SEC, Inc.

SITE ENGINEERING CONSULTANTS
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Billy Plant
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May 22, 2024

Division of Water Resources
Tennessee Department of Environment and Conservation (TDEC)
Columbia EFO
1421 Hampshire Pike
Columbia, TN 38401

RE: Hydrological Determination (HD) Report – Trotwood Properties - Columbia, TN

On three separate days Site Engineering Consultants, Inc. conducted a hydrological determination investigation on the property located at the corner of Trotwood Avenue and Old Zion Extension in Columbia, Tennessee Map 111 Parcels 29.00, 29.05, 29.06). The dates for the site visits were December 29, 2022; January 5, 2023; March 18, 2024. General coordinates for the site are 35.578699, -87.134790. Billy Plant (TN QHP 1207-TN21) of Site Engineering Consultants conducted the investigation and prepared the attached report.

The area evaluated in the present report is 135(+/-) acres of rolling fields with some woodland. Six hydrologic features were identified and are listed in the table on the following page along with two upland points.

The review area encompassed several parcels with multiple owners. They can be reached through their agent, John Ross Hill at (931) 224-1205 or via email at johnrosshill@gmail.com. Signed letters of permission to access the property are included in this report. The property is under consideration by John Maher Builders, Inc. Jack Maher serves as their contact. He can be contacted by email at jack@johnmaherbuilders.com telephone at (931) 489-1981.

All information submitted is true, accurate, and complete to the best of my knowledge. Please contact me via cell phone or email if you have any questions.

Sincerely,

Billy Plant

Feature	Size	Location/Begin	End
STM-1	1458'	35.580707, -87.133048	35.576802, -87.132714
STM-2	101'	35.578919, -87.133207	35.579090, -87.132997
WWC-1	139'	35.5804000, -87.132615	35.580522, -87.133037
WTL-1	0.71 acre	35.580957, -87.139881	upland 35.580745, -87.139660
WTL-2	0.77 acre	35.578581, -87.133483	upland 35.578355, -87.133316
WTL-3	0.03 acre	35.578845, -87.132628	upland 35.578790, -87.132538
UPL-1		35.580379, -87.132339	
UPL-2		35.579352, -87.132466	

HYDROLOGIC DETERMINATION REPORT

Trotwood Avenue at Old Zion Road Exd
Lat: 35.578699
Long: - 87.134790

Prepared by
Billy Plant

Contents:

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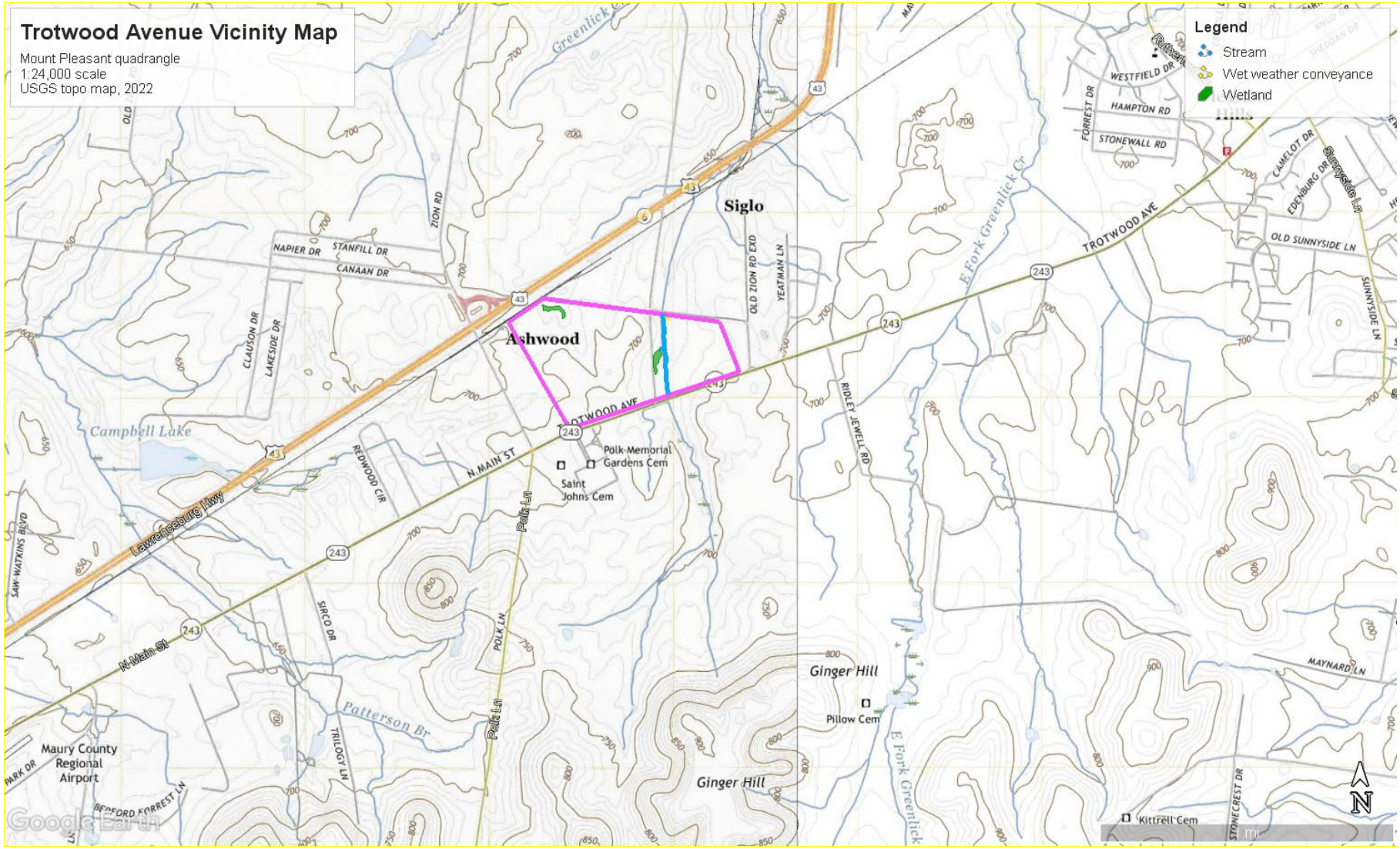
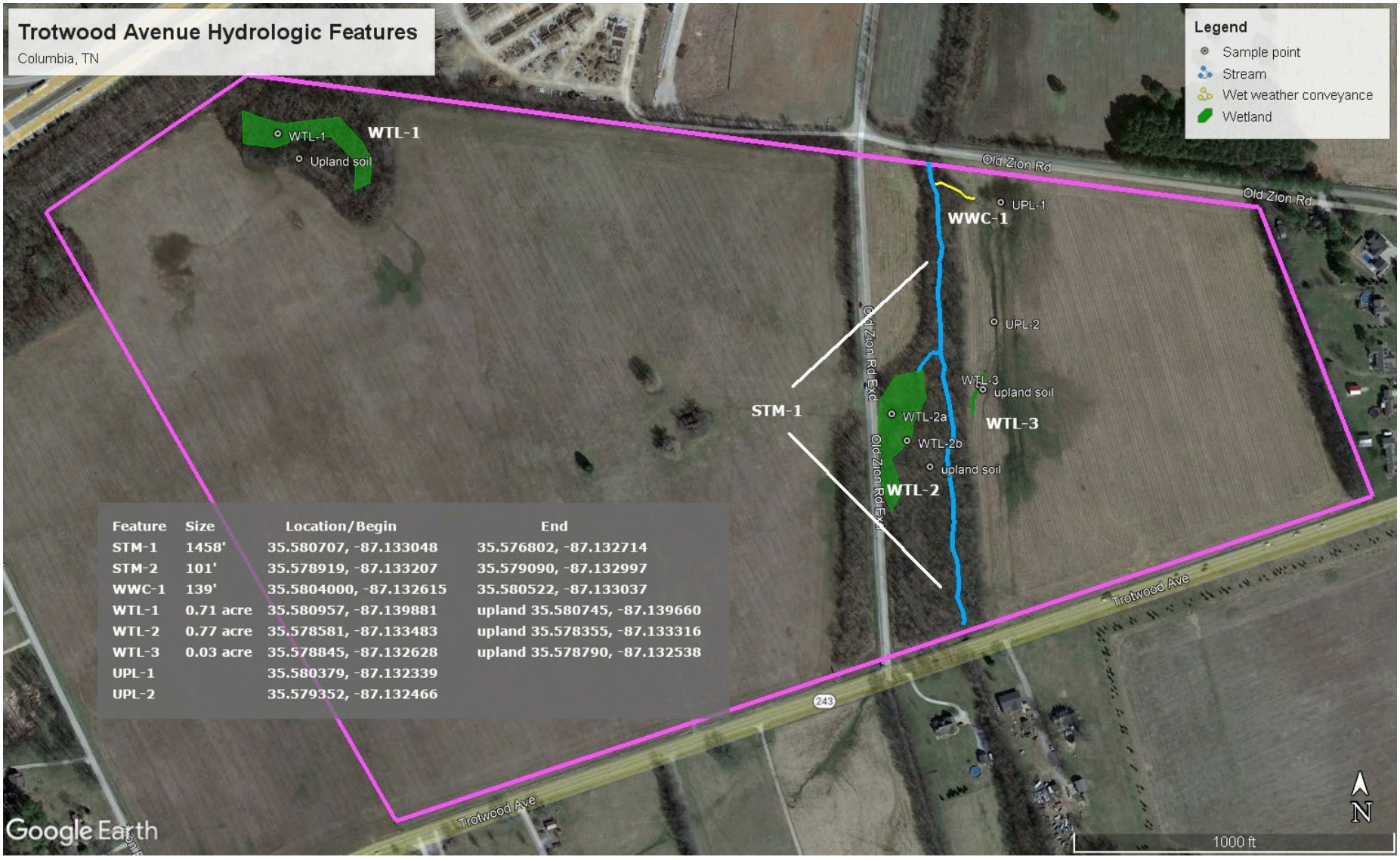
TOPOGRAPHIC VICINITY MAP


Trotwood Avenue Vicinity Map
Mount Pleasant quadrangle
1:24,000 scale
USGS topo map, 2022
Legend
Stream
Wet weather conveyance
Wetland
Ashwood
Siglo
Campbell Lake
Ginger Hill
Patterson Br
Maury County Regional Airport
Polk Memorial Gardens Cem
Saint Johns Cem
Pillow Cem
Kittrell Cem
TROTWOOD AVE
N MAIN ST
N Main St
Lawrenceburg Hwy
E Fork Greenlick Cr
NAPIER DR
STANFILL DR
CANAAN DR
ZION RD
OLD ZION RD EXD
YEATMAN LN
CLAUSON DR
LAKESIDE DR
REDWOOD CIR
POLK LN
SIRCO DR
TRILOGY LN
RIDLEY JEWELL RD
WESTFIELD DR
HAMPTON RD
STONEWALL RD
FORREST DR
CAMELOT DR
EDENBURG DR
Sunnyside Ln
OLD SUNNYSIDE LN
SUNNYSIDE LN
MAYNARD LN
SAW WATKINS BLVD
PARK DR
BEDFORD FORREST LN
STONECREST DR
Google Earth
N

HYDROLOGICAL DETERMINATION FEATURES MAP



Feature	Size	Location/Begin	End
STM-1	1458'	35.580707, -87.133048	35.576802, -87.132714
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WTL-3	0.03 acre	35.578845, -87.132628	upland 35.578790, -87.132538
UPL-1		35.580379, -87.132339	
UPL-2		35.579352, -87.132466	

SOILS MAP

Source:
USDA NRCS Web Soil Survey

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Trotwood Ave@ Old Zion Rd Exd City/County: Columbia/Maury Sampling Date: 12-29-2022
Applicant/Owner: John Maher Builders State: TN Sampling Point: WTL-1
Investigator(s): Billy Plant (TNQHP 1207-TN21), SEC, Inc. Section, Township, Range:
Landform (hillslope, terrace, etc.): hillslope depression Local relief (concave, convex, none): concave Slope (%):
Subregion (LRR or MLRA): LRR N Lat: 35.580957 Long: -87.139881 Datum: WGS84
Soil Map Unit Name: Huntington silt loam (Hr), Armour silt loam (Ae) NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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	**Is the Sampled Area within a Wetland?** **Yes ✓ No**
Hydric Soil Present?	Yes ✓ No	
Wetland Hydrology Present?	Yes ✓ No	

Remarks:
Depressional wetland, sparsely vegetated concave surface, water stained leaves thru-out. Needs AJD. wetland vegetation and hydrology consistent thru-out

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 ✓	Depth (inches):
Water Table Present?	Yes _____	No ✓	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches):

Wetland Hydrology Present? Yes ✓ No

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

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: WTL-1

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	50	Y	FAC
2. Populus deltoides	20	Y	FAC
3. Celtis laevigata	20	Y	FACW
4. Ulmus americana	10	Y	FACW
5.			
6.			
7.			
	100	= Total Cover	

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Shrub Stratum (Plot size: 30' radius)			
1. Celtis laevigata	40	Y	FACW
2. Ulmus americana	30	Y	FACW
3. Acer negundo	10		FAC
4.			
5.			
6.			
7.			
	80	= Total Cover	

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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 Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ✓ **No**

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

SOIL

Sampling Point: WTL-1

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
0-6	10YR 4/4	100						hydric
6-12	10YR 5/4	95	10YR 4/6	5				
0-12	10YR 4/4	100						upland

[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) **(LRR N, MLRA 147, 148)**
- ___ 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 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

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)**
- ___ Very Shallow Dark Surface (TF12)
- ___ 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**

Remarks:

WTL-1 – looking east; depression noticeable

35.580957, -87.139881

WTL-1 – hydric soil showing FeMG

0-6” 10YR 4/4 100%

6-12” 10YR 5/4 95% 10YR 4/6 5%

35.580957, -87.139881

WTL-1 – upland soil

0-12” 10YR 4/4 100%

35.580745, -87.139660

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Trotwood Ave@ Old Zion Rd Exd City/County: Columbia/Maury Sampling Date: 1-5-2023
Applicant/Owner: John Maher Builders State: TN Sampling Point: WTL-2a
Investigator(s): Billy Plant (TNQHP 1207-TN21), SEC, Inc. Section, Township, Range:
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): none Slope (%): 0-2%
Subregion (LRR or MLRA): LRR N Lat: 35.578581 Long: -87.133483 Datum: WGS84
Soil Map Unit Name: Dunning silty clay loam (Dg) NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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	**Is the Sampled Area within a Wetland?** **Yes ✓ No**
Hydric Soil Present?	Yes ✓ No	
Wetland Hydrology Present?	Yes ✓ No	

Remarks:
Depressional wetland serves as headwaters for STM-2. Soil is very dark with some oxidized rhizomes barely visible in occasional samples

Precipitation has been greater than the 30-year average

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 ____ Depth (inches): 0-1"
Water Table Present? Yes ____ No ____ Depth (inches):
Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): 0-12"

Wetland Hydrology Present? Yes ✓ No

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

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: WTL-2a

Tree Stratum (Plot size: 20' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	45	Y	FACW
2. Acer negundo	25	Y	FAC
3. Populus deltoides	5		FAC
4. Celtis laevigata	15		FACW
5. Salix nigra	10		OBL
6.			
7.			
	100	= Total Cover	

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Shrub Stratum (Plot size: 20' radius)			
1. Celtis laevigata	30	Y	FACW
2. Fraxinus pennsylvanica	30	Y	FACW
3. Acer negundo	10		FAC
4. Salix nigra	10		OBL
5.			
6.			
7.			
	80	= Total Cover	

Herb Stratum (Plot size: 10x10)			
1. Schedonorus arundinaceus	40	Y	FACU
2. Carex pendunculata	30	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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.

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Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ✓ **No**

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

Sample point at edge of small clearing

SOIL

Sampling Point: WTL-2a

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
0-4"	10YR 4/2	95	10YR 3/6	5				
4-12"	10YR 3/2							oxidized rhizomes

[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) **(LRR N, MLRA 147, 148)**
- ___ 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 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

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)**
- ___ Very Shallow Dark Surface (TF12)
- ___ 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**

Remarks:

WTL-2a – looking east from edge of small clearing

35.578581, -87.133483

WTL-2a – hydric soil

0-4” 10YR 4/2 95% 10YR 3/6 5%

4-12” 10YR 3/2 100%

35.578581, -87.733483

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Trotwood Ave@ Old Zion Rd Exd City/County: Columbia/Maury Sampling Date: 1-5-2023
Applicant/Owner: John Maher Builders State: TN Sampling Point: WTL-2b
Investigator(s): Billy Plant (TNQHP 1207-TN21), SEC, Inc. Section, Township, Range:
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): none Slope (%): 0-2%
Subregion (LRR or MLRA): LRR N Lat: 35.578355 Long: -87.133316 Datum: WGS84
Soil Map Unit Name: Dunning silt loam (Dg) NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No ✓ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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	**Is the Sampled Area within a Wetland?** **Yes ✓ No**
Hydric Soil Present?	Yes ✓ No	
Wetland Hydrology Present?	Yes ✓ No	

Remarks:
Precipitation has been greater than the 30-year average

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 _____ Depth (inches):
Water Table Present? Yes _____ No _____ Depth (inches):
Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 0-12"

Wetland Hydrology Present? Yes ✓ No

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

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: WTL-2b

Tree Stratum (Plot size: 20' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	60	Y	FAC
2. Celtis laevigata	30	Y	FACW
3. Diospyros virginiana	10		FAC
4.			
5.			
6.			
7.			
	100	= Total Cover	

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Shrub Stratum (Plot size: 20' radius)			
1. Ulmus americana	30	Y	FACW
2. Fraxinus pennsylvanica	20	Y	FACW
3. Ligustrum sinense	10		FACU
4. Symphoricarpos orbiculatus	10		FACU
5.			
6.			
7.			
	70	= Total Cover	

Herb Stratum (Plot size: 10x10)			
1. *Microstegium vimineum	40	Y	FAC
2. Cyperus rotundus	5		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

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 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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 Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ✓ **No**

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

* - all dead

SOIL

Sampling Point: WTL-2b

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 3/1	100						
0-12"	10YR 3/2	100						upland, 35.578133, -87.133074

[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) **(LRR N, MLRA 147, 148)**
- ___ 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 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

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)**
- ___ Very Shallow Dark Surface (TF12)
- ___ 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**

Remarks:

WTL-2b – looking north

35.578355, -87.133316

WTL-2b – hydric soil

0-12” 10YR 3/1 100% with oxidized rhizomes

35.578355, -87.133316

WTL-2b – upland soil

0-12” 10YR 3/2 100%

35.578133, - 87.133074

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Trotwood Ave@ Old Zion Rd Exd City/County: Columbia/Maury Sampling Date: 3-18-2024
Applicant/Owner: John Maher Builders State: TN Sampling Point: WTL-3
Investigator(s): Billy Plant (TNQHP 1207-TN21), SEC, Inc. Section, Township, Range:
Landform (hillslope, terrace, etc.): flood plain Local relief (concave, convex, none): concave Slope (%): 0-2
Subregion (LRR or MLRA): LRR N Lat: 35.578845 Long: -87.132628 Datum: WGS84
Soil Map Unit Name: Lindell silt loam (Lc) NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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	**Is the Sampled Area within a Wetland?** **Yes ✓ No**
Hydric Soil Present?	Yes ✓ No	
Wetland Hydrology Present?	Yes ✓ No	

Remarks:
Linear trough where water drains in field; does not connect to STM-1; gravel, possibly commercial limestone in much of bottom

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 _____ Depth (inches):
Water Table Present? Yes _____ No _____ Depth (inches):
Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches):

Wetland Hydrology Present? Yes ✓ No

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

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: WTL-3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 10x10)			
1. Packera glabella	40	Y	OBL
2. Poa annua	30	Y	FACU
3. Capsella bursa-pastoris	10		FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	40	x 4 =	160
UPL species		x 5 =	
Column Totals:	80 (A)		200 (B)

Prevalence Index = B/A = 2.5

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 Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ✓ **No**

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

SOIL

Sampling Point: WTL-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100						black redox mottles at four inches
4-12	10YR 2/1	100						
0-12	10YR 3/2	100						upland; 35.578790, -87.132538

[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) **(LRR N, MLRA 147, 148)**
- ___ 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 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

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)**
- ___ Very Shallow Dark Surface (TF12)
- ___ 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**

Remarks:

WTL-3 – looking SW

35.578835, -87.132628

WTL-1 – hydric soil

0-4” 10YR 3/2 100%

4-12” 10YR 2/1 100%; black redox mottles

35.578835, -87.132628

WTL-1 – upland soil

0-12” 10YR 3/2 100%

35.578790, -87.132538

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Trotwood Ave@ Old Zion Rd Exd City/County: Columbia/Maury Sampling Date: 1-5-2023
Applicant/Owner: John Maher Builders State: TN Sampling Point: UPL-1
Investigator(s): Billy Plant (TNQHP 1207-TN21), SEC, Inc. Section, Township, Range:
Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0-2
Subregion (LRR or MLRA): LRR N Lat: 35.580379 Long: -87.132339 Datum: WGS84
Soil Map Unit Name: Lindell silt loam (Lc) NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ✓ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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	
Hydric Soil Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ✓
Wetland Hydrology Present?	Yes ✓	No	

Remarks:
Area is saturated on occasion in aerial photographs. Ponding location for sheet flow thru field

Precipitation has been greater than the 30-year average

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 ____	Depth (inches): 0-1"	
Water Table Present?	Yes ____	No ____	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0-12"	**Wetland Hydrology Present? Yes** ✓ **No**

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

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: UPL-1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 10x10)			
1. Packera glabella	30	Y	OBL
2. Poa annua	50	Y	FACU
3. Lamium amplexicaule	10		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= 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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	50	x 4 =	200
UPL species		x 5 =	
Column Totals:	80 (A)		230 (B)

Prevalence Index = B/A = 2.88

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 Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ✓ **No**

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

SOIL

Sampling Point: UPL-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 3/4	100%						upland

[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) **(LRR N, MLRA 147, 148)**
- ___ 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 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

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)**
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 ✓

Remarks:

UPL-1 – looking north

35.580379, -87.132339

UPL-1 – upland soil

0-12” 10YR 3/4 100%

35.580379, -87.132339

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Trotwood Ave@ Old Zion Rd Exd City/County: Columbia/Maury Sampling Date: 3-18-2024
Applicant/Owner: John Maher Builders State: TN Sampling Point: UPL-2
Investigator(s): Billy Plant (TNQHP 1207-TN21), SEC, Inc. Section, Township, Range:
Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 0-2
Subregion (LRR or MLRA): LRR N Lat: 35.579352 Long: -85.132466 Datum: WGS84
Soil Map Unit Name: Lindell silt loam (Lc) NWI classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes ✓	No	

Remarks:

Low trough in field appears saturate in aerial imagery in some years

Vegetation is in a fallow farm field with remnants of soybeans

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 _____ Depth (inches):
Water Table Present? Yes _____ No _____ Depth (inches):
Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches):

Wetland Hydrology Present? **Yes** _____ **No** ✓

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

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: UPL-2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 10x10)			
1. Packera glabella	30	Y	OBL
2. Avena sativa	25	Y	UPL
3. Poa annua	25	Y	FACU
4. Capsella bursa-pastoris	10		FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= 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: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	35	x 4 =	140
UPL species	25	x 5 =	125
Column Totals:	90 (A)		295 (B)

Prevalence Index = B/A = 3.3

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 Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ____ **No** ✓

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

SOIL

Sampling Point: UPL-2

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
0-6	10YR 3/3	100						
6-12	10YR 3/2	100						upland

[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) **(LRR N, MLRA 147, 148)**
- ___ 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 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 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

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)**
- ___ Very Shallow Dark Surface (TF12)
- ___ 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 ✓

Remarks:

UPL-2 – looking south

35.579352, -87.132466

UPL-2 – upland soil

0-6” 10YR 3/3 100%

6-12” 10YR 3/2 100%

35.579352, -87.132466

FIELD DATA SHEETS

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody:	Date/Time: 12-29-2022
Assessors/Affiliation: Billy Plant (TNQHP 1207-TN21) Site Engineering Consultants	Project ID : STM-1
Site Name/Description: Trotwood @ Old Zion Rd Exd	
Site Location: Trotwood @ Old Zion Rd Exd, Map 111 Parcels 29.0, 29.05, 29.06	
HUC (12 digit): 060400030507	Lat/Long: Begin: 35.580707, -87.133048
Previous Rainfall (7-days) : 0.14" CoCoRaHS TN-MY-8	End: 35.576802, -87.132714
Precipitation this Season vs. Normal : abnormally wet elevated **[average]** low abnormally dry unknown Source of recent & seasonal precip data : USACE APT	
Watershed Size :	County: Maury
Soil Type(s) / Geology : Lindell silt loam (Lc)	Source: WSS
Surrounding Land Use : agricultural and residential	
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) = 38.0

Justification / Notes :

Well formed stream runs north to south across property

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 17.0)	**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 = 10.0)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	[3]
15. Water in channel and >48 hours since sig. rain	0	1	2	[3]
16. Leaf litter in channel (January – September) NA	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 = 11.0)	**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 = 38.0

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

Notes :

6) most benches look to be composed mostly of alluvium

22) a couple of crayfish burrows were observed

25) some isopods and snails

26) very slick substrate

STM-1 – looking south near Old Zion Rd

35.580707, -87.133048

STM-1 – looking south

35.579238, -87.132891

STM-1 – looking north at sediment and wrack line

35.578378, -87.132852

STM-1 – looking south near Trotwood Avenue

35.578228, -87.132860

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody:	Date/Time: 12-29-2022
Assessors/Affiliation: Billy Plant (TNQHP 1207-TN21) Site Engineering Consultants	Project ID : STM-2
Site Name/Description: Trotwood @ Old Zion Rd Exd	
Site Location: Trotwood @ Old Zion Rd Exd, Map 111 Parcels 29.0, 29.05, 29.06	
HUC (12 digit): 060400030507	Lat/Long: Begin: 35.578919, -87.133207
Previous Rainfall (7-days) : 0.14" CoCoRaHS TN-MY-8	End: 35.579090, -87.132997
Precipitation this Season vs. Normal : abnormally wet elevated **[average]** low abnormally dry unknown Source of recent & seasonal precip data : USACE APT	
Watershed Size :	County: Maury
Soil Type(s) / Geology : Lindell silt loam (Lc)	Source: WSS
Surrounding Land Use : agricultural and residential	
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) = 19.5

Justification / Notes :

Begins flow out of WTL-2. Small branch typical width 4'. Ends at STM-1

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 6.5)	**Absent**	**Weak**	**Moderate**	**Strong**
1. Continuous bed and bank	0	X 1.5	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	X 1.5	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 = 10.0)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	

C. Biology (Subtotal = 3.0)	**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 = 19.5

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

Notes :

11) small roots, ends at grade control of cobble and roots

28) Packera glabella in upper reach

STM-2 – channel forms coming out of WTL-2

35.578919, -87.133207

STM-2 – hydric soil

10YR 4/2 90%, 10YR 3/6 10%

35.579029, -87.133134

STM-2 – looking SSW near STM-1

35.579098, -87.133066

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody:	Date/Time: 1-5-2023
Assessors/Affiliation: Billy Plant (TNQHP 1207-TN21) Site Engineering Consultants	Project ID : WWC-1
Site Name/Description: Trotwood @ Old Zion Rd Exd	
Site Location: Trotwood @ Old Zion Rd Exd, Map 111 Parcels 29.0, 29.05, 29.06	
HUC (12 digit): 060400030507	Lat/Long: Begin: 35.5804000, -87.132615
Previous Rainfall (7-days) : 3.34" CoCoRaHS TN-MY-8 2.81" previous day	End: 35.580522, -87.133037
Precipitation this Season vs. Normal : abnormally wet **elevated** average low abnormally dry unknown Source of recent & seasonal precip data : USACE APT	
Watershed Size :	County: Maury
Soil Type(s) / Geology : Lindell silt loam (Lc)	Source: WSS
Surrounding Land Use : agricultural and residential	
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 = Wet weather conveyance

Secondary Indicator Score (if applicable) = 12.0

Justification / Notes :

Narrow channel drains field. Ends at STM-1; not incised to water level of STM-1. No flowing water day after 2+ inches of rain

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 7.0)	**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	X 1.5	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 = 3.5)	**Absent**	**Weak**	**Moderate**	**Strong**
14. Subsurface flow/discharge into channel	[0]	1	2	3
15. Water in channel and >48 hours since sig. rain	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	X 0.5	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 = 12.0

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

Notes :

8) alluvium is strong but more silty than course

11) roots hold grade in 2 locations

18) no overbanking

15) some water collected in small pools day after 2 + inches rain. No flow

WWC-1 – channel forms coming out of field

35.580400, -87.132615

WWC-1 – looking west

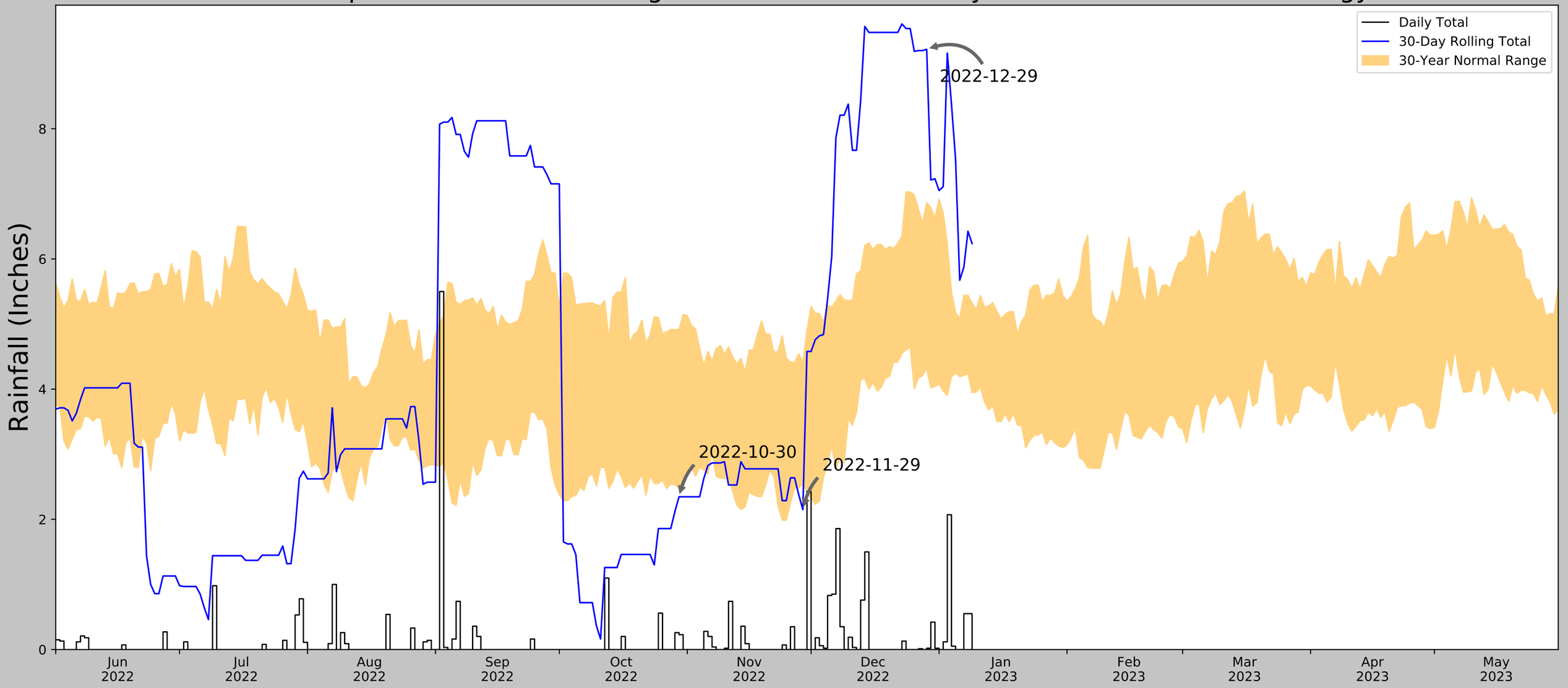
35.580465, -87.132779

WWC-1 – end at STM-1

35.580522, -87.133037

NORMAL WEATHER CONDITIONS CALCULATION

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	35.578699, -87.134760
Observation Date	2022-12-29
Elevation (ft)	686.23
Drought Index (PDSI)	Mild drought
WebWIMP H_2O Balance	Wet Season

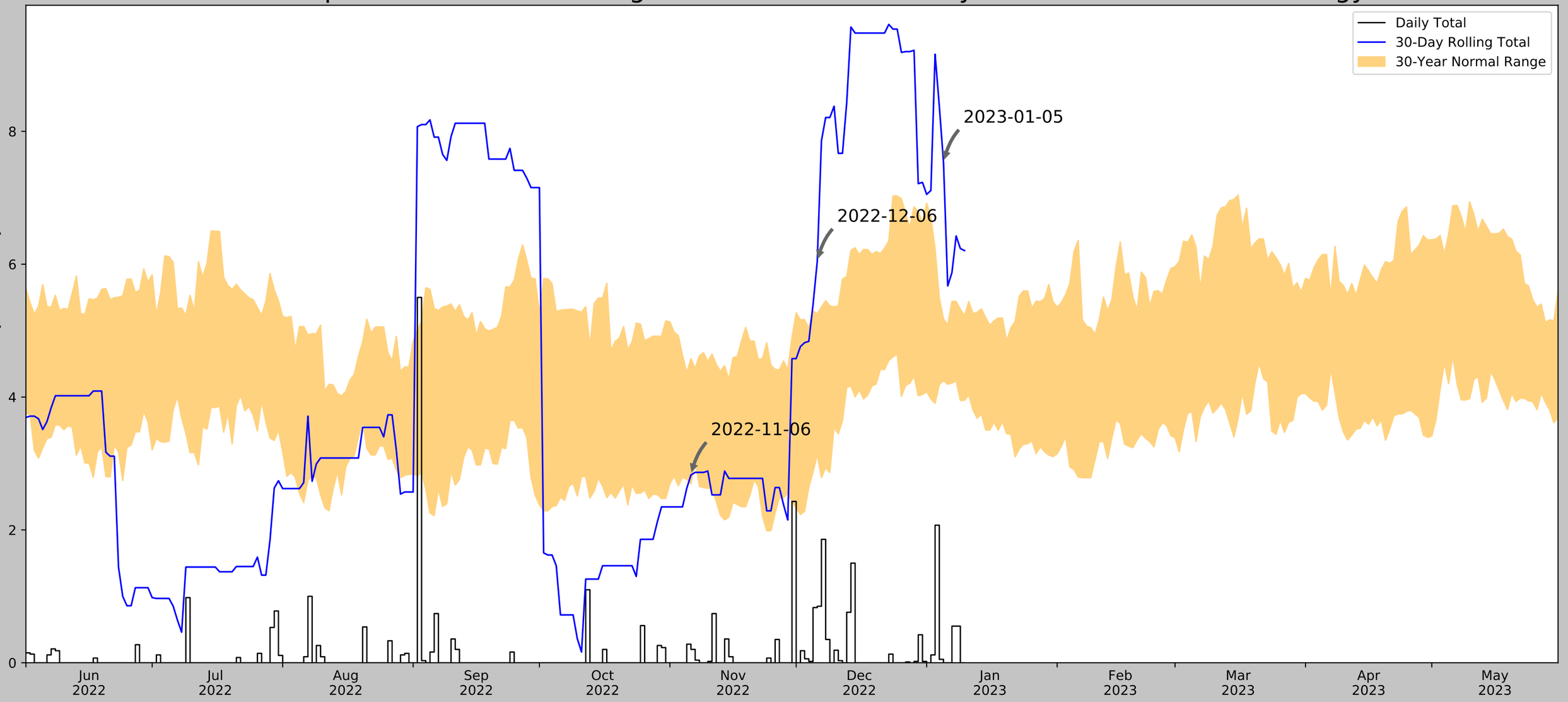
30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-12-29	4.313386	6.865355	9.220473	Wet	3	3	9
2022-11-29	2.549213	4.413386	2.149606	Dry	1	2	2
2022-10-30	2.472835	4.916536	2.346457	Dry	1	1	1
Result							Normal Conditions - 12

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
COLUMBIA 3 WNW	35.6381, -87.0864	649.934	4.922	36.296	2.393	11233	80
COLUMBIA 0.3 WSW	35.6208, -87.0543	612.861	2.163	37.073	1.054	10	0
COLUMBIA 1.2 SSW	35.6072, -87.0592	722.113	2.625	72.179	1.371	58	10
NEAPOLIS RSCH & ED STN	35.7197, -86.9653	700.131	8.831	50.197	4.417	51	0
CENTERVILLE WATER PL	35.7553, -87.4261	660.105	20.71	10.171	9.53	1	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	35.578699, -87.134790
Observation Date	2023-01-05
Elevation (ft)	686.23
Drought Index (PDSI)	Not available
WebWIMP H_2O Balance	Wet Season

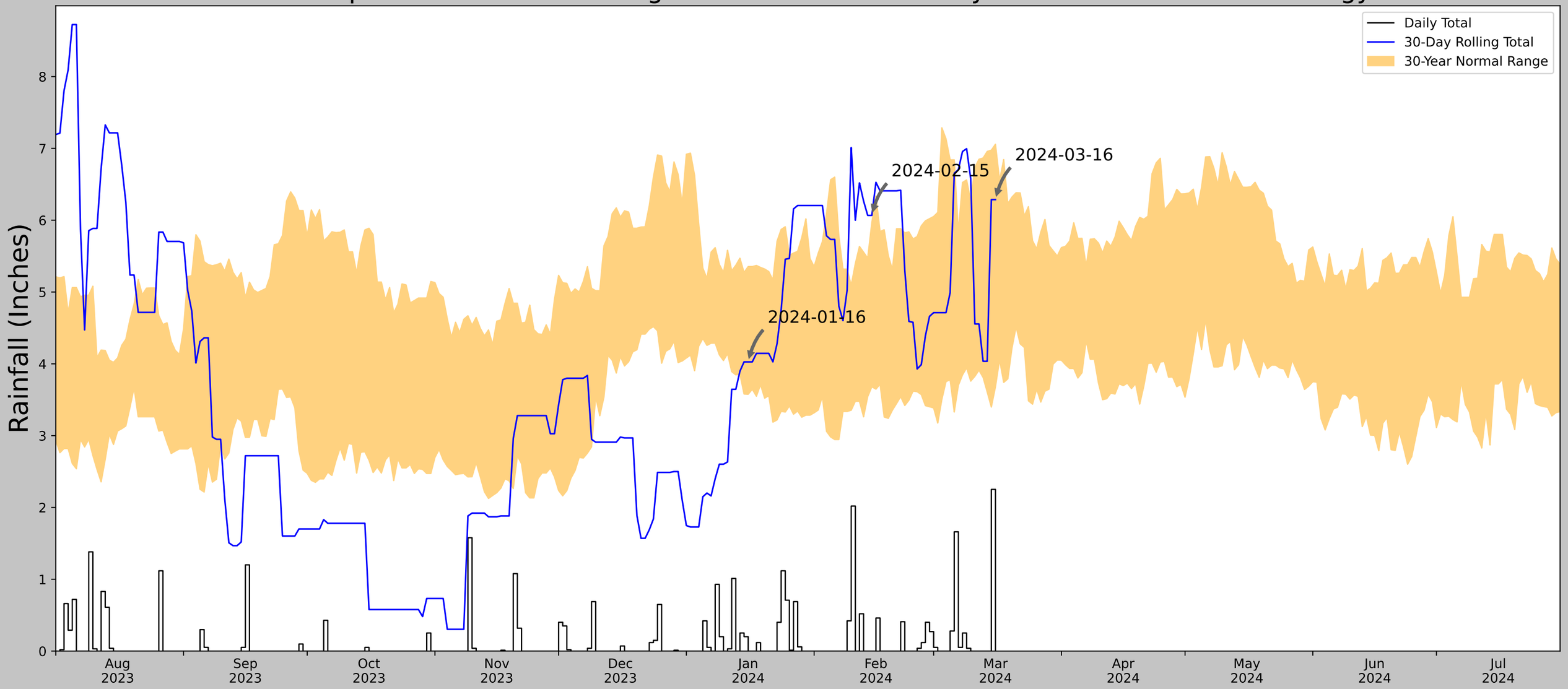
30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-01-05	4.246851	5.177166	7.531496	Wet	3	3	9
2022-12-06	3.131496	5.254725	6.03937	Wet	3	2	6
2022-11-06	2.693307	4.579528	2.826772	Normal	2	1	2
Result							Wetter than Normal - 17

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
COLUMBIA 3 WNW	35.6381, -87.0864	649.934	4.923	36.296	2.394	11233	80
COLUMBIA 0.3 WSW	35.6208, -87.0543	612.861	2.163	37.073	1.054	10	0
COLUMBIA 1.2 SSW	35.6072, -87.0592	722.113	2.625	72.179	1.371	58	10
NEAPOLIS RSCH & ED STN	35.7197, -86.9653	700.131	8.831	50.197	4.417	51	0
CENTERVILLE WATER PL	35.7553, -87.4261	660.105	20.71	10.171	9.53	1	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	35.578845, -87.132628
Observation Date	2024-03-16
Elevation (ft)	668.716
Drought Index (PDSI)	Moderate drought (2024-02)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-03-16	3.681102	7.058268	6.287402	Normal	2	3	6
2024-02-15	3.680709	5.965355	6.066929	Wet	3	2	6
2024-01-16	3.576378	5.354725	4.027559	Normal	2	1	2
Result							Normal Conditions - 14

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
COLUMBIA 3 WNW	35.6381, -87.0864	649.934	4.848	18.782	2.273	11207	85
COLUMBIA 0.3 WSW	35.6208, -87.0543	612.861	2.163	37.073	1.054	11	1
COLUMBIA 1.2 SSW	35.6072, -87.0592	722.113	2.625	72.179	1.371	90	4
NEAPOLIS RSCH & ED STN	35.7197, -86.9653	700.131	8.831	50.197	4.417	43	0
CENTERVILLE WATER PL	35.7553, -87.4261	660.105	20.71	10.171	9.53	1	0

LETTERS OF PERMISSION

Letter of Permission

Date: March 22, 2023

Division of Water Resources
Tennessee Department of Environment and Conservation (TDEC)
Columbia EFO
1421 Hampshire Pike
Columbia, TN 38401

RE: Permission to Access Property for Hydrological Determination for the Trotwood properties, Columbia, TN, Maury County

TDEC has my permission to access the property located at the corner of Trotwood Avenue and Old Zion Road Exd., and lying on either side of Old Zion Road Exd. (Maury County Map 111 Parcel 029.00, 029.60, and 029.05) as referenced in the Hydrological Determination Report prepared by Billy Plant of Site Engineering Consultants. General coordinates for the property are 35.578699, -87.134790.

The contact for correspondence with the property owners is John Ross Hill of Maury County Realty. His contact information is below.

Sincerely,

Owner Name:

Adaline Pasour

DocuSigned by:
Adaline A. Pasour
8AA80B1D67E347A...

Dana C. McLendon

DocuSigned by:
Dana C. McLendon
C239E0C7538D47E...

Spence M. Armstrong

DocuSigned by:
Spence M. Armstrong Trust by Edward Armstrong Trustee
BEDBA0A7CF044CA...

Phone: John Hill (931) 224-1205
Email: johnrosshill@gmail.com

Address: 1217 Trotwood Ave.
Columbia, TN 38401

Letter of Permission

Date: March 22, 2024

U.S. Army Corps of Engineers
Nashville District
3701 Bell Road
Nashville, TN 37214

RE: Permission to Access Property for Hydrological Determination for the Trotwood properties, Columbia, TN, Maury County

The Corps of Engineers has my permission to access the property located at the corner of Trotwood Avenue and Old Zion Road Exd., and lying on either side of Old Zion Road Exd. (Maury County Map 111 Parcel 029.00, 029.60, and 029.05) as referenced in the Hydrological Determination Report prepared by Billy Plant of Site Engineering Consultants. General coordinates for the property are 35.578699, -87.134790.

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Dana C. McLendon
C239E0C7538D47E...

Spence M. Armstrong

DocuSigned by:
Spence M. Armstrong Trust by Edward Armstrong Trustee
BEDBA0A7CF044CA...

Phone: John Hill (931) 224-1205
Email: johnrosshill@gmail.com

Address: 1217 Trotwood Ave.
Columbia, TN 38401