absent	ully 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
Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	NA	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	□ _{NA}	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except <i>Gambusia</i>)	/	Stream
7. Presence of naturally occurring ground water table connection	· /	Stream
8. Flowing water in channel and 7 days since last precip >0.1" ir cal 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 assessors may choose to score secondary indicators as support. In the absence of a primary indicator, or other definitive evidence, complete the secondary and provide score below. Guidance for the interpretation and scoring of both the primary & secondary indicators.	ing evidend ondary indic	ce. cator table
WPC Guidance For Making Hydrologic Determinations, Version 1		
Overall Hydrologic Determination = WWC		
Secondary Indicator Score (if applicable) = 15.5		
Justification / Notes :		
This is an erosional WWC that flows within a forest down into stream 4		
Bank width ranged from 3 to 5 feet. Bank height ranges from 4 to 6 feet No water was at the time of the survey.	observed wi	ithin the channe

November 2021 Mobilization			
	1 st Month Prior	2 nd Month prior	3 rd Month Prior
Criteria- values are in inches	October- 21	September- 21	August-21
Standard Deviation	1.56	1.97	2.02
Minus 1 Std. Deviation	1.26	1.22	1.28
Normal Precipitation	2.82	3.19	3.30
Plus 1 Std. Deviation	4.38	5.16	5.32
Actual Estimated Rainfall	6.0	3.0	8.0
Condition (elevated, low, average)	Elevated	Average	Elevated
Conditional Score	3	2	3
Weight	3	2	1
Product	9	4	3
		Sum=	16
Overall Wetness*			Elevated



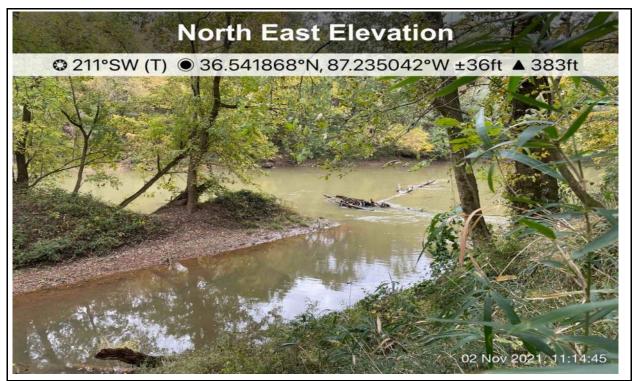




Photograph 1- Stream 1 Intermittent, facing south and downstream.



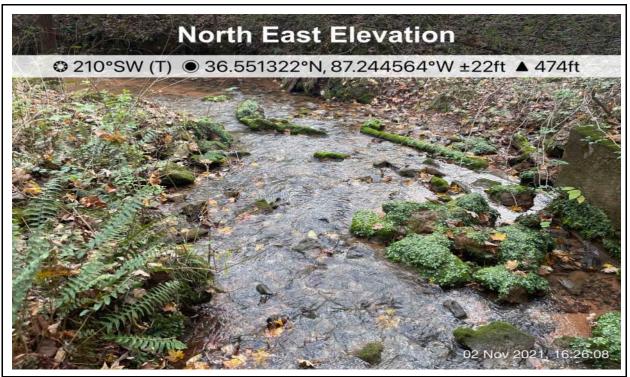
Photograph 2- Stream 1 facing southwest and upstream.



Photograph 3- Stream 2 Red River, facing northeast and downstream.



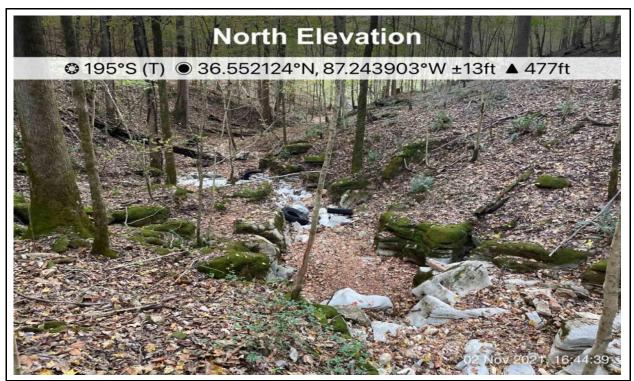
Photograph 4- Stream 2 Red River, facing northeast and upstream.



Photograph 5- Stream 3 Perennial UNT to Red River, facing northeast and downstream.



Photograph 6- Stream 3 Perennial UNT to Red River facing southeast and upstream.



Photograph 7- Stream 4 Intermittent facing north and downstream.



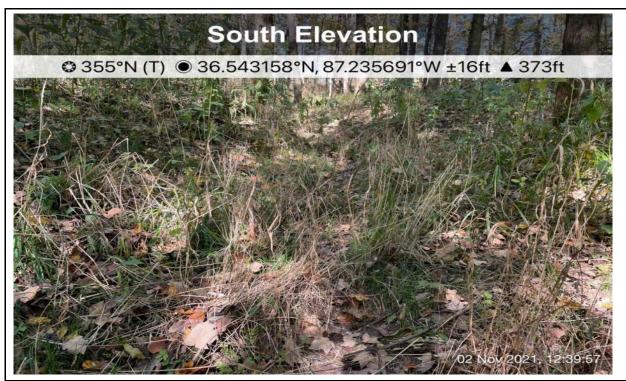
Photograph 8- Stream 4 Intermittent facing southwest and upstream



Photograph 9- WWC 4, facing south and upstream.



Photograph 10- WWC 4, facing south and upstream.



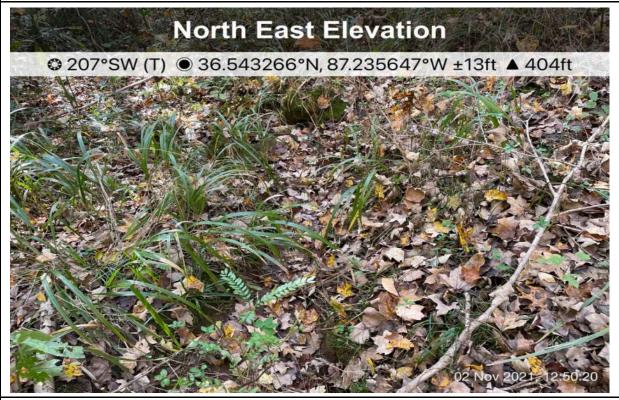
Photograph 11- WWC 5, facing south and upstream.



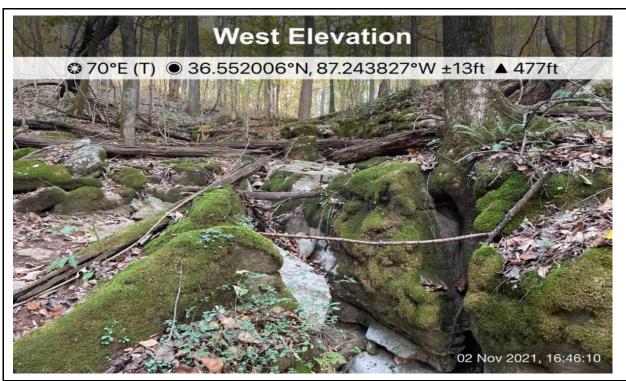
Photograph 12- WWC 5, facing north and downstream.



Photograph 13- WWC 6, facing south and upstream.



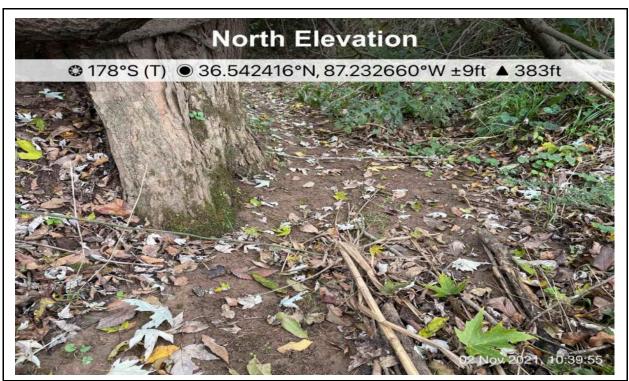
Photograph 14- WWC 6, facing northeast and downstream.



Photograph 15- WWC 16, facing west and upstream.



Photograph 16- WWC 16, facing northeast and downstream.



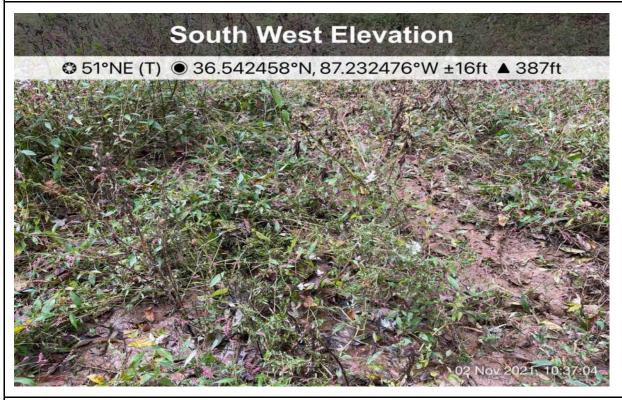
Photograph 17- WWC 2, facing north and downstream.



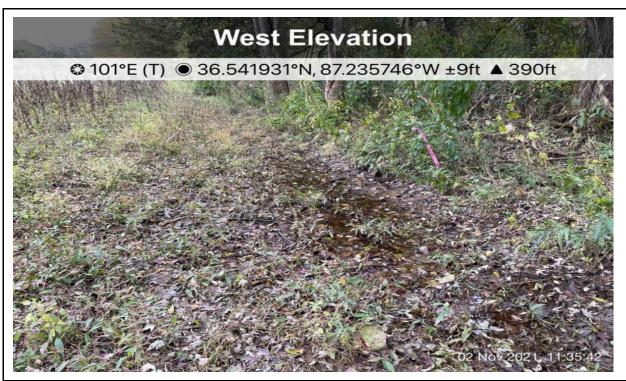
Photograph 19- WWC 2, facing northwest and upstream.



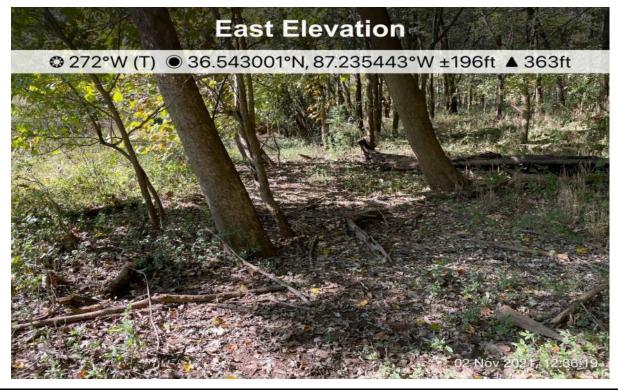
Photograph 20- Wetland 1 PEM, facing east.



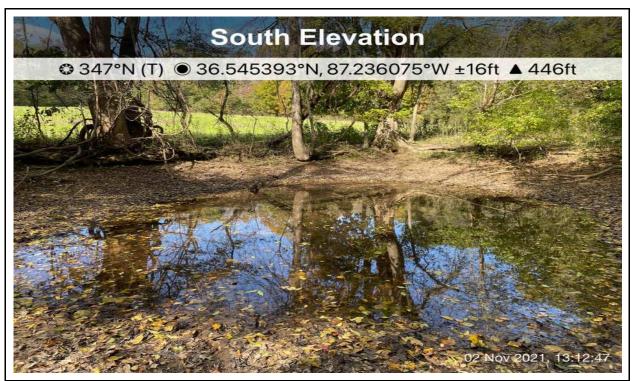
Photograph 21- Wetland 2 PEM southwest.



Photograph 22- Wetland 3 PEM, facing west.



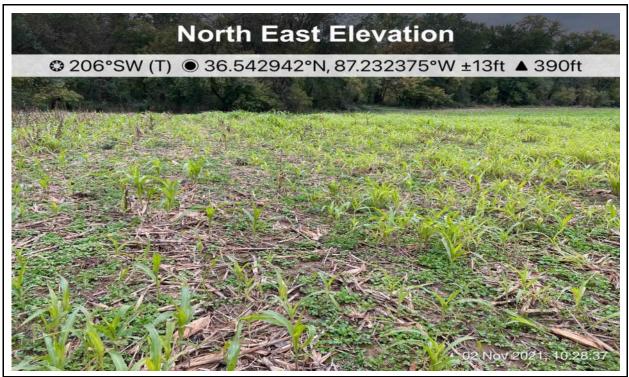
Photograph 23- Wetland 4 PFO, facing east.



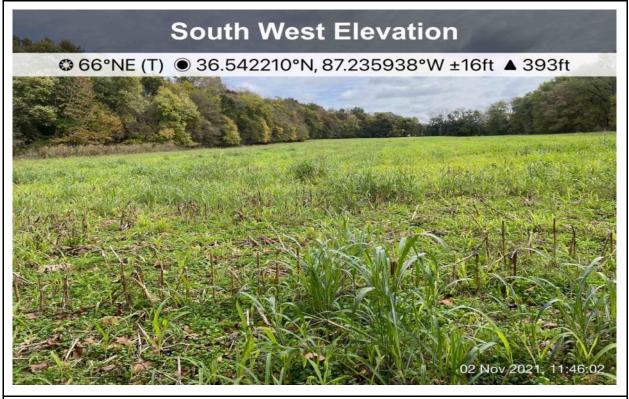
Photograph 24- Wetland 5 PFO, facing south.



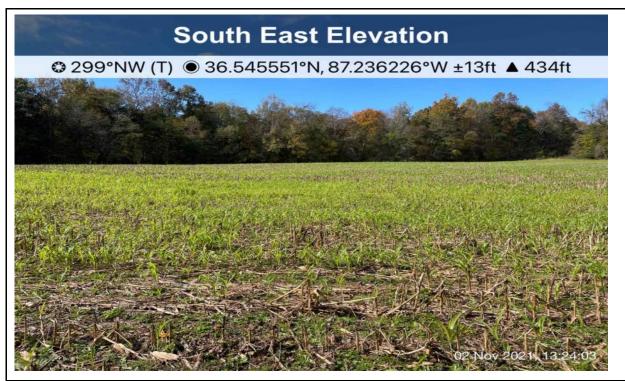
Photograph 25- Wetland 6 PEM, facing east.



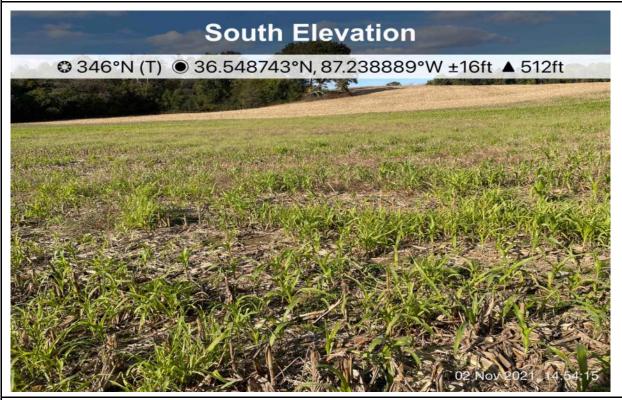
Photograph 26- Upland 1(DP1), facing north.



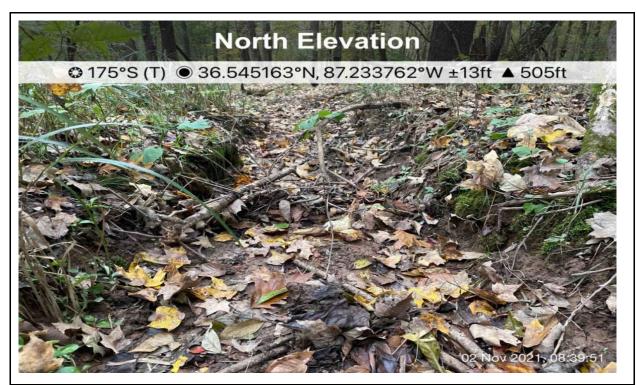
Photograph 27- Upland 2 (DP3), facing southwest.



Photograph 28- Upland 3 (DP6), facing southeast.



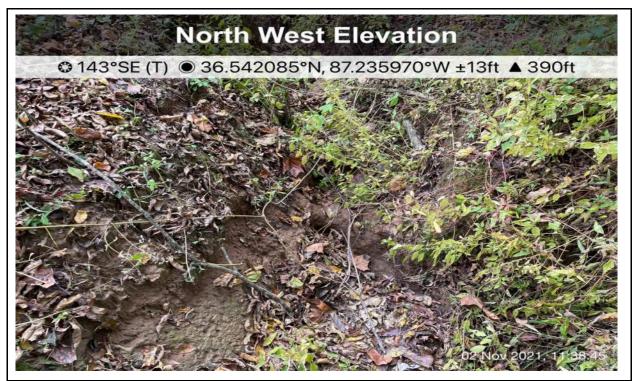
Photograph 29- Upland 4 (DP9), facing south.



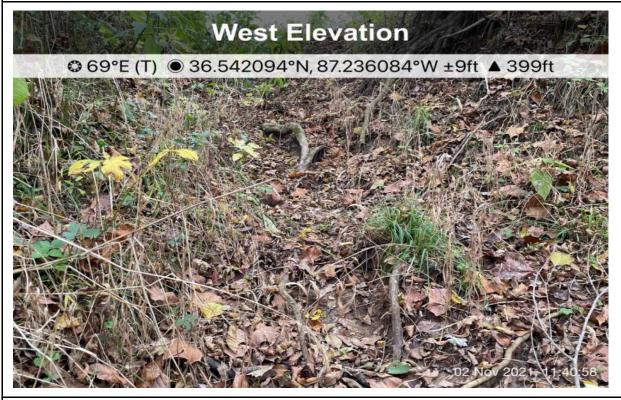
Photograph 30- WWC 1, facing north and downstream.



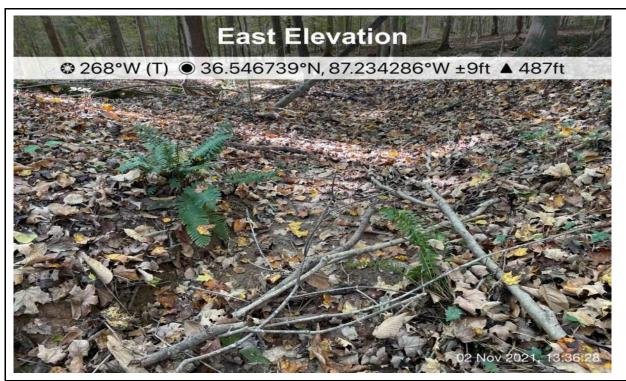
Photograph 31- WWC 1, facing southeast and upstream.



Photograph 32- WWC 3, facing northwest and downstream.



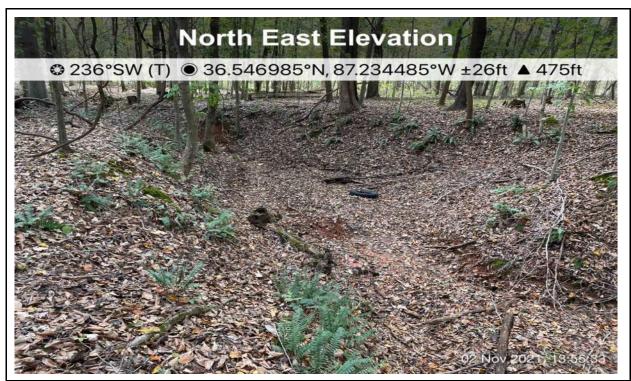
Photograph 33- WWC 3, facing west and upstream.



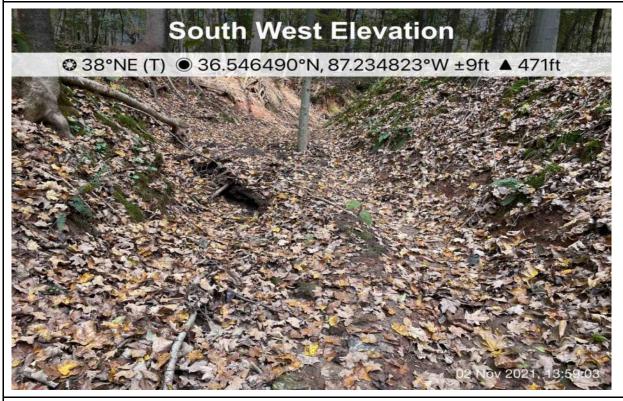
Photograph 34- WWC 7, facing east and downstream.



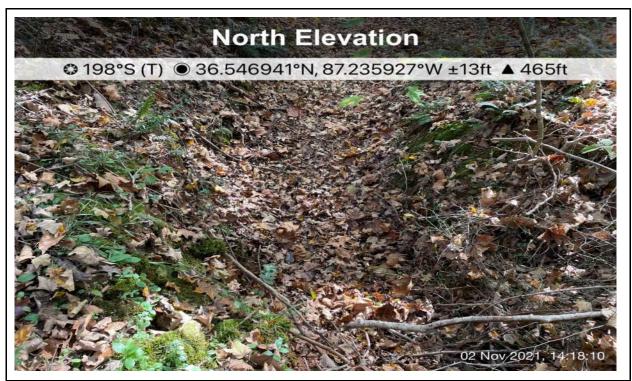
Photograph 35- WWC 7, facing southwest and upstream.



Photograph 35- WWC 8, facing northeast and downstream.



Photograph 36- WWC 8, facing southwest and upstream.



Photograph 37- WWC 9, facing north and downstream.



Photograph 38- WWC 9, facing south and upstream.



Photograph 39- WWC 10, facing north and upstream.



Photograph 40- WWC 10, facing west and downstream.



Photograph 41- WWC 11, facing southeast and upstream.



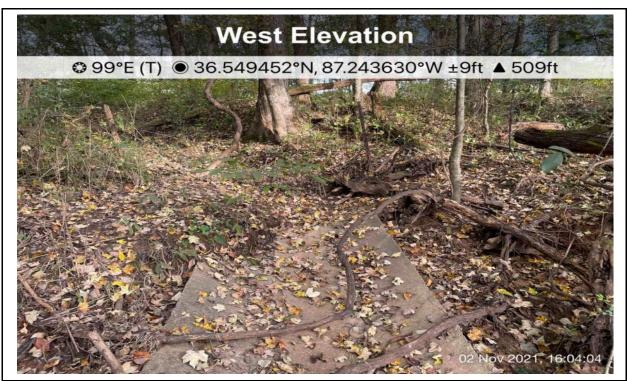
Photograph 42- WWC 12, facing northwest and downstream.



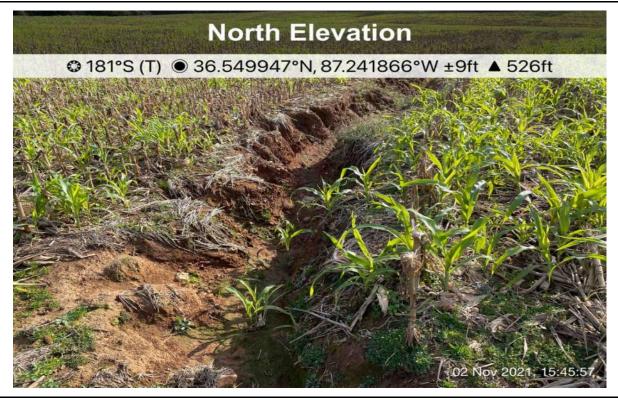
Photograph 43- WWC 12, facing south and upstream.



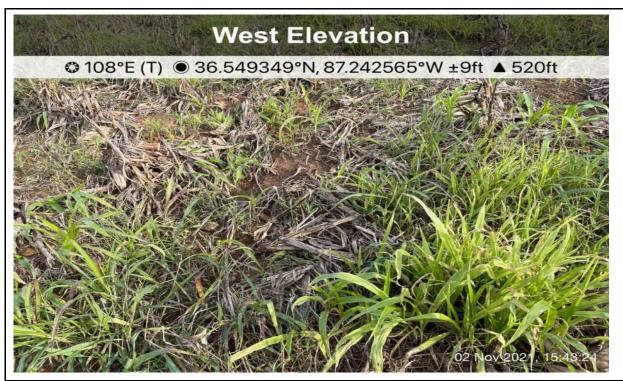
Photograph 44- WWC 13, facing southeast and downstream.



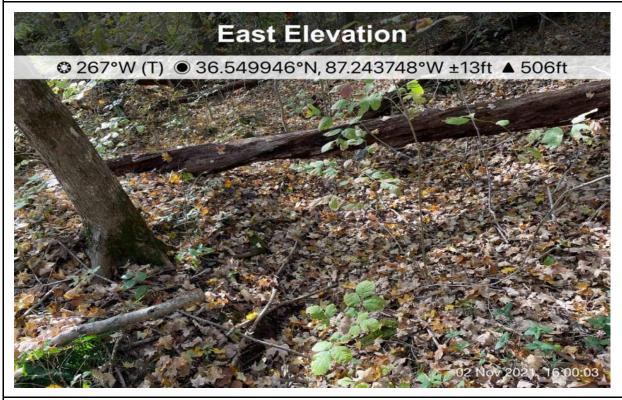
Photograph 45- WWC 13, facing west and upstream.



Photograph 46-WWC 14, facing north and downstream.



Photograph 47- WWC 14, facing west and upstream.



Photograph 48- WWC 15, facing east and downstream.



Photograph 49- WWC 15, facing east and upstream.