3/25/2022

Ms. Shari Winburn,
TDEC-Division of Water Resources
Knoxville Environmental Field Office
3711 Middlebrook Pike
Knoxville, Tennessee 37921
Shari.Winburn@tn.gov

Subject: **SR Maryville East**
Hydrologic Determination Request
Blount County, Tennessee

Ms. Winburn,

A subsidiary of Silicon Ranch Corporation (SRC), SR Maryville East, LLC intends to develop a site within Blount County, near Maryville, Tennessee as a photovoltaic (PV) solar power generating facility. The SR Maryville East site ("Project Site") includes approximately 127 acres bordered by Sevierville Road on the southeastern border and sits east of Maryville, Tennessee in Blount County (Appendix A, Figures 1 and 2). On behalf of its subsidiary SR Maryville East, 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	Luke Wilkinson	Gracelyn Jones	Waters Family
Affiliation	SR Maryville East, LLC	HDR	N/A
Mailing Address	222 2nd Avenue South Suite 1900 Nashville, TN, 37201	120 Brentwood Commons Way Suite 525, Brentwood, TN 37027	3003 Sevierville Rd. Maryville, TN 37804
Phone Number	615-577-4611	629-228-7558	770-335-4846
Parcel ID:	n/a	n/a	048-015.00-

Project Location: Blount County, TN
Basin: Crooked Creek Little River (Hydrologic Unit Code [HUC] 060102010106) and Nails Creek Little River (Hydrologic Unit Code [HUC] 060102010107).
Nearest City: Maryville, TN
County: Blount County
Center Decimal Degree Coordinates of Project Area: 35.777590°, -83.915507°
USGS Quadrangle Name: Maryville, TN (1979) (1":24,000'-scale)

Project Site Description

Prior to undertaking fieldwork, HDR scientists conducted a desktop review of the Project Area utilizing a number of resources. The assessed data are presented on several figures in Appendix A, as follows:

- **Figure 1,** Project Vicinity Map;
- **Figure 2,** Aerial Imagery;
- **Figure 3,** U.S. Geological Survey (USGS) Topographic Map;
- **Figure 4,** USDA Natural Resources Conservation Service (NRCS) soils map (including depth to confining layer and depth to water table);
- **Figure 5,** on-site streams, wetlands, and floodplains as depicted in the USGS National Hydrography Dataset (NHD), National Wetland Inventory (NWI), and the Federal Emergency Management ACT (FEMA) National Flood Hazard Layer Viewer;
- **Figure 6,** the 12-digit HUC watersheds as shown in USGS NHD; and
- **Figure 7,** Delineated Features.

According to the USDA NRCS Soil Survey of Blount County, thirteen different soil types were identified within the Project Site (Appendix A, Figure 4). Approximately 18% percent of the onsite soils are classified as prime farmland and 28% are of local importance. Depth to the restrictive layer is between approximately 2.0 and greater than 6.6 feet. Depth to the water table is between 2.3 and greater than 6.6 feet. Approximately of 17% of the soils with the Project Site are classified as hydric according to the NRCS National Hydric Soils List for Blount County (NRCS 2021).

Table 1. Summary of USDA NRCS Soils within the Site.

Map Unit Symbol	Map Unit Name	Farmland Classification	Depth to Restrictive Layer (feet)	Depth to Water Table (feet)	Acres	Percent
uDcC	Dewey-College dale complex, 6 to 15 percent slopes, eroded	Not prime farmland	>6.6	>6.6	5.73	4.50%
uEdC	Etowah-Dewey complex, 6 to 12 percent slopes	Not prime farmland	>6.6	>6.6	10.53	3.41%
Dt	Dewey silty clay loam, 6 to 15 percent slopes, eroded	Farmland of local importance	>6.6	>6.6	35.54	27.98%
Dr	Dewey silty clay, severely eroded moderately steep phase	Not prime farmland	>6.6	>6.6	24.61	18.77%
Du	Dewey silty clay loam, 15 to 25 percent slopes, eroded	Not prime farmland	>6.6	>6.6	5.54	4.30%
Dz	Dunmore silty clay, 12 to 25 percent slopes, severely eroded	Not prime farmland	>6.6	>6.6	0.02	0.02%
Eb	Emory silt loam, gently sloping phase	All areas prime farmland	>6.6	5.5	7.27	5.72%
Gb	Gullied land, limestone material	Not prime farmland	>6.6	>6.6	2.61	2.00%
Hc	Hamblen silt loam, drainageway, 0 to 2 percent slopes, occasionally flooded	All areas prime farmland	>6.6	2.5	12.22	9.62%

Le	Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	All areas prime farmland	>6.6	2.3	4.34	3.40%
Lk	Litz silt loam, sloping phase	Not prime farmland	2.0	>6.6	4.55	3.54%
Ll	Litz silt loam, moderately steep phase	Not prime farmland	2.0	>6.6	4.50	3.54%
Sg	Sequoia silty clay loam, eroded sloping phase	Not prime farmland	3.0	>6.6	9.48	7.46%

A review of NWI and NHD datasets and aerial imagery indicate that Peppermint Branch (Stream 2), a perennial stream, flows though the center of the Site. Based on the field investigation, the Site also contains two unnamed tributaries (Stream 1 and 3) that flow into Peppermint Branch. Five WWCs connect directly to these streams and an additional five WWCs were identified within the Site that do not connect directly to Streams 1 - 3. Two palustrine forested wetlands (PFO), one palustrine emergent wetland (PEM), and one palustrine scrub/shrub wetland (PSS) are also present onsite (Appendix A, Figure 7).

The majority of the Site is classified as FEMA Flood Zone X according to FEMA maps. 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 (Appendix A, Figure 5). Approximately 1.28 acres (less than 1%) of the Site is classified as FEMA Flood Zone A. This is a Special Flood Hazard Area (SFHA) due to its low elevation and proximity to lakes, ponds, and other bodies of water. This is a high-risk area because it there is a 1% chance of annual flooding. The 1-percent annual chance flood is also referred to as the 100-year flood.

The project site consists of hay/pasture with small areas of mixed forest primarily in the center and northern portions of the Site (Appendix A, Figure 2). Dominant woody species consist of common hackberry (*Celtis occidentalis*), oak species (*Quercus* spp.), eastern red cedar (*Juniperus virginiana*), American sweetgum (*Liquidambar styraciflua*), loblolly pine (*Pinus taeda*), red maple (*Acer rubum*), American hornbeam (*Carpinus Caroliniana*), Callery pear (*Pyrus calleryana*), and American sycamore (*Platanus occidentalis*). The understory is composed primarily of eastern red cedar, American hornbeam, American sycamore, black raspberry (*Rubus occidentalis*), spicebush (*Lindera benzoin*), Chinese privet (*Ligustrum sinense*), and multiflora rose (*Rosa multiflora*). Common herbaceous and vine species include poison ivy (*Toxicodendron radicans*), sedge species (*Carex* spp.), grass species (*Poaceae* spp.), white clover (*Trifolium repens*), common dandelion (*Taraxacum officinale*), soft rush (*Juncus effusus*), foxtail grass (*Setaria viridis*), wild onion (*Allium oleraceum*), tansy ragwort (*Jacobaea heterophylla*), fescus grass (*Festuca heterophylla*), broad leaf dock (*Rumex obtusifolius*), ragweed (*Ambrosia acanthicarpa*), mock strawberry *(Duchesnea indica*), and Japanese honeysuckle (*Lonicera japonica*).

Jurisdictional Delineation and Hydrological Determination

On March 8 and 9, 2022 HDR environmental scientists Lyranda Thiem, Tennessee Qualified Hydrologic Professional in Training (TN-QHP-IT), and Caroline Ryciuk reviewed the Project Site for waters of the U.S. under Section 404 of the Clean Water Act (CWA). Jurisdictional waters of the U.S. were delineated according to the methodology and guidance described in the U.S. Army Corps of Engineers (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 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 1.5). Jurisdictional waters of the U.S.,Tennessee State Waters, and WWCs were flagged in the field and mapped using a Trimble® GeoXT GPS unit capable of sub-meter accuracy. GPS points were post-processed utilizing Trimble® GPS Pathfinder Office software.

Results

The results of the on-site field investigation conducted by HDR indicate that there are three (3) stream channels, four (4) wetlands, and ten (10) WWCs located within the Project Site (Appendix A, Figure 7).

The on-site surface waters drain to Peppermint Branch in the Little River Nails Creek watershed (HUC 060102010107) and Crooked Creek Little River (HUC 060102010106) [1]. 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.[2]

Wetland Waters

There are four (4) wetlands located within the Project Site, totaling approximately 0.90 acres (Appendix A, Figure 7). A summary of on-site wetland waters in included in Table 1.

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

Feature Name	Coordinates (decimal degrees)	Cowardin Classification[1]	Estimated Amount of Aquatic Resource in Review Area (acres)
Wetland Waters			
Wetland 1	35.776188, -83.916963	PFO	0.05 acre
Wetland 2	35.774915, -83.913895	PSS	0.45 acre
Wetland 3	35.774915, -83.913895	PEM	0.18 acre
Wetland 4	35.777172, -83.915736	PFO	0.22 acre
Total Wetland Waters:			**0.90 acres**

Crooked Creek Little River is referred to as Little River Middle Creek on the USG NHD Dataset (Figure 6).
Division of Water Resources (tn.gov)

[1] Cowardin Classifications: PEM = Palustrine emergent; PFO = Palustrine forested; PSS = Palustrine scrub/shrub

Streams

There are three (3) streams located within the Project Site totaling approximately 5,068 linear feet (0.32 acre) (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 within the Project Site.

Feature Name	Starting Coordinates (decimal degrees)	Ending Coordinates (decimal degrees)	Cowardin Classification[1]	Estimated Amount of Aquatic Resource in Review Area
Non-Wetland Waters				
Stream 1	35.78154, -83.914282	35.780300 -83.912157	R4SB5	Length: 849 lf Width: 6in – 2 ft Area: 0.04 ac.
Stream 2	35.7808889, -83.909905	35.776245, -83.917127	R2UB3	Length: 2,923 lf Width: 6in – 4ft Area: 0.27 ac.
Stream 3	35.774486, -83.913593	35.77482, -83.915356	R4SB5	Length: 1,296 lf Width: 6in – 1ft Area: 0.01 ac.
		Total Non-Wetland Waters:		**Length: 5,068 linear feet Total acres: 0.32**

1 Cowardin Classifications: R4SB5 = Riverine, Intermittent, Mud Streambed; R2UB3 = Mud, Unconsolidated Bottom, Lower Perennial, Riverine

Wet Weather Conveyances

There are a total of ten (10) WWCs located within the Project Site totaling approximately 1,970 linear feet (0.12 acres) (Appendix A, Figure 7). A summary of on-site WWCs is included 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
WWC 1	35.778083, -83.915925	35.777621, -83.916042	Length: 172 ft Width: 2-6 ft Area:- 0.02 ac
WWC 2	35.779660, -83.917929	35.779959, -83.918158	Length: 128 ft Width: 1 ft Area:- 0.003 ac
WWC 3	35.780009, -83.917287	35.780282, -83.917703	Length: 145 ft Width: 3-4 ft Area:- 0.01 ac
WWC 4	35.780172, -83.917557	35.780184, -83.917841	Length: 84 ft Width: 2 ft Area:- 0.004 ac

Feature Name	Start Coordinates (decimal degrees)	End Coordinates (decimal degrees)	Estimated Amount of WWC in Review Area
WWC 5	35.780871, -83.914434	35.780965, -83.914291	Length: 55 ft Width: 2-3 ft Area:- 0.004 ac
WWC 6	35.778807, -83.913759	35.778335, -83.913178	Length: 248 ft Width: 2 ft Area:- 0.01 ac
WWC 7	35.778065, -83.914655	35.777636, -83.913847	Length: 295 ft Width: 2 ft Area: 0.01 ac.
WWC 8	35.777068, -83.916261	35.777010, -83.916136	Length: 43 ft Width: 2 ft Area: 0.002 ac
WWC 9	35.775991, -83.915116	35.776074, -83.915079	Length: 34 ft Width: 4 ft Area: 0.003 ac
WWC 10	35.77277, -83.914397	35.774523, -83.913610	Length: 766 ft Width: 2 ft Area:- 0.04 ac
		Total Wet Weather Conveyances:	**Length: 1,970 lf** **Total acres: 0.11**

On behalf of SR Maryville East, HDR is hereby requesting HD verification for four (4) wetlands, three (3) streams, and ten (10) WWCs within the Project Site. Should you have any questions or require additional information following your review of the enclosed materials, please contact Lyranda Thiem at (615) 507-9167 or lyranda-thiem@hdrinc.com or Gracelyn Jones at (629) 228-7558 or Gracelyn.Jones@hdrinc.com.

Sincerely,

Lyranda Thiem

Lyranda Thiem (QHP-IT)
Environmental Scientist

Gracelyn Jones

Gracelyn Jones
Environmental Scientist

ppendices: Appendix A: Figures

Figure 1. Project icinity
Figure 2. Aerial Imagery
Figure 3. USGS Topographic Map
Figure 4. NRCS Soils Survey of lount County
Figure 5. USGS National Hydrography Dataset, USFWS National Wetlands Inventory, and FEMA Floodplains
Figure 6. HUC 12 Watershed
Figure 7. Delineated Features

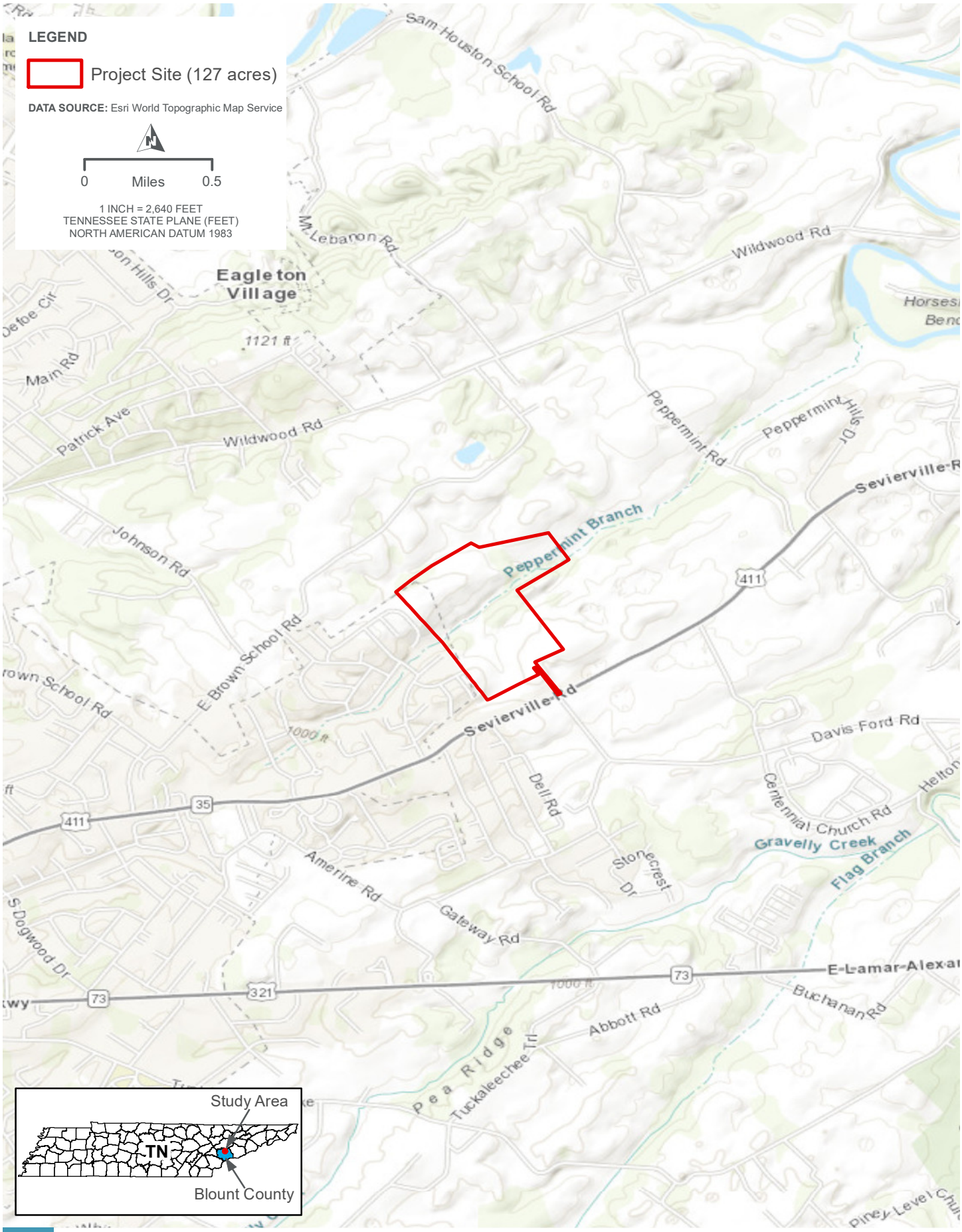
Appendix B: Data Forms and Normal Weather Conditions
USACE Wetland Determination Data Forms (DP1 - DP9)
Hydrologic Determination Data Sheets
Normal Weather Conditions

Appendix C: Site Photographs

cc: Luke Wilkinson, Silicon Ranch Corporation

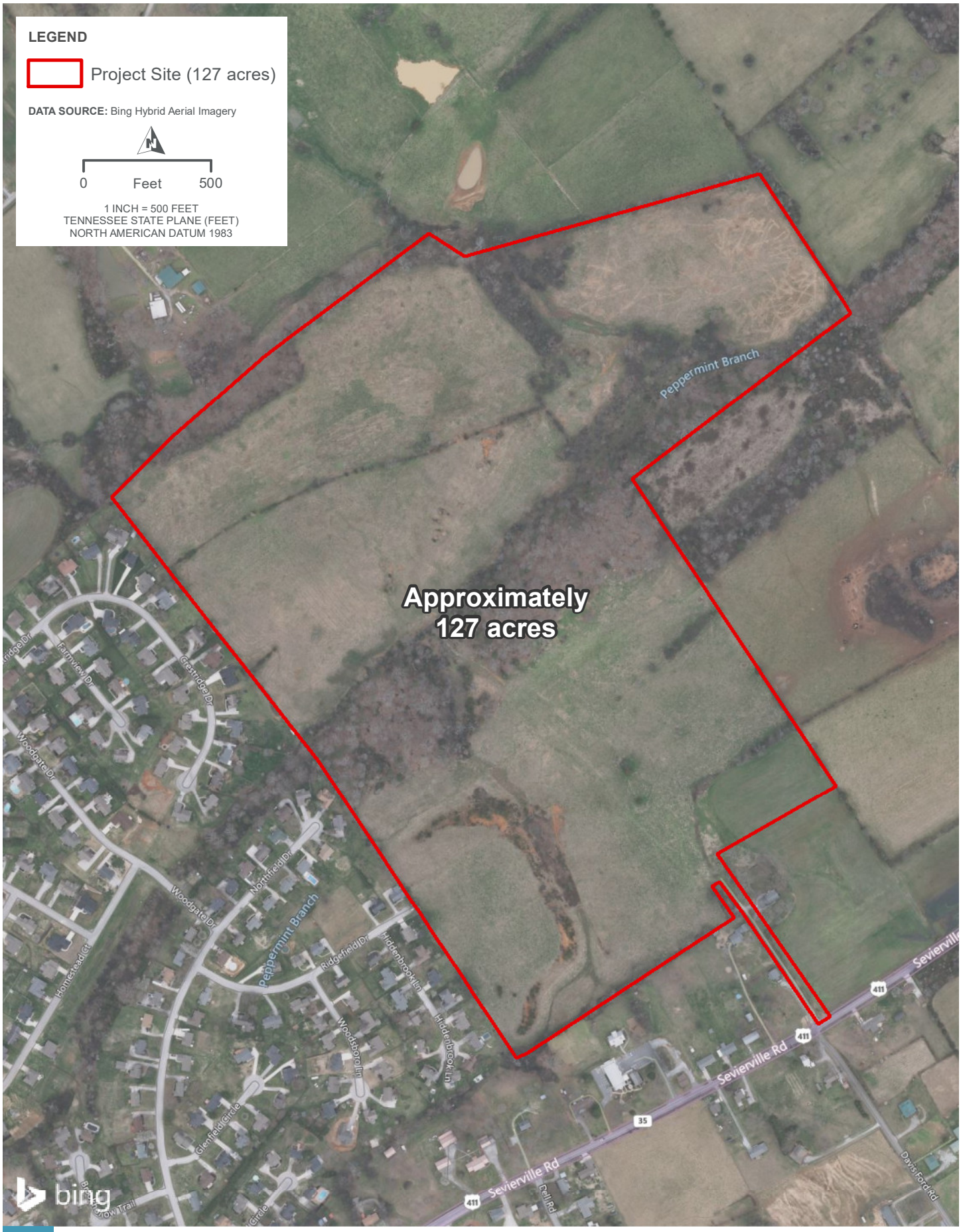
Appendix A

Figures



SILICON RANCH

SR MARYVILLE EAST
PROJECT VICINITY
FIGURE 1



SILICON RANCH

SR MARYVILLE EAST

AERIAL IMAGERY

FIGURE 2

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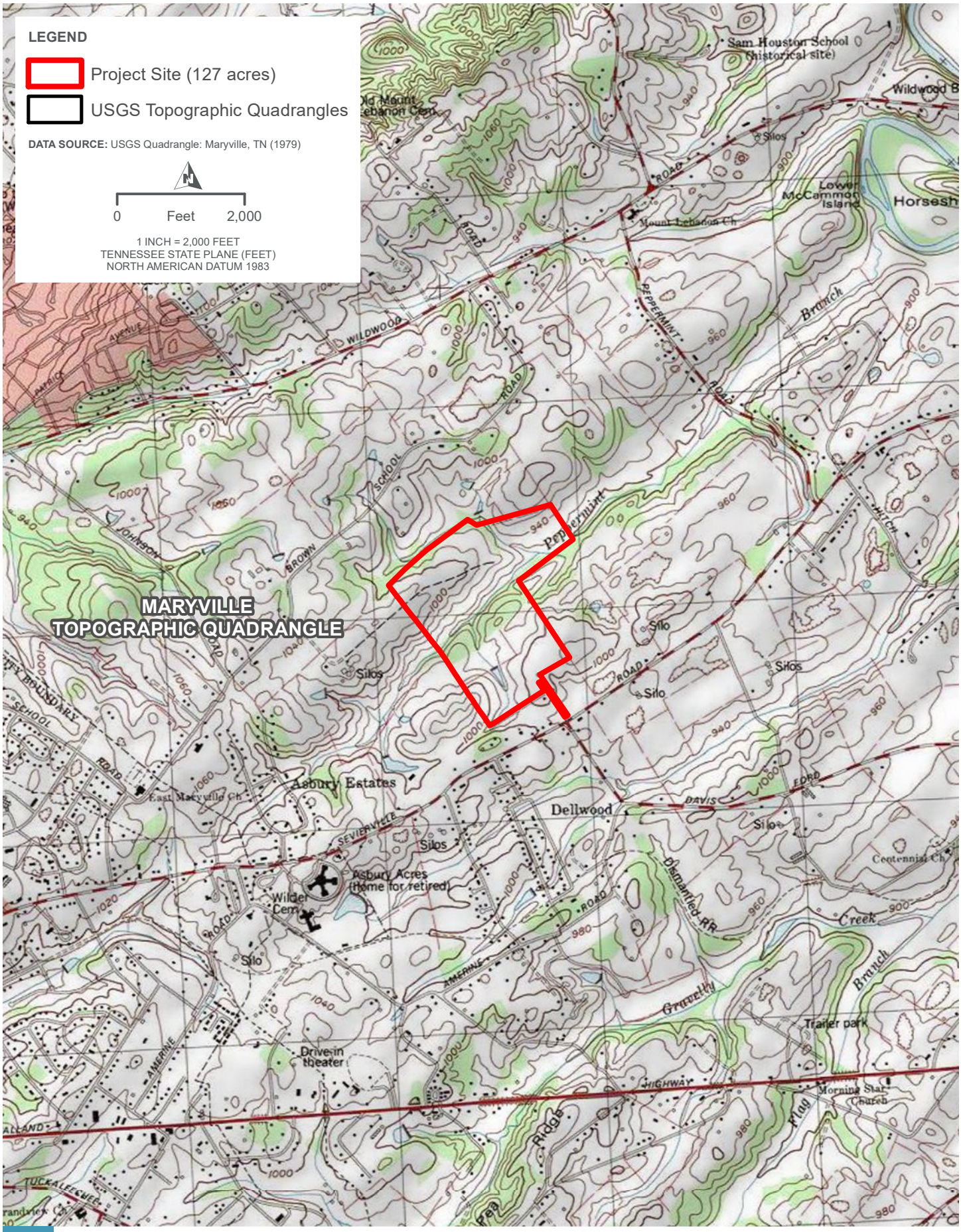

HDR SILICON RANCH

SR MARYVILLE EAST

TOPOGRAPHIC MAP

FIGURE 3

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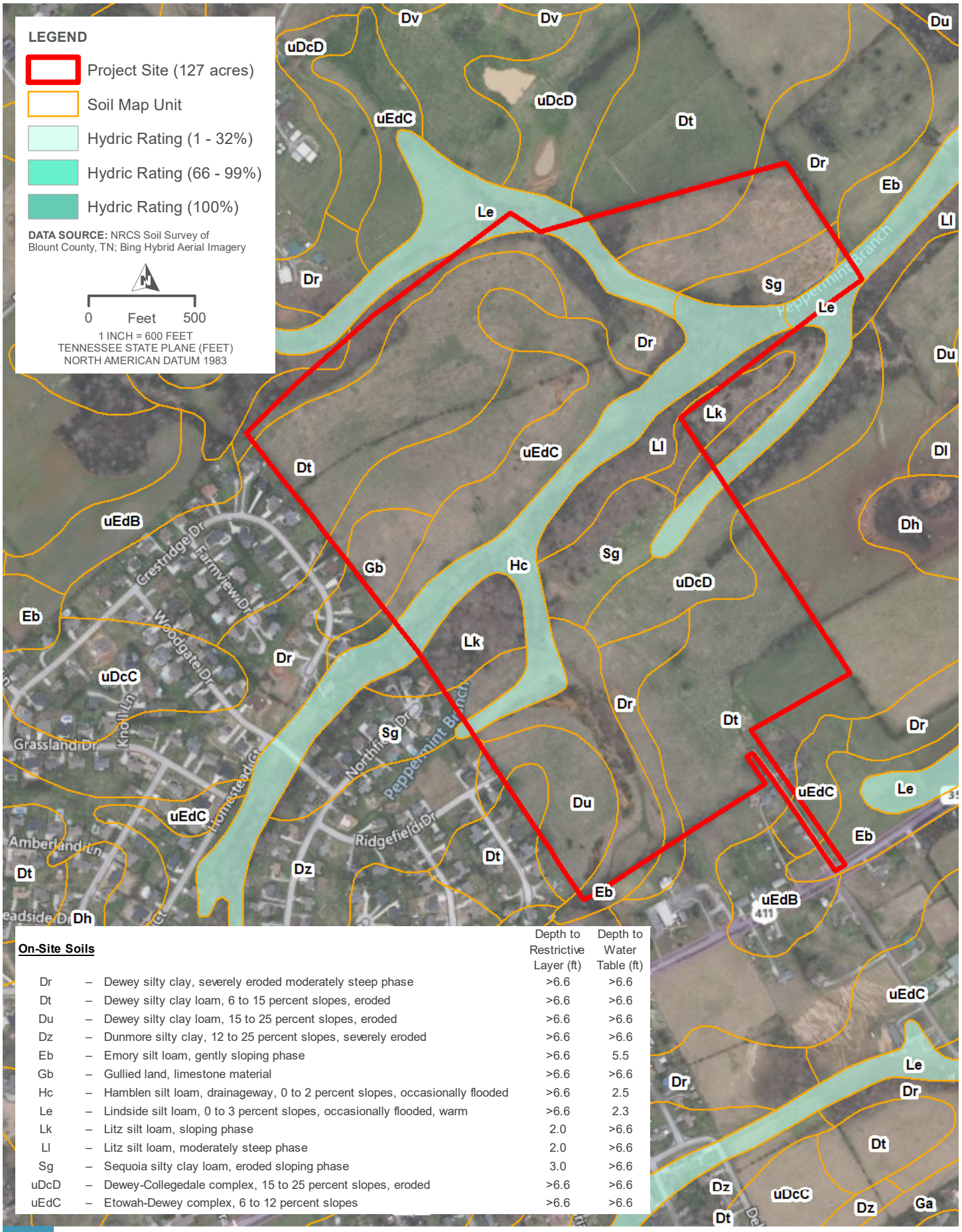


On-Site Soils

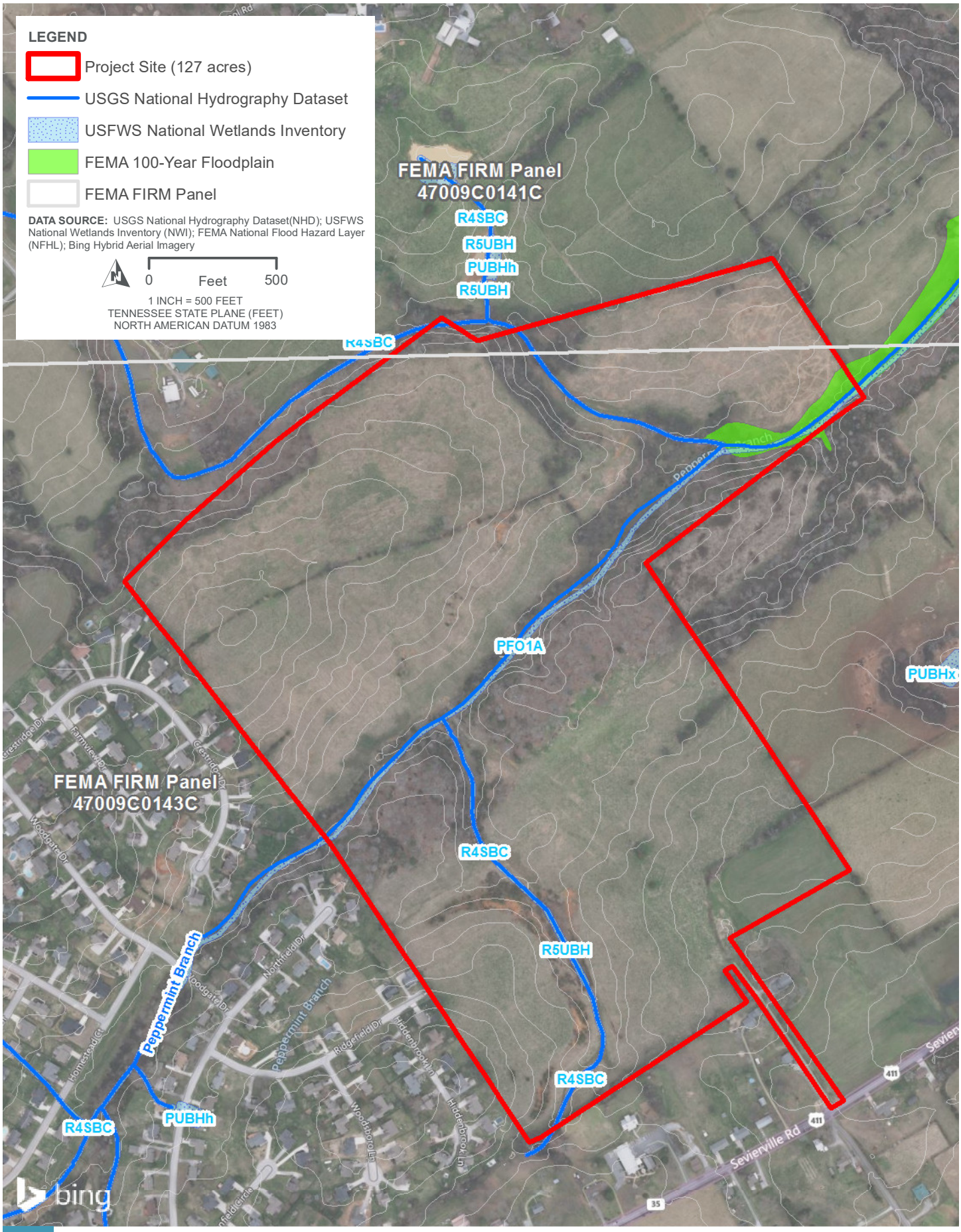
			Depth to Restrictive Layer (ft)	Depth to Water Table (ft)
Dr	–	Dewey silty clay, severely eroded moderately steep phase	>6.6	>6.6
Dt	–	Dewey silty clay loam, 6 to 15 percent slopes, eroded	>6.6	>6.6
Du	–	Dewey silty clay loam, 15 to 25 percent slopes, eroded	>6.6	>6.6
Dz	–	Dunmore silty clay, 12 to 25 percent slopes, severely eroded	>6.6	>6.6
Eb	–	Emory silt loam, gently sloping phase	>6.6	5.5
Gb	–	Gullied land, limestone material	>6.6	>6.6
Hc	–	Hamblen silt loam, drainageway, 0 to 2 percent slopes, occasionally flooded	>6.6	2.5
Le	–	Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	>6.6	2.3
Lk	–	Litz silt loam, sloping phase	2.0	>6.6
Ll	–	Litz silt loam, moderately steep phase	2.0	>6.6
Sg	–	Sequoia silty clay loam, eroded sloping phase	3.0	>6.6
uDcD	–	Dewey-Collegedale complex, 15 to 25 percent slopes, eroded	>6.6	>6.6
uEdC	–	Etowah-Dewey complex, 6 to 12 percent slopes	>6.6	>6.6

HDR SILICON RANCH

SR MARYVILLE EAST

NRCS SOIL SURVEY OF BLOUNT COUNTY, TN

FIGURE 4



HDR SILICON RANCH

SR MARYVILLE EAST

NHD, NWI AND FEMA FLOOD ZONES

FIGURE 5

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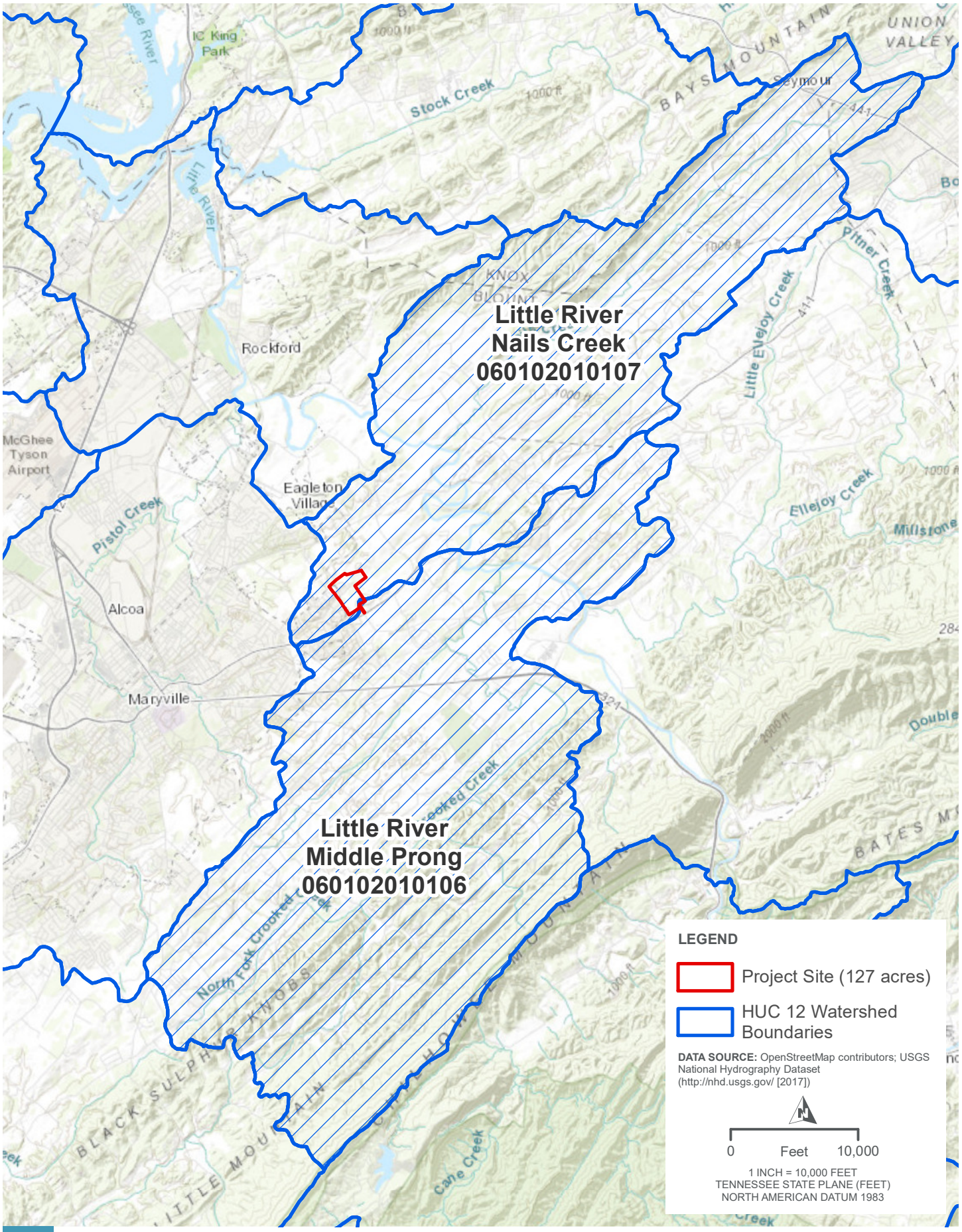

HDR SILICON RANCH

SR MARYVILLE EAST

HUC 12 WATERSHED

FIGURE 6

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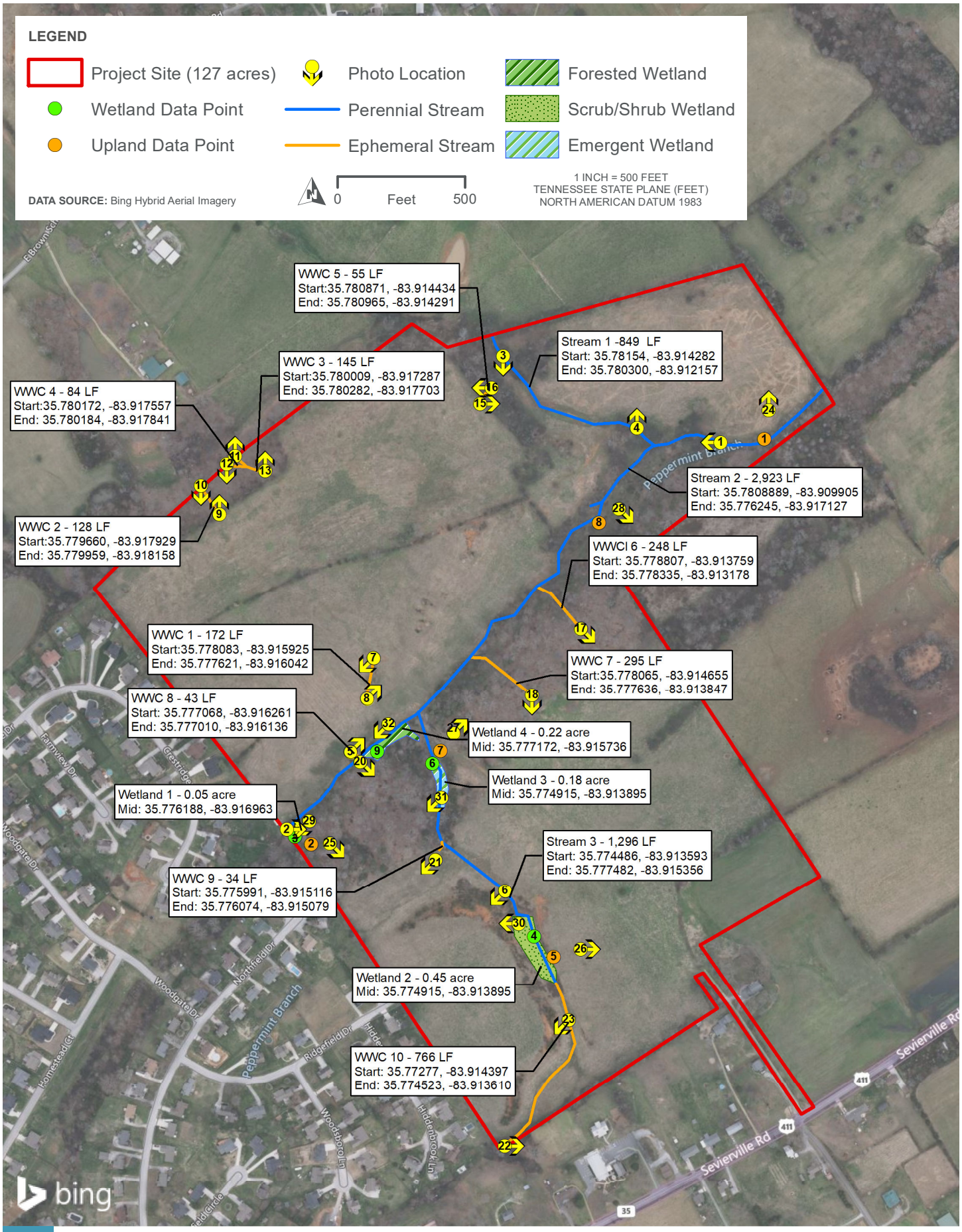
HYDOLOGIC DETERMINATION REQUEST



SR MARYVILLE EAST

DELINEATED FEATURES

FIGURE 7

Appendix B

Data Forms and Normal Weather Conditions

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/8/2022

Applicant/Owner: SRC State: TN Sampling Point: DP1-UP1

Investigator(s): L. Thiem and C. Rycuik Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 35.780364 Long: -83.910703 Datum: NAD86

Soil Map Unit Name: Hamblen silt loam, drainageway, 0 to 2 percent slopes, occasionally flooded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point located within a floodplain are off of Peppermint Branch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland Hydrology is not present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP1-UP1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis occidentalis*	20	Yes	FACU
2. *Quercus sp.*	5	Yes	
3.			
4.			
5.			
6.			
7.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5
Sapling/Shrub Stratum (Plot size: 30)			
1. *Ligustrum sinense*	15	Yes	FACU
2. *Rubus occidentalis*	5	Yes	FACU
3. *Rosa multiflora*	5	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5
Herb Stratum (Plot size: 5)			
1. *Poaceae sp.* *	30	Yes	FACU
2. *Trifolium repens*	10	Yes	FACU
3. *Taraxacum officinale*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	90 (A)		360 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting 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.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

* Wetland status ranges from OBL-UPL. Wetland status given FACU for this survey.

SOIL

Sampling Point: DP1-UP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/2	100					Loamy/Clayey	
2-20	7.5YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Wetland Soils were not present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/8/2022

Applicant/Owner: SRC State: TN Sampling Point: DP2-UP2

Investigator(s): L. Thiem and C. Rycuik Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 35.776183 Long: -83.916881 Datum: NAD86

Soil Map Unit Name: Hamblen silt loam, drainageway, 0 to 2 percent slopes, occasionally flooded NWI classification: NAD86

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point located uphill from wetland 1.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland Hydrology is not present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP2-UP2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus alba*	20	Yes	FACU
2. *Quercus rubra*	15	Yes	FACU
3. *Pinus taeda*	10	Yes	FAC
4. *Juniperus virginiana*	5	No	FACU
5.			
6.			
7.			
	50	=Total Cover	
50% of total cover: 25		20% of total cover:	10

Sapling/Shrub Stratum (Plot size: 30)			
1. *Juniperus virginiana*	5	Yes	FACU
2. *Rubus occidentalis*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2

Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	50	x 4 =	200
UPL species	0	x 5 =	0
Column Totals:	60 (A)		230 (B)

Prevalence Index = B/A = 3.83

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting 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.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Wetland vegetation is not present.

SOIL

Sampling Point: DP2-UP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Wetland Soils were not present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/8/2022

Applicant/Owner: SRC State: TN Sampling Point: DP3-W1

Investigator(s): L.Thiem and C. Rycuik Section, Township, Range:

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 35.776165 Long: -83.917012 Datum: NAD86

Soil Map Unit Name: Hamblen silt loam, drainageway, 0 to 2 percent slopes, occasionally flooded NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Depression wetland located off of peppermint branch.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes ____	No X	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP3-W1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	20	Yes	FAC
2. *Acer rubrum*	5	No	FAC
3. *Carpinus caroliniana*	5	No	FAC
4.			
5.			
6.			
7.			
	30	=Total Cover	
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum (Plot size: 30)			
1. *Ligustrum sinense*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	15	=Total Cover	
50% of total cover: 8	20% of total cover: 3		
Herb Stratum (Plot size: 5)			
1. *Poaeae sp.**	30	Yes	FACW
2. *Carex sp.**	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	=Total Cover	
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	40	x 3 =	120
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	95 (A)		260 (B)

Prevalence Index = B/A = 2.74

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting 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.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Wetland Vegetation is present. * Wetland status ranges from UPL-OBL. Wetland status given FACW for this survey.

SOIL

Sampling Point: DP3-W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	100					Loamy/Clayey	
6-20	2.5Y 5/2	80	10YR 5/6	20	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Hydric soils present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/9/2022

Applicant/Owner: SRC State: TN Sampling Point: DP3-UP1

Investigator(s): L. Thiem and C. Rycuik Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 35.779479 Long: -83.912914 Datum: NAD86

Soil Map Unit Name: Litz silt loam, moderately steep phase NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point located within floodplain of Peppermint Branch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland Hydrology is not present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP3-UP1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Celtis occidentalis*	30	Yes	FACU
2. *Pyrus calleryana*	5	No	UPL
3. *Carpinus caroliniana*	10	Yes	FAC
4.			
5.			
6.			
7.			
	45	=Total Cover	
50% of total cover: 23	20% of total cover:	9	
Sapling/Shrub Stratum (Plot size: 30)			
1. *Rosa multiflora*	20	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20	=Total Cover	
50% of total cover: 10	20% of total cover:	4	
Herb Stratum (Plot size: 5)			
1. *Poaceae sp.* *	30	Yes	FACU
2. *Trifolium repens*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40	=Total Cover	
50% of total cover: 20	20% of total cover:	8	
Woody Vine Stratum (Plot size: 30)			
1. *Lonicera japonica*	10	Yes	FACU
2.			
3.			
4.			
5.			
	10	=Total Cover	
50% of total cover: 5	20% of total cover:	2	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	100	x 4 =	400
UPL species	5	x 5 =	25
Column Totals:	115 (A)		455 (B)

Prevalence Index = B/A = 3.96

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting 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.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

* Wetland status ranges from OBL-UPL. Wetland status given FACU for this survey.

SOIL

Sampling Point: DP3-UP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/4	100					Loamy/Clayey	
2-20	7.5YR 4/4	70	2.5Y 5/4	30	C	M	Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Wetland Soils were not present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/8/2022

Applicant/Owner: SRC State: TN Sampling Point: DP4-W2

Investigator(s): L.Thiem and C. Rycuik Section, Township, Range:

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 35.775060 Long: -83.913902 Datum: NAD86

Soil Map Unit Name: Emory silt loam, gently sloping phase NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
Depression wetland located within a fenced in area within a cattle pasture

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 6
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP4-W2

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30)			
1. *Carpinus caroliniana*	60	Yes	FAC
2. *Platanus occidentalis*	10	No	FACW
3. *Lindera benzoin*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
	80 =Total Cover		
50% of total cover: 40	20% of total cover: 16		
Herb Stratum (Plot size: 5)			
1. *Juncus effusus*	15	Yes	FACW
2. *Carex sp.*	10	Yes	FACW
3. *Setaria viridis*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 =Total Cover		
50% of total cover: 18	20% of total cover: 7		
Woody Vine Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10 =Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	35	x 2 =	70
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals	125 (A)		340 (B

Prevalence Index = B/A = 2.72

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supportir 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) more in diameter at breast height (DBH), regardless height.

Sapling/Shrub – Woody plants, excluding vines, les than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft ir height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Wetland Vegetation is present

SOIL

Sampling Point: DP4-W2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 5/2	100					Loamy/Clayey	
10-20	10YR 5/2	90	7.5YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Hydric soils present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/8/2022

Applicant/Owner: SRC State: TN Sampling Point: DP5-UP3

Investigator(s): L. Thiem and C. Rycuik Section, Township, Range:

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 35.774821 Long: -83.913609 Datum: NAD86

Soil Map Unit Name: Emory silt loam, gently sloping phase NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upslope of Wetland 2

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology is not present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP5-UP3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30)			
1. *Rubus occidentalis*	25	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	25 =Total Cover		
50% of total cover: 13	20% of total cover: 5		
Herb Stratum (Plot size: 5)			
1. *Poaceae sp.*	60	Yes	FACU
2. *Allium oleraceum*	10	No	FACU
3. *Jacobaea vulgaris*	20	Yes	UPL
4. *Festuca heterophylla*	5	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 =Total Cover		
50% of total cover: 48	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	95	x 4 =	380
UPL species	25	x 5 =	125
Column Totals:	120 (A)		505 (B)

Prevalence Index = B/A = 4.21

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting 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.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

*Wetland status ranges from OBL-UPL. Wetland status assigned FACU for this survey.

SOIL

Sampling Point: DP5-UP3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	7.5YR 4/4	100					loamy/clayey	clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Wetland soils are not present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/9/2022

Applicant/Owner: SRC State: TN Sampling Point: DP6-W3

Investigator(s): L.Thiem and C. Rycuik Section, Township, Range:

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 35.776929 Long: -83.915195 Datum: NAD86

Soil Map Unit Name: Litz silt loam, moderately steep phase NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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?	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:
Wetland abutting a UNT to Peppermint Branch

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 3
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP6-W3

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5)			
1. *Juncus effusus*	15	Yes	FACW
2. *Carex sp.**	10	No	FACW
3. *Setaria viridis*	40	Yes	FAC
4. *Rumex obtusifolius*	5	No	FACU
5. *Ambrosia acanthicarpa*	5	No	UPL
6.			
7.			
8.			
9.			
10.			
11.			
	75 =Total Cover		
50% of total cover: 38	20% of total cover: 15		
Woody Vine Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	30	Yes	FAC
2.			
3.			
4.			
5.			
	30 =Total Cover		
50% of total cover: 15	20% of total cover: 6		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	70	x 3 =	210
FACU species	5	x 4 =	20
UPL species	5	x 5 =	25
Column Totals:	105 (A)		305 (B)

Prevalence Index = B/A = 2.90

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting 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.

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

*Wetland indicator status ranges from OBL-UPL. FAWC status asigned for this survey.

SOIL

Sampling Point: DP6-W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	2.5Y 4/2	90	7.5YR 5/8	10	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Hydric soils present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/9/2022

Applicant/Owner: SRC State: TN Sampling Point: DP7-UP4

Investigator(s): L. Thiem and C. Rycuik Section, Township, Range:

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 35.777013 Long: -83.915140 Datum: NAD86

Soil Map Unit Name: Litz silt loam, moderately steep phase NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Upland point located uphill from Wetland 3 and Wetland 4

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland Hydrology is not present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP7-UP4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30)			
1. *Rosa multiflora*	15	Yes	FACU
2. *Juniperus virginiana*	5	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 =Total Cover		
50% of total cover: 10	20% of total cover:	4	
Herb Stratum (Plot size: 5)			
1. *Poaceae sp.* *	30	Yes	FACU
2. *Trifolium repens*	15	Yes	FACU
3. *Duchesnea indica*	5	No	FACU
4. *Allium allegheniense*	5	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 =Total Cover		
50% of total cover: 28	20% of total cover:	11	
Woody Vine Stratum (Plot size: 30)			
1. *Lonicera japonica*	20	Yes	FACU
2.			
3.			
4.			
5.			
	20 =Total Cover		
50% of total cover: 10	20% of total cover:	4	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	90	x 4 =	360
UPL species	5	x 5 =	25
Column Totals:	95 (A)		385 (B)

Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting 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.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

* Wetland status ranges from OBL-UPL. Wetland status given FACU for this survey.

SOIL

Sampling Point: DP7-UP4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/4	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:
Wetland Soils were not present.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-xxxx, Exp: Pending
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/9/2022

Applicant/Owner: SRC State: TN Sampling Point: DP9-W4

Investigator(s): L.Thiem and C. Rycuik Section, Township, Range:

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 35.777079 Long: -83.915881 Datum: NAD86

Soil Map Unit Name: Litz silt loam, moderately steep phase NWI classification: PFO

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ 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?	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:
Depression wetland located abutting Peppermint Branch.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes X	No ____	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland hydrology present.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: DP9-W4

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	20	Yes	FACW
2. *Acer rubrum*	10	Yes	FAC
3. *Carpinus caroliniana*	10	Yes	FAC
4. *Pinus taeda*	5	No	FAC
5.			
6.			
7.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9
Sapling/Shrub Stratum (Plot size: 30)			
1. *Rosa multiflora*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1
Herb Stratum (Plot size: 5)			
1. *Setaria viridis*	10	Yes	FAC
2. *Poaceae sp.*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover:	3
Woody Vine Stratum (Plot size: 30)			
1. *Toxicodendron radicans*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	50	x 3 =	150
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	75 (A)		210 (B)

Prevalence Index = B/A = 2.80

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting 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.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (Include photo numbers here or on a separate sheet.)
Wetland Vegetation is present

SOIL

Sampling Point: DP9-W4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	2.5Y 3/2	90	7.5YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:
Hydric soils present.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT to Peppermint Branch	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: S1	
Site Location: Located in the northeastern border and flows into Peppermint Branch	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.780653/-83.913326
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)		Stream
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 = Stream

Secondary Indicator Score (if applicable) = 23

Justification / Notes :

This is a perennial stream that flows into Peppermint Branch. Bank Width ranges from 3 to 6 feet and Bank Height ranges from 6 inches to 3 feet. Water depth at the time of the survey ranged from 2 inches to 2 feet. A hybrid blue gill was found swimming in this stream along with a mud salamander.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 11.5)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal = 4)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal = 7.5)	**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)	0	1	2	3
23. Bivalves/mussels	0	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.

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

Total Points = 23

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

Notes : Sorting of gravel from sandy substrates occured throughout the stream. One mud salamander one hybrid blue gill, and several left handed snails were obserbed within this stream. Cattle have crossed this stream.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Peppermint Branch	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: S2	
Site Location: Located in the middle of the project boundary	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.778481/-83.914138
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)		Stream
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 = Stream

Secondary Indicator Score (if applicable) = 36

Justification / Notes :

This stream is Peppermint Branch which starts off property and flows off property.

Bank width ranged from 6 to 8 feet and Bank Height ranged from 2 to 4 feet. Water depth in the channel ranged from 6 inches to 2 feet.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 19.5)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

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 NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal = 10.5)	**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)	0	1	2	3
23. Bivalves/mussels	0	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.

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

Total Points = 36

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

Notes : Sorting of gravel from sandy substrates occured throughout the stream. Several scuds were found within the stream, cricket frogs were heard coming from the stream

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT to Peppermint Branch	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: S3	
Site Location: Located in the middle of the project boundary and flows into peppermint branch	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.775991/-83.914959
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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	✓	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	✓	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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 = Stream

Secondary Indicator Score (if applicable) = 3

Justification / Notes :

This stream flows south to north across the project boundary. An ephemeral flows into this stream.

Bank width ranged from 2 to 4 feet and Bank Height ranged from 6 inches to 1 foot. Water depth at the time of the survey was 6 inches to 1 foot.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 8)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

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 NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal = 6.5)	**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)	0	1	2	3
23. Bivalves/mussels	0	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.

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

Total Points = 20.5

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

Notes : Very limited sorting of gravel from silt and sandy substrates. One green frog was observed near the channel.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 1 (Erosional Gully)	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: WWC-1	
Site Location: Located in the middle of the project boundary	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.777866/-83.915991
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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) =

Justification / Notes :

This is an erosional gully located within an agricultural cattle field.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 8)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal =)	**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	0	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.

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

Total Points = _____

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

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 2	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: WWC-2	
Site Location: Located in the northern portion of the project boundary	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.779790/-83.917998
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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) =

Justification / Notes :

This WWC flows down from agricultural field down through a forested area.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 8)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal =)	**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	0	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.

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

Total Points = _____

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

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 3	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: WWC-3	
Site Location: Located in the northern portion of the project boundary. WWC 3 branches from WWC 4	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.780164/-83.917546
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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) =

Justification / Notes :

This WWC flows down from agricultural field down through a forested area.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 8)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal =)	**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	0	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.

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

Total Points = _____

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

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 4	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: WWC-4	
Site Location: Located in the northern portion of the project boundary. WWC 3 branches from WWC 4	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.780172/-83.917557
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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) =

Justification / Notes :

This WWC flows down from agricultural field down through a forested area.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 8)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal =)	**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	0	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.

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

Total Points = _____

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

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 5	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: WWC-5	
Site Location: Located in the northern portion of the project boundary.	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.780874/-83.914401
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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) =

Justification / Notes :

This WWC flows down from agricultural field down through a forested area.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 8)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal =)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal =)	**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	0	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.

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

Total Points = _____

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

Notes :

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 6	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: WWC-6	
Site Location: Located centrally within the project site. Flows down into peppermint branch	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.778553/-83.913394
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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) = 7.5

Justification / Notes :

This WWC flows down from agricultural field down through a forested area. Bank width ranges from 1 to 2 feet and Bank Height ranges from 6 inches to 2 feet. It had rained the day before so water was flowing in this channel

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 6)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

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 NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal = 1.5)	**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)	0	1	2	3
23. Bivalves/mussels	0	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.

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

Total Points = 7.5

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

Notes : One large headcut starts this WWC. Grasses were growing in portions of this WWC.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 7	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: WWC-7	
Site Location: Located centrally within the project site. Flows down into peppermint branch	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.777910/-83.914244
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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) = 7.5

Justification / Notes :

This WWC flows down from agricultural field down through a forested area. Bank width ranges from 1 to 3 feet and Bank Height ranges from 6 inches to 2 feet. Since it rained the night before water was flowing in the channel.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 6)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

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 NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal = 1.5)	**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)	0	1	2	3
23. Bivalves/mussels	0	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.

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

Total Points = 7.5

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

Notes : Grasses were growing in portions of this WWC.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 8	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: WWC-8	
Site Location: Located centrally within the project site. Flows down into peppermint branch	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.777043/-83.916247
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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) = 7.5

Justification / Notes :

This WWC flows from an agricultural cattle field down into peppermint branch. Bank width was about 1 foot long and bank height ranges from 6 inches to 1 foot. No water was within the channel during the time of the survey.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 4.5)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

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 NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal = 1.5)	**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)	0	1	2	3
23. Bivalves/mussels	0	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.

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

Total Points = 6

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

Notes : Grasses were growing in portions of this WWC. Flows into Peppermint Branch. Cows have been walking through this WWC.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 9	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: WWC-9	
Site Location: Located centrally within the project site. Flows down into peppermint branch	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long: 35.776004/-83.915076
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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) = 7.5

Justification / Notes :

This WWC flows from an agricultural cattle field down into stream 3. Bank width was about 1 to 3 feet long and bank height ranges from 6 inches to 1 foot. Since it rained the night before very little water was flowing in the channel

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 4.5)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

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 NA	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 = 0		Yes = 1.5	

C. Biology (Subtotal = 1.5)	**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)	0	1	2	3
23. Bivalves/mussels	0	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.

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

Total Points = 6

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

Notes : This WWC has a small headcut starting it within the cow pasture and some small logs acting as grade controls

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 10	Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik	Project ID : SR Maryville East
Site Name/Description: WWC-10	
Site Location: Located on the southern end of the Site and flows into S3	
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)	Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches	35.773757/-83.913441
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : ESRL and AHPS	
Watershed Size : 44, 971 acres	County: Blount
Soil Type(s) / Geology : Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	Source: USDA: Web Soil Survey
Surrounding Land Use : Residential and Agricultural use	
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		WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall		WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✓	Stream
6. Presence of fish (except *Gambusia*)	✓	Stream
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) = 9.5

Justification / Notes :

This WWC flows from an agricultural cattle field down into stream 3. Bank width was about 2 to 3 feet long and bank height ranges from 6 inches to 1 foot. On the first day of the site visit this feature was not flowing, but on the second day it rained causing this feature to flow.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 6)	**Absent**	**Weak**	**Moderate**	**Strong**
1. 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
8. 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 NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal = 1.5)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain NA	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 = 0		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)	0	1	2	3
23. Bivalves/mussels	0	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.

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

Total Points = 9.5

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

Notes : The second half of this channel loses the bed and bank and instead acts as sheet flow over grasses within the pasture.

March 2022 Mobilization			
Criteria- values are in inches	1st Month Prior February-22	2nd Month prior January-22	3rd Month Prior December-21
Standard Deviation	1.91	2.00	2.25
Minus 1 Std. Deviation	1.84	2.34	2.15
Normal Precipitation	4.03	4.34	4.40
Plus 1 Std. Deviation	5.94	6.34	6.65
Actual Estimated Rainfall	15.0	8.0	5.0
Condition (elevated, low, average)	Elevated	Elevated	Average
Conditional Score	3	3	2
Weight	3	2	1
Product	9	6	2
		Sum=	**17**
Overall Wetness*			**Elevated**

Appendix C

Photographs

Photo 1- Stream 2 (Peppermint Branch), facing east and downstream.

Photo 2- Stream 2 (Peppermint Branch), facing west and upstream.

Photo 3- Stream 1 (UNT to Peppermint Branch), facing south and downstream.

Photo 4- Stream 1 (UNT to Peppermint Branch), facing north and upstream.

Photo 5- Stream 3 (UNT to Peppermint Branch), facing northeast and downstream.

Photo 6- Stream 3 (UNT to Peppermint Branch), facing southwest and downstream.

Photo 7- WWC 1, facing southwest and downstream.

Photo 8- WWC1, facing northeast and upstream.

Photo 9- WWC2, facing north and downstream.

Photo 10- WWC2, facing south and upstream.

Photo 11- WWC3, facing north and downstream.

Photo 12- WWC3, facing south and upstream.

Photo 13- WWC4, facing north and downstream.

Photo 14- WWC4, facing south and upstream.

Photo 15-WWC5, facing east and downstream.

Photo 16- WWC5, facing west and upstream.

Photo 17- WWC6, facing southeast and upstream.

Photo 18-WWC7, facing south and upstream.

Photo 19- WWC8, facing northwest and upstream.

Photo 20- WWC8, facing southeast and downstream.

Photo 21- WWC9, facing southwest and upstream.

Photo 22- WWC10, facing east and downstream.

Photo 23- WWC10, facing southwest and upstream.

Photo 24- Upland 1 (DP1-UP1) facing north.

Photo 25- Upland 2 (DP2-UP2) facing southeast.

Photo 26- Upland 3 (DP5-UP3) facing east.

Photo 27- Upland 4 (DP7-UP4), facing northeast.

Photo 28- Upland 5 (DP8-UP5), facing southeast.

Photo 29- Wetland 1 (PFO) (DP3-W1) facing southwest.

Photo 30- Wetland 2 (PSS) (DP4-W2) facing west.

Photo 31- Wetland 3 (PEM)(DP6-W3) facing southwest.

Photo 32- Wetland 4 (PFO) (DP9-W4) facing southwest.

Prepared By and Return To:

Dylan Hall
Silicon Ranch Corporation
222 2nd Ave. S, Ste 1900
Nashville, Tennessee 37201

PURCHASE OPTION

THIS PURCHASE OPTION (the "Agreement"), is entered into as of last date of signature (the "Effective Date"), by and between Silicon Ranch Corporation, a Delaware corporation ("Buyer"), and Christopher T. Waters, Daniel K. Waters and Joel K. Waters. (collectively the "Seller").

WITNESSETH:

WHEREAS, Seller is the owner of certain real property located in Blount County, TN, and more particularly described on Exhibit A (the "Property"); and

WHEREAS, Buyer is interested in developing, constructing, installing, and operating a solar electric generating system on the Property for the production and distribution of electricity (the "Project"); and

WHEREAS, Seller has agreed to grant Buyer an option to purchase the Property so that Buyer may negotiate a purchase power agreement (a "PPA") for the electricity to be generated by the Project and secure financing to develop the Project.

NOW THEREFORE, for and in consideration of [redacted] cash in hand paid, the mutual covenants, promises, and agreements hereinafter set forth and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Seller and Buyer agree as follows:

ARTICLE I.
OPTION

1.1 Option. Seller hereby grants to Buyer the exclusive right and option (the "Option") to purchase the Property. Buyer agrees to provide to Seller a minimum 90-day notice of its intent to exercise the Option so that Seller can make appropriate arrangements with its renters of the farmland and residence that use the driveway. Buyer agrees that such Option would not be exercised within the first 6-months of the Effective Date.

1.2 Option Term. The term of the Option (the "Option Term") shall be TWELVE (12) months, commencing on the Effective Date and expiring on the TWELFTH (12th)-month anniversary thereof; provided, that Buyer shall have the right to terminate this Agreement without recourse for any reason or no reason by providing written notice to Seller on or before the expiration of a SIXTY (60)-day due diligence period, which period shall commence on the Effective Date (the "Due Diligence Period").

1.3 Option Consideration. As consideration for the Option, Buyer shall pay to Seller the sum of [redacted] within TEN (10) days after the Effective Date. Unless Buyer exercises its right to terminate this Agreement during the Due Diligence Period, Buyer will pay Seller the sum of [redacted] (the "First Option Consideration") within TEN (10) days after the expiration of the Due Diligence Period. During the 7th month after the Effective Date, Buyer will pay Seller the additional sum of [redacted]

[redacted] (the "Second Option Consideration"). The First and Second Option Consideration shall be nonrefundable, except as otherwise expressly set forth pursuant to the terms of this Agreement and shall be applied against the Purchase Price at Closing. Payments to be divided equally between the three individual sellers and issued as a check and mailed to each to addresses to be provided separately unless other direct deposit methods are agreed to.

1.4 Purchase Price. If Buyer exercises the Option, the purchase price (the "Purchase Price") for the Property shall be [redacted] per acre if Closing occurs within 12 months of the Effective Date and 1.25% per month higher if Closing occurs anytime in the month after the initial 12 months from the Effective Date (for example, if Closing anytime in the 15th month after the Effective Date the price would 3.75% higher), which acreage shall be rounded to the nearest hundredth of an acre and shall be determined by the Survey obtained pursuant to Section 2.2 herein. Subject to the credits and adjustments provided for herein, the entire Purchase Price shall be paid by Buyer to Seller, in immediately available funds, at the closing and consummation of the transaction contemplated by this Agreement (the "Closing").

1.5 Extension of Option Term. Buyer may extend the Option Term for ONE (1) additional period (each, an "Extension Period") subject to the satisfaction of the conditions in this Section. If exercised, the first Extension Period shall be SIX (6) months in duration and shall commence at the expiration of the Option Term if Buyer deposits with Seller the sum of [redacted] (the "First Extension Payment") before the expiration of the Option Term and Buyer acknowledges and accepts the Purchase Price is increased by 1.25% per month higher for Closing any time in the month after the initial 12 months from the Effective Date (for example, if Closing anytime in the 15th month after the Effective Date the price would 3.75% higher). The First Extension Payment (sometimes referred to herein as an "Extension Payment") shall be nonrefundable subject to the terms of this Agreement and shall be applied against the Purchase Price at Closing.

1.6 Sunset Clause. In the event there is no closing within 30 days after the Option Term expiration then the Agreement shall be terminated and the responsibilities of the parties are ended with the exception of Buyer's obligations in Section 2.1 and all payments made to Seller are non-refundable except in the case of Seller's Failure to Close in Section 6.1 (b).

ARTICLE II.
PRE-CLOSING COVENANTS

2.1 Right of Entry. While this Agreement remains in force and effect, Buyer and Buyer's agents, employees, contractors and representatives shall have the right to enter upon the Property for purposes of performing inspections, tests, land planning, site assessments, geotechnical reviews (including, but not limited to, soil tests and borings), environmental assessments, surveys, engineering, meteorological and feasibility studies and other similar activities as Buyer deems necessary or desirable; provided, however, any such entry shall be made during reasonable daytime hours and upon at least forty-eight (48) hours' notice to Seller. Buyer acknowledges that persons and livestock use the Property and any Buyer sponsored activities performed on the Property will be conducted to safety standards consistent with the industry standard for the activities being performed on the Property to include at a minimum immediately filling any holes after drilling. Buyer agrees to protect, indemnify and hold Seller harmless from any and all legal claims or liability associated with Buyer, its authorized agents, employees and independent contractors resulting from said access to and on the property. Buyer will be responsible for any reasonable direct costs associated with repairing damage to the Property or harm caused to the persons or livestock using the Property resulting from Buyer's entry, except to the extent caused by such persons' negligence.

2.2 Title and Survey. Buyer will at its own expense, obtain a commitment to issue an ALTA owner's policy of title insurance covering the Property, prepared and certified by the Title Company (as

defined below), showing any existing encumbrances affecting the Property, in whom fee simple title is currently vested, and such other matters as Buyer may require (the "Commitment"). A survey of the Property will be prepared at Buyer's expense by a reputable land surveyor selected by Buyer (the "Survey"). If the Survey has been prepared, the legal description attached hereto as Exhibit A shall be replaced by a new Exhibit A, which shall be subject to reasonable approval of Seller as evidenced in writing, containing a legal description based upon the Survey and, thereafter, such new legal description shall be the legal description of the Property for all purposes relating to this Agreement. Buyer shall have until 30 days after receipt of the later of the Commitment and Survey to notify Seller of any objections Buyer may have (in its sole discretion) to the Commitment or the Survey (the "Title Objection Deadline"). If Buyer notifies Seller of objections to the Commitment or the Survey on or before the Title Objection Deadline, then within ten (10 days of Seller's receipt of such notice, Seller shall notify Buyer in writing whether Seller elects to cure such objections (and Seller's failure to provide such a notice shall be deemed an election by Seller not to cure any such objections). If Seller elects to cure any such objection, then Seller shall make diligent efforts to remove, satisfy, or cure the same at or prior to Closing. If Seller elects (or is deemed to have elected) not to cure any objection specified in Buyer's notice, or if Seller notifies Buyer of Seller's intent to cure any objection and thereafter Seller fails or is unable to effect a cure prior to Closing, then in either case, Buyer shall have the right to terminate this Agreement by sending written notice thereof to Seller on or before the expiration of the Option Term. In the event Seller's notification (or deemed notification) of its election not to cure or failure to cure any such objection occurs after the Option Term has expired and Buyer has provided notice of its intent to exercise the Option as set forth herein, then Buyer shall have the right to terminate this Agreement by sending written notice thereof to Seller within ten (10) days of receipt of Seller's notice. Alternatively, if Seller is unable to effect a cure prior to Closing, Buyer shall have the right to extend Closing by providing written notice to Seller for at least twenty (20) days to afford Seller additional time to effect a cure to Buyer's objection. Upon delivery of any notice of termination under this Section, this Agreement shall terminate, Seller shall immediately return the Option Consideration to Buyer if terminated within 180 days of the Effective Date otherwise it is non-refundable, and thereafter neither party hereto shall have any further rights, obligations, or liabilities hereunder except to the extent that any right, obligation, or liability set forth herein expressly survives termination of this Agreement. Regardless of whether Buyer furnished to Seller any notice of objections pursuant to the foregoing provisions of this Section, Buyer may, at any time after the Title Objection Deadline, notify Seller in writing of any objections to Commitment or Survey matters first raised by the Title Company or the surveyor and first arising between (a) the effective date of the Commitment or any update to the Survey and (b) the Closing Date; provided, however, that Buyer must notify Seller of any such objections within ten (10) days of the later of Buyer's first receipt of the updated Commitment, an update to the Survey or other document, whichever first provides notice of the condition giving rise to any such objection. With respect to any objections to title or survey matters set forth in such notice, Seller and Buyer shall have the same respective rights as those which apply to any original notice of objections made by Buyer on or before the Title Objection Deadline.

2.3 Cooperation. Upon Buyer's request, Seller agrees at no cost or liability or substantial amount of time to reasonably cooperate with, assist and join in Buyer's efforts to obtain a PPA and any other agreements, financing, permits, licenses, variances, easements, releases, and approvals that Buyer deems necessary or desirable for its acquisition of the Property or development of the Project. Seller agrees to provide to Buyer, within ten (10) days of execution hereof, copies of all leases, contracts, and agreements relating to the Property, title insurance policies, certificates of title, title opinions, other prior searches or certifications of the surface or minerals of the Property, surveys, plats, or other maps of the Property within Seller's custody or control. At Seller's request, Buyer agrees to provide updates on the status of the Project with Seller.

2.4 Alterations or Improvements. With the exception of the following two items, while this Agreement remains in force and effect: (i) Seller shall not make any improvements, changes, alterations or additions to the Property; and (ii) Seller shall not enter into any agreements encumbering the Property.

(a) Buyer acknowledges and accepts the Property is currently under an oral month-to-month lease between Seller and lessee that allows the Property to be used as pasture land for livestock and up to ten (10) acres for growing crops in the front part of the Property. Seller shall, within seven (7) days of receipt of Buyer's notice of exercise of the Option, provide notice to such lessee terminating the oral lease agreement as of the projected Closing Date.

(b) Buyer acknowledges the Property is adjacent to and impacted by the planned Tennessee Department of Transportation (TDOT) SR 162 Pellissippi Parkway Extension project and that TDOT has advised Seller it anticipates to start negotiations for the right-of-way, easement, and/or land purchase in early 2022. Seller is permitted to negotiate, agree to terms, and/or sell affected portions of the Property impacted by the TDOT project, so long as Seller provides Buyer notice of the acreage affected by such agreements. In the event that terms are agreed to between the Seller and TDOT but are not completed prior to Closing, then such terms would be assigned to the Buyer and the Buyer agrees to accept and fulfill such terms with TDOT after Closing. During the term of this Agreement, Seller shall disclose to Buyer any such terms agreed to between Seller and TDOT that are not completed prior to Closing. Notwithstanding anything to the contrary in this Agreement, Buyer's exercise of the Option shall be conditioned upon Buyers review and approval of the terms agreed to between Seller and TDOT (including, without limitation, any reduction in acreage of the Property in connection with completed transactions). If such transactions are complete prior to the Closing, any affected acres shall not be included in the Property conveyed (or the calculation of the Purchase Price). Notwithstanding Section 1.4 above, in the event that terms are agreed to between Seller and TDOT prior to the Closing, but the transaction is not complete, the Purchase Price for any affected acreage shall equal the amount Buyer is to receive from TDOT for the affected acreage.

2.5 Monetary Liens. Notwithstanding anything to the contrary contained herein, Seller shall cause all liens, monetary judgments, mortgages, deeds of trust, security interests and other similar agreements encumbering the Property (collectively "Monetary Liens") to be released and discharged at or prior to Closing. In the event Seller fails to release and discharge all of the Monetary Liens by Closing, Buyer may, in addition to any of the other available remedies, take all actions necessary to cause such Monetary Liens to be released and discharged and offset the cost thereof against the Purchase Price.

ARTICLE III.
REPRESENTATIONS AND WARRANTIES

3.1 Representations & Warranties. As of the Effective Date, Seller represents, warrants and covenants to Buyer, which representations will be reaffirmed in connection with the Closing:

(a) Seller has obtained all consents and permissions (if any) related to the transactions herein contemplated and required under any covenant, agreement, encumbrance, law or regulation by which Seller or the Property is bound;

(b) the execution, delivery and performance of this Agreement by Seller (i) does not conflict with or result in a violation of any judgment, order or decree of a court or arbiter that is binding upon Seller or the Property, and (ii) does not constitute a default under any contract, agreement or other instrument by which Seller or the Property is bound;

(c) With the exception of Section 2.4 (a) and (b), Seller is not party to any lawsuits, governmental actions or other proceedings that could affect Seller's ability to perform its obligations under this Agreement and, to Seller's knowledge, no such lawsuits, actions or proceedings are being threatened;

(d) With the exception of Section 2.4 (a) and (b), Seller is not party to any lawsuits, governmental actions or other proceedings (including, but not limited to, condemnation or eminent domain proceedings) related to the Property and, to Seller's knowledge, no such lawsuits, actions or proceedings are being threatened;

(e) With the exception of Section 2.4 (a) and (b), Seller has received no notice and has no knowledge that the Property, or the use and operation thereof, is in violation of any municipal or governmental laws, ordinances, regulations, licenses, permits and authorizations, or of any restrictive covenants, declarations or similar agreements affecting the Property;

(f) to Seller's knowledge, no hazardous or toxic substances, materials, wastes, pollutants or contaminants have been discharged, released, stored, generated or allowed to escape on, under or about the Property in violation of applicable laws or in quantities that could require monitoring, investigation, removal or remediation under applicable laws;

(g) Seller is not a person with whom U.S. persons are prohibited from doing business with under applicable laws, including, without limitation, the regulations of the Office of Foreign Assets Control ("OFAC") of the U.S. Department of Treasury (e.g. OFAC's Specially Designated and Blocked Persons list), Executive Order 13224 and the USA PATRIOT Act;

(h) Seller is the fee owner of the Property and has good and marketable fee simple absolute title to the Property; and

(i) to Seller's knowledge other than the Property's participation in the Tennessee greenbelt program, the Property is not subject to any land use restrictions that would prohibit the development of the Property for Buyer's intended use, nor is the Property enrolled in, or subject to, any conservation, preservation, tax relief, or similar program that has eligibility criteria requiring the Property to maintain a specific use (e.g., the Agricultural, Forest and Open Space Land Act of 1976 (Tenn. Code Ann. §67-5-1001 et seq.)

3.2 The representations and warranties of Seller set forth in Section 3.1, as updated by Seller's Reaffirmation of Representations and Warranties (as defined below), shall survive Closing for a period of eighteen (18) months after Closing; provided, however, that Seller's representations in Section 3.1(h) shall survive for the applicable statute of limitations.

ARTICLE IV.
CLOSING

4.1 Conditions to Closing. Notwithstanding Buyer's exercise of the Option, Buyer's obligation to purchase the Property under this Agreement is contingent upon the following conditions being satisfied at the time the Closing is scheduled to take place:

(a) each representation and warranty of Seller being true and accurate as of the Closing, and Seller not having defaulted under or breached any of the provisions of this Agreement;

(b) Buyer at its expense being able to obtain (i) an ALTA Owner's Policy of Title Insurance 6-17-06 (the "Title Policy"), issued by and through Fidelity National Title Insurance Company, in the amount of the Purchase Price, insuring that good and marketable fee simple absolute title to the Property is vested in Buyer, subject only to the real property taxes for the year which the Closing shall occur and subsequent years, a lien, but not yet due and payable, easements, restrictions, reservations and other matters of record as of the Effective Date (except Monetary Liens, which shall be paid by Seller prior to or at Closing) and the Title Company's standard printed exclusions from coverage (the "Permitted Exceptions"),

or (ii) a marked-up title commitment irrevocably and unconditionally agreeing to issue the Title Policy to Buyer;

(c) With the exceptions noted in Section 2.4 (a) and (b), no material adverse change occurring in the physical condition of Property, including, without limitation, environmental condition;

(d) With the exceptions noted in Section 2.4 (a) and (b), no action or proceeding that is adverse to the Property or Buyer's intended development of the Property having been instituted or threatened in any court or by governmental authority (including, but not limited to, condemnation or eminent domain proceedings); and

(e) Buyer being satisfied in its sole and absolute discretion that the Property is and will be suitable for its intended use, including, but not limited to, the Project ,and that such use will be free from interference by current and potential future mineral operations upon the Property and any land use restrictions that would prohibit the development of the Property for Buyer's intended use.

If any of the conditions set forth in this section are not satisfied at the time the Closing is scheduled to occur, then Buyer may, at its option, terminate this Agreement by written notice to Seller. Nothing contained in this section shall be deemed to limit the rights and remedies available to Buyer as a result of Seller's default under or breach of this Agreement.

4.2 Closing Date. Buyer can exercise the option at any time before the end of the Option Term by giving written notice of its election to exercise the option to Seller at the address specified in Section 8.1 herein. If Buyer exercises the Option, the Closing shall occur on or before 5:00 p.m. local time on the date that is mutually agreed within NINETY (90) days after Buyer notifies Seller that it is exercising the Option, which date shall be specified in the notice of exercise. The parties intend to close remotely with counterpart documents to be delivered to the Closing Agent, unless otherwise agreed upon by the Parties in writing. The "Closing Agent" shall be Fidelity National Title Insurance Company located at 6840 Carothers Pkwy, Suite 200, Franklin, TN 37067.

4.3 Closing. At the Closing, Seller shall deliver the following items to Buyer, properly executed and notarized and in form and substance reasonably acceptable to Buyer, which items will be prepared by Buyer, at Buyer's expense and subject to review and reasonable approval of Seller:

(a) a warranty deed (the "Deed") conveying good and marketable fee simple title to the Property to Buyer, together with all of Seller's interest in the land lying beneath the roads and other rights-of-way and easements appurtenant to the Property and any minerals or mineral interests under the Property, if any. Seller shall convey the Property to Buyer (and the warranties contained in the Deed shall be made) subject only to the Permitted Exceptions;

(b) a non-exclusive access easement for the driveway suitable for automobiles, to be recorded in the real property records of Blount County at the Closing, from Buyer in favor of Seller and its successors and assigns granting access rights to the residence and outbuildings retained by Seller and its successors so long as they are used for residential purposes to include renting of the residence and/or outbuildings to third-parties. Buyer also agrees to (i) provide 60-day notice to Seller and its successors prior to the start of any modification to the driveway that may affect suitable access to the residence and/or outbuildings by automobiles and (ii) to provide an appropriate alternative access solution for automobiles to Seller and its successors during the modification to the driveway.

(c) a general assignment conveying to Buyer any improvements and fixtures located on the Property, together with all rights warranties, guaranties, utility contracts, permits and approvals (governmental or otherwise), governmental credits, certificates of occupancy, intangible personal property

owned and used by Seller in connection with the Property, including all freely assignable telephone numbers, photographs associated with the Property, surveys, plans, specifications, drawings, renderings and trade names used in connection with, or primarily related to, the Property;

(d) a certificate dated as of the date of Closing stating that the representations and warranties of Seller contained in Section 3.1 of this Agreement are true and correct in all material respects as of the date of Closing ("Seller's Reaffirmation of Representations and Warranties");

(e) closing disbursements evidencing the satisfaction and termination of all Monetary Liens. Seller shall furnish Buyer with copies of recorded releases of all Monetary Liens within a reasonable time after Closing;

(f) an owner's affidavit sufficient to cause the exceptions for mechanics' and materialmen's liens, the rights of parties in possession (including, without limitation, rights to oil, mineral, or gas rights to the Property), and unrecorded matters to be deleted from the Title Policy, and such other documents as the Title Company may require to issue the Title Policy to Buyer; and

(g) all other documents, instruments, certificates and affidavits that are reasonably required to carry out the transaction contemplated by this Agreement, including, but not limited to, an IRS §1445 Certificate.

In addition, with the exceptions noted in Section 2.4 (b), immediately upon the completion of the Closing, Seller shall deliver exclusive possession of the Property to Buyer

4.4 Closing Costs. At Closing: (i) Buyer shall pay one half of the fees charged by the Closing Agent to coordinate the Closing; (ii) Buyer shall pay the cost of the Title Policy; (iii) Buyer shall pay all recording costs associated with the recording of the Deed; (iv) Seller shall pay one half of the fees charged by the Closing Agent to coordinate the Closing; (v) Seller shall pay all transfer taxes; and (vi) Seller shall pay any and all costs and expenses associated with removing the Property from any land use restrictions that would prohibit the development of the Property for Buyer's intended use (including, without limitation, rollback taxes under the Agricultural, Forest and Open Space Land Act of 1976 (Tenn. Code Ann. §67-5-1001 et seq.)). Each of the parties shall be responsible for paying the attorneys' fees it incurs in connection with the transaction contemplated by this Agreement.

4.5 Closing Statement. At Closing, Seller and Buyer shall execute and deliver a closing statement which shall set forth the Purchase Price, all credits against the Purchase Price and the amount of all prorations, adjustments, payments and disbursements required under this Agreement.

ARTICLE V.
PRORATIONS, CREDITS AND ADJUSTMENTS

5.1 Calculation. All prorations provided to be made under this section "as of the Closing" shall be made as of 11:59 P.M. local time on the date of the Closing, with the effect that Seller shall pay the portions of the expenses being prorated hereunder that are allocable to periods on or before the date of Closing and Buyer shall pay the portions of expenses being prorated hereunder that are allocable to periods after the date of Closing.

5.2 Property Taxes. Real property taxes and assessments (general and special, public and private) levied against the Property for the year in which the Closing takes place shall be prorated between Seller and Buyer as of the Closing and paid at Closing, and Seller shall also pay any unpaid real property taxes and assessments allocable to prior years at such time. If any real property tax or assessment to be paid by the Seller and Buyer under this Agreement cannot be paid at Closing, Buyer shall receive a credit

against the Purchase Price equal to Seller's share thereof, and Buyer shall thereafter be responsible for tendering the amount of such credit to the taxing authorities.

5.3 Utility Expenses and Deposits. Seller shall pay, when due, all charges for utilities furnished to the Property prior to Closing, and Seller shall be entitled to retain any utility deposits made by Seller which are refunded. Buyer shall be responsible for making arrangements for the continuation of utilities to the Property following Closing; provided Seller agrees to cooperate with Buyer in connection therewith and, to the extent necessary, to allow Buyer to obtain such utilities, including, without limitation, closing any utility accounts maintained by Seller.

5.4 Unknown Amounts. In the event any amount to be prorated between the parties or credited to either of the parties under the terms of this Article V is not known with certainty as of the Closing, the parties shall use an estimate of such amount at Closing, with a readjustment to be made between the parties after Closing as soon as such amount is finally known. If more current information is not available, such estimates shall be based upon the prior operating history of the Property and the most recent prior bills.

ARTICLE VI.
DEFAULT AND REMEDIES

6.1 Seller's Failure to Close/Buyer's Remedies. Except in the case of a delay in the closing due to incapacitation or death of a Seller, if Seller fails to sell the Property to Buyer and such failure constitutes a default under this Agreement, then, unless Seller cures such failure within five (5) business days after Buyer gives it written notice thereof, Buyer, as its sole and exclusive remedy, may either: (i) obtain specific performance of this Agreement and recover from Seller all damages it suffers as a result of such default, including without limitation, all attorneys' fees and costs incurred in connection with the enforcement of this remedy, or (ii) terminate this Agreement, recover from Seller all damages it suffers as a result of such default (including, but not limited to, the loss of the benefit of its bargain hereunder), and receive a refund of the Option Consideration and all Extension Payments, as applicable.

6.2 Buyer's Failure to Close/Seller's Remedies. If Buyer fails to purchase the Property and such failure constitutes a default under this Agreement, then, unless Buyer cures such failure within five (5) business days after Seller gives it written notice thereof, Seller, as its sole and exclusive remedy, may terminate this Agreement and retain the Option Consideration and all applicable Extension Payments as full and agreed upon liquidated damages. With the exception of Buyer's obligations under Section 2.1, Buyer and Seller agree that said liquidated damages are reasonable given the circumstances now existing, including, without limitation, the range of harm to Seller that is reasonably foreseeable and the anticipation that proof of Seller's actual damages would be costly, impractical and inconvenient. SELLER ACKNOWLEDGES THAT IT: (i) HAS READ THIS SECTION AND UNDERSTANDS THE SAME; AND (ii) SPECIFICALLY WAIVES AND RELINQUISHES ALL OTHER REMEDIES THAT IT MAY BE ENTITLED TO PURSUE AT LAW OR IN EQUITY ON ACCOUNT OF BUYER'S FAILURE TO PURCHASE THE PROPERTY IN BREACH OF THIS AGREEMENT, INCLUDING, WITHOUT LIMITATION, SPECIFIC PERFORMANCE WITH THE EXCEPTION OF BUYER'S OBLIGATIONS UNDER SECTION 2.1.

6.3 Other Defaults/Remedies. Except as otherwise provided in Sections 6.1 and 6.2 above, if Seller or Buyer defaults under any of the terms of this agreement, then, unless such default is cured within five (5) business days after the non-defaulting party gives the defaulting party written notice thereof or fifteen (15) business days, if such default cannot be cured within said five (5) business day period and the defaulting party commences to cure such default during the five (5) business day period and diligently and continuously pursues a cure, the non-defaulting party shall have the right to obtain all remedies available at law or in equity, including, without limitation, injunctive relief. Notwithstanding anything to the contrary

contained herein, in no event shall either party be liable for exemplary or punitive damages as a result of its default under this Agreement.

ARTICLE VII.
CONDEMNATION

7.1 Condemnation. Prior to the Closing, Seller shall bear the entire risk of loss with respect to the Property caused by any taking of the Property by power of eminent domain (a "Taking"). If there is a Taking and Buyer exercises the Option, then Seller shall assign, transfer and convey all condemnation awards paid or payable as a result of the Taking to Buyer at Closing; provided if such transfer would impair recovery of any such amounts, the Purchase Price shall be reduced by and Seller shall retain such amounts. Seller shall not reach a settlement or agreement related to any Taking, unless Buyer consents to the settlement or agreement, in writing. Seller and Buyer acknowledge that Seller is in discussions with TDOT regarding the SR 162 Pellissippi Parkway Extension project as further described in Section 2.4(b). In the event any terms of this Section 7.1 conflict with the provisions of Section 2.4(b), Section 2.4(b) shall control.

ARTICLE VIII.
GENERAL PROVISIONS

8.1 Notices. All notices, consents, approvals and other communications (collectively, "Notices") which may be or are required to be given by either Seller or Buyer under the Agreement shall be properly given only if made in writing and sent to the address of Seller or Buyer, as applicable, set forth below by (i) hand delivery, (ii) U.S. Certified Mail, Return Receipt Requested, (iii) nationally recognized overnight delivery service, or (iv) electronic mail so long as it is followed by delivery of one of the methods in (ii) or (iii) above on the following business day. Such Notices shall be deemed received upon receipt if sent hand delivery and upon deposit if sent by U.S. Mail, nationally recognized overnight delivery service, or electronic mail.

If to Seller: Christopher T. Waters, Daniel K. Waters and Joel K. Waters

8828 Nubbin Ridge Rd.
Knoxville, TN 37923

danielkwaters@yahoo.com
toddwatersemail@yahoo.com
joelwaters70@gmail.com

If to Buyer: Silicon Ranch Corporation
222 2nd Avenue S., Suite 1900
Nashville, TN 37201
Attn: Dylan Hall
E-mail: dylan.hall@siliconranch.com

With a copy to: Silicon Ranch Corporation
222 2nd Avenue S., Suite 1900
Nashville, TN 37201
Attn: General Counsel
E-mail: richard.johnson@siliconranch.com
E-mail: notices@siliconranch.com

Either party may change its address for Notices by giving written notice to the other party in accordance with this provision.

8.2 Brokers. On the Effective Date and at Closing, Seller and Buyer represent and warrant to each other that they have not dealt with any broker, brokerage firm, listing agent or finder in connection with the transaction contemplated by this Agreement, and each party to this Agreement agrees to indemnify, defend and hold harmless the other party from and against any claims for a brokerage commission, finder's fee or other compensation made by a broker, brokerage firm, listing agent or finder with whom such party has dealt.

8.3 Covenants Running With Land. Buyer shall have the right to record this Agreement. Buyer rights under this Agreement shall run with the land and be superior to any right, estate, claim or interest in the Property (including, but not limited to, any agreement affecting the Property) that is first created or recorded after this Agreement. If Buyer acquires any portion of the Property, Buyer shall have the right, at Buyer's option, to terminate any such subordinate right, estate, claim, interest or agreement, at no cost or liability to Buyer, or to accept title subject thereto.

8.4 Entire Agreement; Amendment. This Agreement (i) constitutes the entire agreement and understanding of Buyer and Seller with respect to the subject matter hereof, and (ii) may be amended only by a written instrument executed by Buyer and Seller.

8.5 Severability. Wherever possible, each provision of this Agreement shall be interpreted in such a manner as to be effective and valid under applicable law. In the event any provision of this Agreement shall be prohibited by or invalidated under applicable law, the remaining provisions of this Agreement shall remain fully effective.

8.6 Survival. All of the representations, warranties, covenants and other provisions of this Agreement to include Section 4.3 (b) shall survive the Closing and the delivery of the deed. In the event there is no Closing, Buyer's obligations in Section 2.1 shall survive for nine (9) months following termination of this Agreement.

8.7 Governing Law. This Agreement shall be governed by and construed under the laws of the State of Tennessee.

8.8 Binding Effect. This Agreement shall be binding upon, and inure to the benefit of, the parties hereto and their respective successors and assigns.

8.9 No Waiver. No waiver by Seller or Buyer of any provision of this Agreement shall be deemed to have been made unless expressed in writing and signed by the party charged therewith. No delay or omission in the exercise of any right or remedy accruing to Seller or Buyer upon any breach of this Agreement shall impair such right or remedy or be construed as a waiver of such breach. The waiver by Seller or Buyer of any breach shall not be deemed a waiver of any other breach of the same or another provision of this Agreement.

8.10 Assignment. Buyer may freely assign its rights and obligations under this Agreement provided that Buyer notifies Seller of such new assignment and discloses new contact information. Seller may assign its negotiated terms with TDOT pursuant to Section 2.4(b).

8.11 Construction of Agreement. This Agreement shall be construed according to its fair meaning and not strictly for or against any of the parties hereto. Seller and Buyer have both agreed to the particular language of this Agreement, and any question regarding the meaning of any provision of this Agreement shall not be resolved by a rule providing for interpretation against the party who caused the

uncertainty to exist or against the draftsman. In this Agreement, the masculine gender includes the feminine and neuter, and the singular number includes the plural, and vice versa, where the context so indicates.

8.12 Time of the Essence. For purposes of this Agreement, time shall be considered of the essence.

8.13 Memorandum of Option. Buyer shall have the right to record a memorandum of option in the real property records of Blount County, TN, and Seller agrees to execute and deliver its counterpart to Buyer upon request therefor. In the event a memorandum is recorded but there is no closing, Buyer agrees to remove the memorandum from the property records of Blount County within 30 days of the Seller request.

8.14 Attorneys' Fees. In the event any legal proceeding is commenced related to this Agreement, the prevailing party in such proceeding shall be entitled to recover its reasonable attorneys' fees, costs and expenses of litigation from the non-prevailing party therein.

8.15 Exhibits. Buyer and Seller acknowledge and agree that all exhibits referenced in this Agreement are attached hereto and incorporated herein by reference.

8.16 Dates. If any date set forth in this Agreement for the performance of an obligation, the giving of a notice, or the expiration of a time period falls on a Saturday, Sunday, or bank holiday, then this Agreement shall be deemed to be automatically revised so that such date falls on the next occurring business day.

8.17 Counterparts. This Agreement and any amendments may be executed in counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same document. Digital photos and files transmitted by electronic mail of individual signed pages shall constitute as originals.

[SIGNATURES ON FOLLOWING PAGES]

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the last date signed below.

SELLER:

Daniel K. Waters Date

Joel K. Waters Date

Christopher T. Waters Date

BUYER:

SILICON RANCH CORPORATION

By: Matt Beasley (Jan 31, 2022 17:51 CST)

Name: Matt Beasley

Title: Chief Commercial Officer

Date: Jan 31, 2022

EXHIBIT A

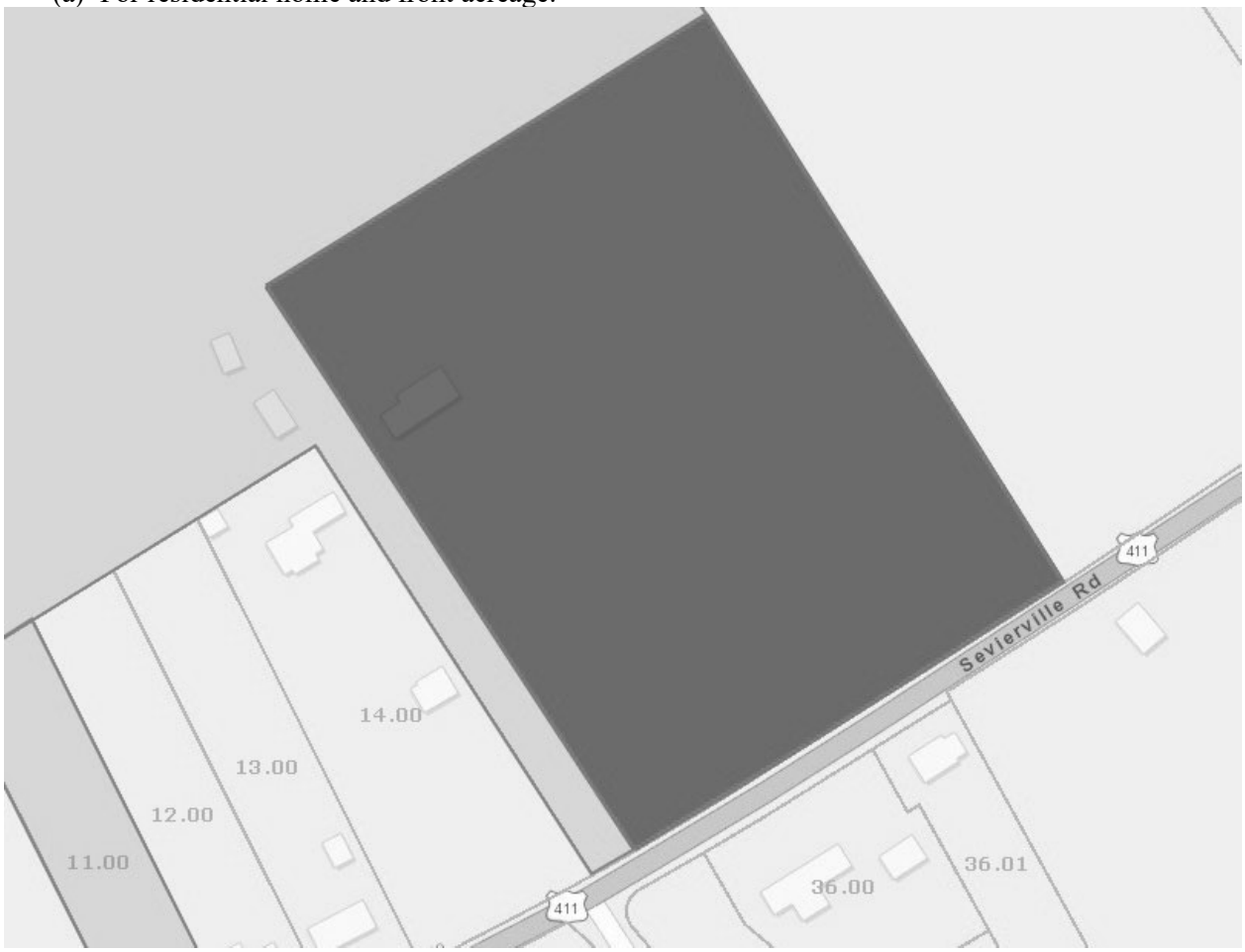
DESCRIPTION OF PROPERTY

Property includes the entire parcel including the driveway with the exception of the approximate 9.4 acreage from Sevierville Road to the back of the primary residence and separate outbuildings.

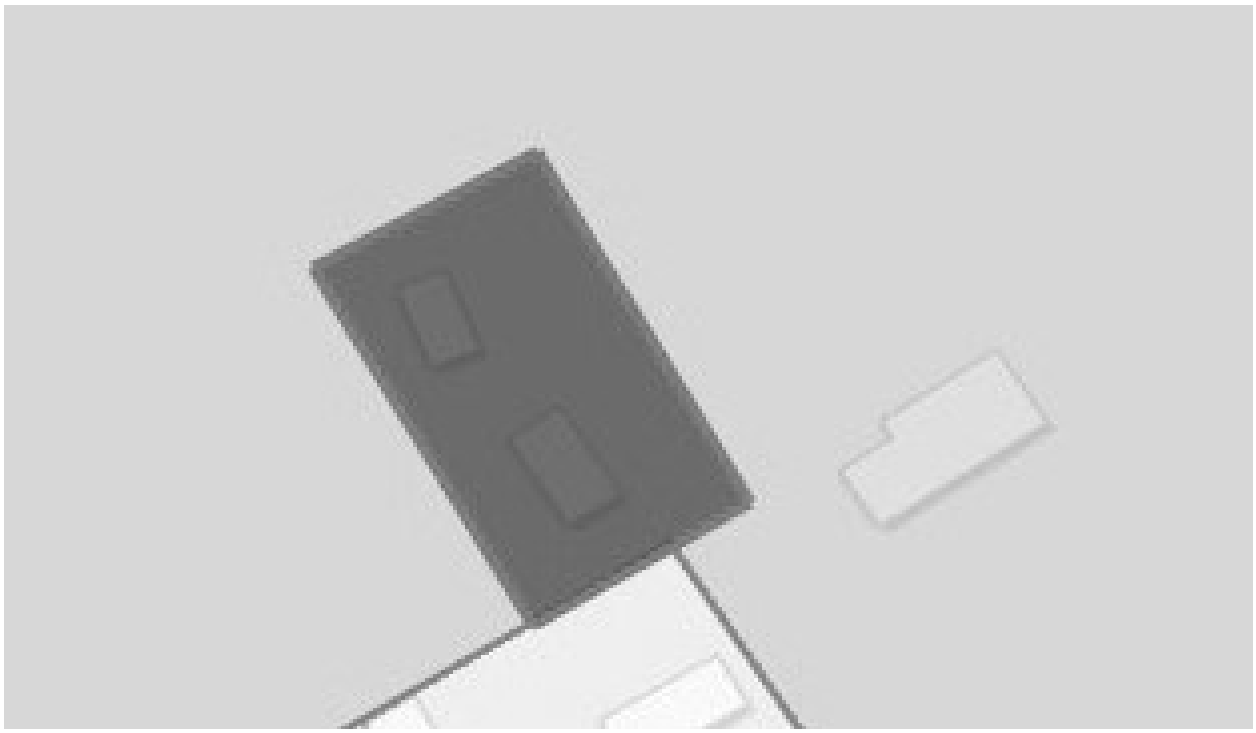
Parcel: 048 015.00
Acres: Approximately 128 acres

Approximate portion to be carved out that is not included in the Property shown below:

(a) For residential home and front acreage:



(b) For separate outbuildings separated by driveway (only 2 of 3 shown):



1122TN - Waters Option Agreement (SR Maryville East)

Final Audit Report 2022-01-31

Created:	2022-01-31
By:	Lucas Wilkinson (luke.wilkinson@siliconranchcorp.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAAdSX3PvaNZVlhMv9F9w2iXW-UlnOpdLVH

"1122TN - Waters Option Agreement (SR Maryville East)" History

Document created by Lucas Wilkinson (luke.wilkinson@siliconranchcorp.com)
2022-01-31 - 11:39:44 PM GMT- IP address: 99.42.9.157

Document emailed to Matt Beasley (matt.beasley@siliconranchcorp.com) for signature
2022-01-31 - 11:40:09 PM GMT

Email viewed by Matt Beasley (matt.beasley@siliconranchcorp.com)
2022-01-31 - 11:51:25 PM GMT- IP address: 104.28.32.190

Document e-signed by Matt Beasley (matt.beasley@siliconranchcorp.com)
Signature Date: 2022-01-31 - 11:51:40 PM GMT - Time Source: server- IP address: 68.52.137.132

Agreement completed.
2022-01-31 - 11:51:40 PM GMT

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the last date signed below.

SELLER:

Daniel K. Waters 2/1/2022

Daniel K. Waters Date

Joel K. Waters Date

Christopher T. Waters Date

BUYER:

SILICON RANCH CORPORATION

By: Matt Beasley (Jan 31, 2022 17:51 CST)

Name: Matt Beasley

Title: Chief Commercial Officer

Date: Jan 31, 2022

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the last date signed below.

SELLER:

Daniel K. Waters — Date

Joel K. Waters — 2-1-22 — Date

Christopher T. Waters — Date

BUYER:

SILICON RANCH CORPORATION

By: Matt Beasley (Jan 31, 2022 17:51 CST)

Name: Matt Beasley

Title: Chief Commercial Officer

Date: Jan 31, 2022

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Joel K. Waters Date

Christopher T. Waters 2-1-22

Christopher T. Waters Date

BUYER:

SILICON RANCH CORPORATION

By: Matt Beasley (Jan 31, 2022 17:51 CST)

Name: Matt Beasley

Title: Chief Commercial Officer

Date: Jan 31, 2022