# SEC, Inc.

#### SITE ENGINEERING CONSULTANTS

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Billy Plant Site Engineering Consultants, Inc. Murfreesboro, TN 37129

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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 <a href="mailto:johnrosshill@gmail.com">johnrosshill@gmail.com</a>. 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** 

3 Plant 15

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

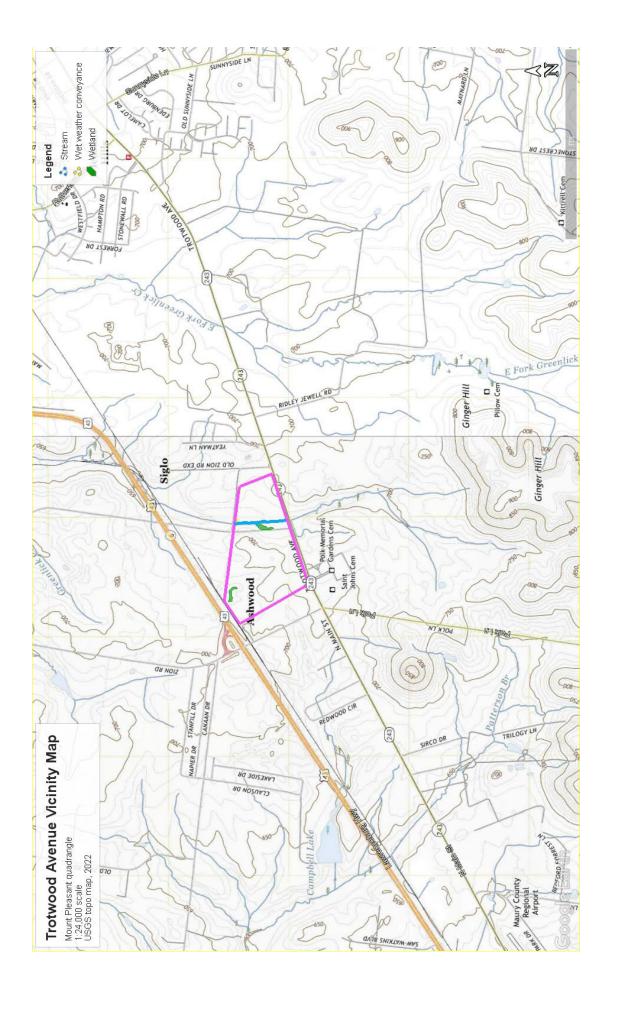
Prepared by Billy Plant

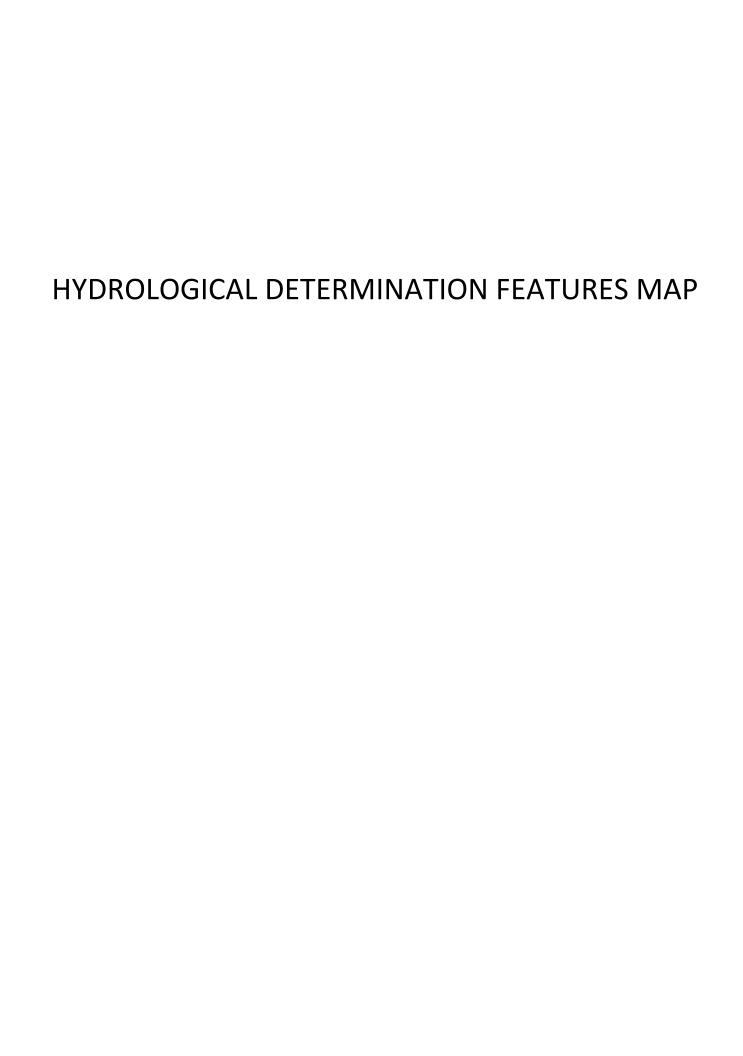
#### Contents:

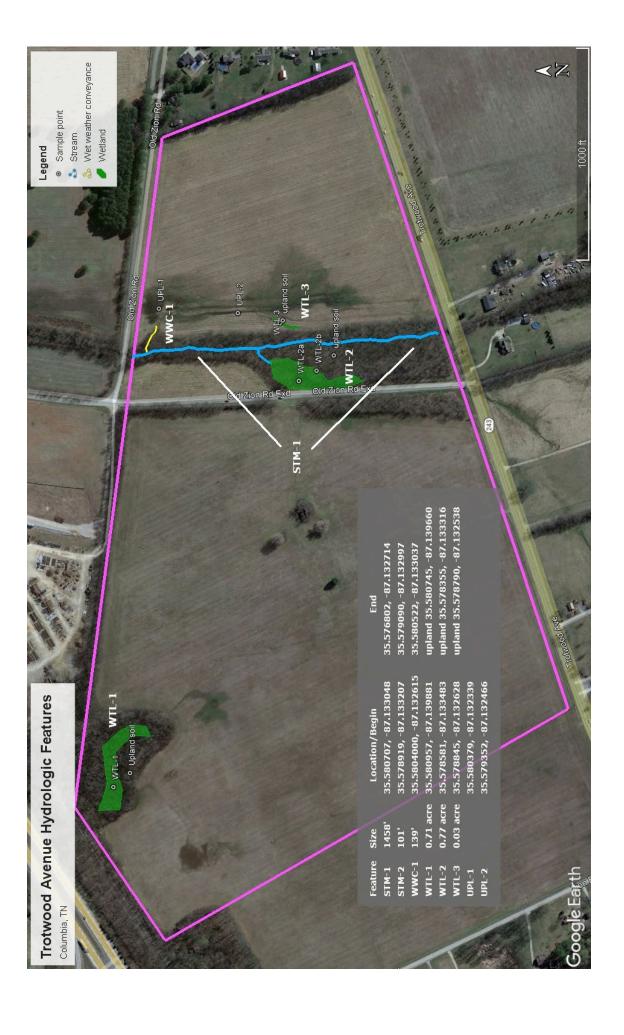
- 1) Topographic vicinity map showing site location
- 2) Hydrological determination features map
- 3) Soils Map
- 4) HD field data sheets and photos
- 5) Normal weather conditions calculation
- 6) Letter of permission



# TOPOGRAPHIC VICINITY MAP







## **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 C	ity/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. S	
Landform (hillslope, terrace, etc.): hillslope depression Loca	. •
Subregion (LRR or MLRA): _LRR N Lat: _35.580957	
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	
Are Vegetation, Soil, or Hydrology significantly di	
Are Vegetation, Soil, or Hydrology naturally prob	lematic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing s	sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	le the Complet Avec
Hydric Soil Present? Yes V. No	Is the Sampled Area within a Wetland? Yes No
Wetland Hydrology Present? Yes V	
Remarks:	
	ned leaves thru-out. Needs AJD. wetland vegetation and hydrology consistent
thru-out , , , , , , , , , , , , , , , , , , ,	3 , 3,
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) True Aquatic Plai	
High Water Table (A2)  Hydrogen Sulfide	• • • • • • • • • • • • • • • • • • • •
	pheres on Living Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Red	
	uction in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface	
Algal Mat or Crust (B4) Other (Explain in	
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
✓ Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No Depth (inches):	Wetland Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos,	previous inspections), if available:
Remarks:	

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

/EGETATION (Five Strata) – Use scientific	names of	plants.		Sampling Point: WTL-1
Tree Stratum (Plot size: 30' radius )	Absolute % Cover	Dominant Species?		Dominance Test worksheet:
1. Acer rubrum	50	Υ	FAC	Number of Dominant Species That Are OBL, FACW, or FAC:6 (A)
2. Populus deltoides	20	Y	FAC	
3. Celtis laevigata	20	Y	FACW	Total Number of Dominant Species Across All Strata:6 (B)
Ulmus americana	 10	Y	FACW	(B)
5				Percent of Dominant Species That Are OBL_FACW_or FAC: 100 (A/B)
				That Are OBL, FACW, or FAC: 100 (A/B)
6				Prevalence Index worksheet:
7	400			Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)	100	= Total Cov	er	OBL species x 1 =
1				FACW species x 2 =
2				FAC species x 3 =
				FACU species x 4 =
3				UPL species x 5 =
4				
5				Column Totals: (A) (B)
6				Prevalence Index = B/A =
7				Hydrophytic Vegetation Indicators:
Church Charter (Dist size 30' radius		= Total Cov	er	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 30' radius )	40	V	FACW	+ 2 - Dominance Test is >50%
1. Celtis laevigata	40	<u>Y</u>		3 - Prevalence Index is ≤3.0¹
2. Ulmus americana		Y		
3. Acer negundo				4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5				resistant riyatopriyas vogetation (Explain)
6				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
7				be present, unless disturbed or problematic.
	80	= Total Cov	er	Definitions of Five Vegetation Strata:
Herb Stratum (Plot size:)				
1				<b>Tree</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
2	_			(7.6 cm) or larger in diameter at breast height (DBH).
3	_			
4	_			Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
5				than 3 in. (7.6 cm) DBH.
6				Showsh Manda walanda ayaladin waxaadaayin a
7	_			Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
8				
9				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
10				plants, except woody vines, less than approximately 3
11				ft (1 m) in height.
12				Woody vine – All woody vines, regardless of height.
		= Total Cov		Woody vine - All woody vines, regardless of neight.
Woody Vine Stratum (Plot size:)		- Total Gov	C1	
1				
2				
3.				
4				Hydrophytic
5				Vegetation   Present?
J				rieseiit: ies <u>v</u> No
		= Total Cov	<b>С</b> І	
Remarks: (Include photo numbers here or on a separate	sheet.)			

SOIL Sampling Point: WTL-1

Profile Desc	cription: (Describe t	o the dep	th needed to docun	nent the i	ndicator	or confirm	n the abser	nce of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	e Remarks
0-6	10YR 4/4	100						hydric
6-12	10YR 5/4	95	10YR 4/6	5				
0.40	10)/D 1/4	100						upland
0-12	10YR 4/4	100					-	иріани
				-			-	
	oncentration, D=Depl	etion, RM	=Reduced Matrix, MS	S=Masked	Sand Gra	ins.		: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						In	dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface				_	_ 2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		. , .		148)	_ Coast Prairie Redox (A16)
	istic (A3)		Thin Dark Su			47, 148)		(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye		(F2)		_	Piedmont Floodplain Soils (F19)
	d Layers (A5) uck (A10) <b>(LRR N)</b>		Depleted Mar		E6)			(MLRA 136, 147) Very Shallow Dark Surface (TF12)
	d Below Dark Surface	e (A11)	Depleted Dar				_	_ Other (Explain in Remarks)
	ark Surface (A12)	, (, (, 1, 1,	Redox Depre					_ Culoi (Explain in Tolliano)
	/ //ucky Mineral (S1) <b>(L</b>	RR N,	✓ Iron-Mangan			_RR N,		
	A 147, 148)		MLRA 13		. , ,			
Sandy G	Sleyed Matrix (S4)		Umbric Surfa	ce (F13)	(MLRA 13	6, 122)	;	Indicators of hydrophytic vegetation and
-	Redox (S5)		Piedmont Flo					wetland hydrology must be present,
	l Matrix (S6)		Red Parent N	/laterial (F	21) <b>(MLR</b>	A 127, 147	7)	unless disturbed or problematic.
Restrictive I	Layer (if observed):							
Type:								./
Depth (in	ches):						Hydric S	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 Mahe	r Builders		State: TN Sampling Point: WTL-2a					
Investigator(s): Billy Plant (TI	NQHP 1207-TN21),	SEC, Inc.						
• ,,					Slope (%): 0-2%			
					Datum: WGS84			
Soil Map Unit Name: <u>Dunnin</u>				NWI classi				
Are climatic / hydrologic cond			year? Yes No V					
Are Vegetation, Soil _		-	· · · · · · · · · · · · · · · · · · ·		" present? Yes No			
Are Vegetation, Soil _				ed, explain any answ				
, con	, or riyurology	,natarany pr	iobicinatio: (ii necat	oa, explain any anov	rere in Remarks.)			
SUMMARY OF FINDIN	IGS – Attach s	ite map showin	g sampling point loc	ations, transec	ts, important features, etc.			
Hydrophytic Vegetation Pres	sent? Yes _	✓ No	Is the Sampled Ar	ea	,			
Hydric Soil Present?	Yes _	No	within a Wetland?	Yes <u></u>	No			
Wetland Hydrology Present	? Yes _	✓ No						
Remarks:								
Depressional wetland serv	es as headwaters f	or STM-2. Soil is ver	ry dark with some oxidized r	hizomes barely visib	ole in occasional samples			
Precipitation has been gre	ater than the 30-ve:	ar average						
. realphanen nae zeen gre		a. a.rerage						
HYDROLOGY								
Wetland Hydrology Indicat	tors:			Secondary Indi	cators (minimum of two required)			
Primary Indicators (minimum	of one is required;	check all that apply)		Surface Sc	oil Cracks (B6)			
✓ Surface Water (A1)	✓ Surface Water (A1) True Aquatic Plants			Sparsely V	egetated Concave Surface (B8)			
, High Water Table (A2)		Hydrogen Sulf	fide Odor (C1)	dor (C1) Drainage Patterns (B10)				
✓ Saturation (A3)		Oxidized Rhiz	ospheres on Living Roots (C	eres on Living Roots (C3) Moss Trim Lines (B16)				
Water Marks (B1)		Presence of R	Reduced Iron (C4)	Dry-Seaso	n Water Table (C2)			
Sediment Deposits (B2)	1	Recent Iron R	eduction in Tilled Soils (C6)	Soils (C6) Crayfish Burrows (C8)				
Drift Deposits (B3)		Thin Muck Su	rface (C7)	C7) Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)		Other (Explain	n in Remarks)	· · · · · · · · · · · · · · · · · · ·				
Iron Deposits (B5)				✓ Geomorph	ic Position (D2)			
Inundation Visible on A				Shallow Ac	quitard (D3)			
✓ Water-Stained Leaves (	B9)				graphic Relief (D4)			
Aquatic Fauna (B13)				FAC-Neutr	al Test (D5)			
Field Observations:	,							
Surface Water Present?	Yes V No	Depth (inches	s): 0-1"					
Water Table Present?	Yes No	Depth (inches	s):		•			
Saturation Present?	Yes V No	Depth (inches	s): 0-12" Wetlar	Wetland Hydrology Present? Yes No				
(includes capillary fringe)  Describe Recorded Data (st	room gouldo monite	ring well carial abot	toe provious inspections) if	available:				
Describe Recorded Data (st	ream gauge, monito	ning well, aerial priol	ios, previous inspections), ii	avallable.				
Demonstra								
Remarks:								

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

EGETATION (Five Strata) – Use scientific	names of	plants.		Sampling Point: WTL-2a
	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 20' radius )		Species?	Status	Number of Dominant Species
1	45	Y	FACW	That Are OBL, FACW, or FAC:5 (A)
2. Acer negundo	25	. <u> </u>	_FAC_	Total Number of Dominant
3. Populus deltoides	5		FAC_	Species Across All Strata: 6 (B)
4. Celtis laevigata	15		_FACW	Dercent of Deminant Species
5. Salix nigra	10		_OBL_	Percent of Dominant Species That Are OBL, FACW, or FAC: 83% (A/B)
6				
7				Prevalence Index worksheet:
	100	= Total Cov	er	Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)				OBL species x 1 =
1		· <del></del>		FACW species x 2 =
2				FAC species x 3 =
3				FACU species x 4 =
4				UPL species x 5 =
5				Column Totals: (A) (B)
6				Dravelenes Index - D/A -
7				Prevalence Index = B/A =
		= Total Cov	er	Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: 20' radius )				1 - Rapid Test for Hydrophytic Vegetation
1. Celtis laevigata	30	. <u> </u>	FACW	+ 2 - Dominance Test is >50%
2. Fraxinus pennsylvanica	30	. <u> </u>	_FACW	3 - Prevalence Index is ≤3.0 <sup>1</sup>
3. Acer negundo	10		_FAC_	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
4. Salix nigra	10		_OBL_	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5				Problematic Hydrophytic Vegetation (Explain)
6				The disease of hydric coil and well-and hydrology may be
7				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	80	= Total Cov	er	Definitions of Five Vegetation Strata:
Herb Stratum (Plot size: 10x10 )				
1. Schedonorus arundinaceus	40	· <u> </u>	FACU	<b>Tree</b> – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
2. Carex pendunculata	30	. <u> </u>	OBL_	(7.6 cm) or larger in diameter at breast height (DBH).
3				
4				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
5				than 3 in. (7.6 cm) DBH.
6				Shrub – Woody plants, excluding woody vines,
7				approximately 3 to 20 ft (1 to 6 m) in height.
8				Harb All barbassassa (non woods) planta including
9				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
10				plants, except woody vines, less than approximately 3
11				ft (1 m) in height.
12				Woody vine – All woody vines, regardless of height.
	70	= Total Cov	er	
Woody Vine Stratum (Plot size:)				
1	_	· ——		
2				
3				Hydrophytic
4				Vegetation
5				Present? Yes No
		= Total Cov	er	
Remarks: (Include photo numbers here or on a separate	e sheet.)			1
Sample point at edge of small clearing				
Cample point at edge of small dealing				

SOIL Sampling Point: WTL-2a

Profile Desc	cription: (Describe to	the depth	needed to docur	nent the i	ndicator	or confirm	the ab	sence of indicators.)
Depth	Matrix			x Features	3			
(inches)	Color (moist)	%	Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Tex	ture Remarks
0-4"	10YR 4/2	95	10YR 3/6	_ 5				
4-12"	10YR 3/2		_					oxidized rhizomes
								ONGLEGG THEOTHER
			_				-	
			_					
							-	
	oncentration, D=Deple	tion, RM=F	Reduced Matrix, MS	S=Masked	Sand Gra	ins.	<sup>2</sup> Locat	tion: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:					_		Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Dark Surface	e (S7)				2 cm Muck (A10) (MLRA 147)
Histic Ep	pipedon (A2)		Polyvalue Be	low Surfa	ce (S8) <b>(N</b>	LRA 147,	148)	Coast Prairie Redox (A16)
Black Hi			Thin Dark Su					(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye					Piedmont Floodplain Soils (F19)
Stratified	d Layers (A5)		✓ Depleted Ma	trix (F3)				(MLRA 136, 147)
2 cm Mu	ıck (A10) <b>(LRR N)</b>		Redox Dark	Surface (F	6)			Very Shallow Dark Surface (TF12)
Depleted	d Below Dark Surface	(A11)	Depleted Date	rk Surface	(F7)			Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
	lucky Mineral (S1) <b>(LF</b>	RR N,	Iron-Mangan		es (F12) <b>(</b> I	_RR N,		
	A 147, 148)		MLRA 13	•				
	Sleyed Matrix (S4)		Umbric Surfa					<sup>3</sup> Indicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					wetland hydrology must be present,
	Matrix (S6)		Red Parent N	∕laterial (F	21) <b>(MLR</b>	A 127, 147	7)	unless disturbed or problematic.
Restrictive I	Layer (if observed):							
Type:								,
Depth (in	ches):						Hydr	ic Soil Present? Yes V 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				Sampling Point: WTL-2b			
Investigator(s): Billy Plant (TNQHP 120		Section, Township, Range:					
Landform (hillslope, terrace, etc.): dep	•		ne)· none	Slope (%). 0-2%			
Subregion (LRR or MLRA): LRR N	Datum: WGS84						
Soil Map Unit Name: Dunning silt loam	<u> </u>			cation: none			
Are climatic / hydrologic conditions on the		ır? Yes No √	(If no, explain in F				
Are Vegetation, Soil, or l				present? Yes No			
Are Vegetation, Soil, or l			explain any answe				
Are vegetation, 30ii, or i	TrydrologyTraturally proc	nematic: (ii needed, e	sapiaiii aily aliswe	ers in itemarks.)			
SUMMARY OF FINDINGS - A	ttach site map showing	sampling point location	ons, transects	s, important features, etc.			
Hydrophytic Vegetation Present?	Yes V No	Is the Sampled Area	,				
Hydric Soil Present?	Yes No	within a Wetland?	Yes 🗸	No			
Wetland Hydrology Present?	Yes No						
Remarks:		I					
Precipitation has been greater than th	e 30-year average						
HYDROLOGY							
Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum of one is	required; check all that apply)		Surface Soil Cracks (B6)				
Surface Water (A1)	True Aquatic Pla	ants (B14)	Sparsely Ve	getated Concave Surface (B8)			
High Water Table (A2)	Hydrogen Sulfide		Drainage Pa				
✓ Saturation (A3)	•		Moss Trim L				
Water Marks (B1)	Presence of Rec			Water Table (C2)			
Sediment Deposits (B2)		uction in Tilled Soils (C6)	Crayfish Bur				
Drift Deposits (B3)	Thin Muck Surfa		Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Other (Explain in			Stressed Plants (D1)			
Iron Deposits (B5)		,	Geomorphic				
Inundation Visible on Aerial Image	ery (B7)		Shallow Aqu				
Water-Stained Leaves (B9)			Microtopographic Relief (D4)				
Aquatic Fauna (B13)			FAC-Neutra	Test (D5)			
Field Observations:							
Surface Water Present? Yes	No Depth (inches):						
	No Depth (inches):						
	No Depth (inches):	0-12" Wetland H	lydrology Prese	nt? Yes V No			
(includes capillary fringe)				103 <u>↓</u> No			
Describe Recorded Data (stream gaug	e, monitoring well, aerial photos	s, previous inspections), if avai	ilable:				
Remarks:							

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

/EGETATION (Five Strata) – Use scientific	names of	plants.		Sampling Point: WTL-2b
	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: 20' radius )		Species?	Status	Number of Dominant Species _
1. Acer negundo	60	- <u>Y</u>	<u>FAC</u>	That Are OBL, FACW, or FAC:5 (A)
2. Celtis laevigata	30	Y	_FACW	Total Number of Dominant
3. Diospyros virginiana	10		_FAC_	Species Across All Strata:5 (B)
4	_			Demonstrat Demoissant Conscion
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
6				
7				Prevalence Index worksheet:
		= Total Cov	er	Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)				OBL species x 1 =
1				FACW species x 2 =
2				FAC species x 3 =
3				FACU species x 4 =
4				UPL species x 5 =
5				Column Totals: (A) (B)
6				5 1 1 50
7				Prevalence Index = B/A =
		= Total Cov		Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: 20' radius )				1 - Rapid Test for Hydrophytic Vegetation
1. Ulmus americana	30	Y	FACW	+ 2 - Dominance Test is >50%
2. Fraxinus pennsylvanica	20	Y	FACW	3 - Prevalence Index is ≤3.0¹
3. Ligustrum sinense	10		<u>FACU</u>	4 - Morphological Adaptations (Provide supporting
4. Symphoricarpos orbiculatus	10		_FACU	data in Remarks or on a separate sheet)
5				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
6				1
7				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	70	= Total Cov	er	Definitions of Five Vegetation Strata:
Herb Stratum (Plot size: 10x10 )				Definitions of Five Vegetation Strata.
1. *Microstegium vimineum	40	Y	FAC	Tree – Woody plants, excluding woody vines,
2. Cyperus rotundus	5		_FAC_	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
3				
4				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
5				than 3 in. (7.6 cm) DBH.
6				Charles Manager and Advantage
7				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
8				
9	_			Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
10				plants, except woody vines, less than approximately 3
11	_			ft (1 m) in height.
12				<b>Woody vine</b> – All woody vines, regardless of height.
	45	= Total Cov	er	, , , , ,
Woody Vine Stratum (Plot size:)				
1				
2				
3				Undrankotia
4				Hydrophytic Vegetation
5				Present? Yes V No
		= Total Cov	er	
Remarks: (Include photo numbers here or on a separate	sheet.)			1
* - all dead	•			
un dedu				

SOIL Sampling Point: WTL-2b

Profile Desc	ription: (Describe	to the dept	h needed to docun	ent the ir	ndicator	or confirm	the abser	nce of indicators.)
Depth	Matrix		Redox	(Features	<u> </u>			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-12"	10YR 3/1	100						
0.40"	10)/D 0/0							
0-12"	10YR 3/2	100						<u>upland, 35.578133, -87.133074</u>
	-							
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	=Masked	Sand Gra	ins.		: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Inc	dicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Dark Surface	(S7)			_	2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Be		e (S8) <b>(M</b>	LRA 147,	148)	Coast Prairie Redox (A16)
Black His			Thin Dark Su		. , .			(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			•	_	_ Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mat		,			(MLRA 136, 147)
2 cm Mu	ck (A10) (LRR N)		Redox Dark S	Surface (F	6)			Very Shallow Dark Surface (TF12)
Depleted	Below Dark Surface	e (A11)	Depleted Dar	k Surface	(F7)			Other (Explain in Remarks)
Thick Da	rk Surface (A12)		Redox Depre	ssions (F8	3)			
Sandy M	lucky Mineral (S1) <b>(L</b>	.RR N,	Iron-Mangane	ese Masse	es (F12) <b>(I</b>	RR N,		
MLRA	A 147, 148)		MLRA 130	6)				
Sandy G	leyed Matrix (S4)		Umbric Surfa	ce (F13) <b>(I</b>	MLRA 13	6, 122)	3	Indicators of hydrophytic vegetation and
Sandy R	edox (S5)		Piedmont Flo	odplain Sc	oils (F19)	(MLRA 14	l <b>8</b> )	wetland hydrology must be present,
Stripped	Matrix (S6)		Red Parent N	laterial (F2	21) <b>(MLR</b>	<b>4</b> 127, 147	7)	unless disturbed or problematic.
Restrictive L	ayer (if observed):							
Type:								,
Depth (inc	ches).						Hydric S	Soil Present? Yes V
Remarks:							,	<u> </u>
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/C	ounty: Columbia/Maury		Sampling Date: 3-18-2024		
Applicant/Owner: John Maher Builders State: TN Sampling Point: WTL						
Investigator(s): Billy Plant (TNQHP 1207-TN21), SEC, Inc. Section, Township, Range:						
Landform (hillslope, terrace, etc.): flood plain			ne). concave	Slone (%): 0-2		
Subregion (LRR or MLRA): LRR N Lat		Long: <u>-87</u>		Datum: WGS84		
Soil Map Unit Name: Lindell silt loam (Lc)		Long	NWI classific			
•	ar this time of year? V	oo V No /				
Are climatic / hydrologic conditions on the site typical f	-		(If no, explain in R			
Are Vegetation, Soil, or Hydrology				present? Yes No		
Are Vegetation, Soil, or Hydrology	naturally problema	tic? (If needed, e	xplain any answe	rs in Remarks.)		
SUMMARY OF FINDINGS – Attach site n	nap showing sam	pling point location	ons, transects	s, important features, etc.		
Hydrophytic Vegetation Present? Yes	No					
Hydric Soil Present? Yes	_ No	Is the Sampled Area within a Wetland?	Yes V	No		
Wetland Hydrology Present?	_ No	Within a Wollana.	100			
Remarks:	_ 110					
Linear trough where water drains in field; does not o	onnect to STM-1: grave	al nossibly commercial li	imestone in much	of hottom		
Ellical trough where water drains in field, does not o	officet to officer, grave	i, possibly confinercial ii	incstone in much	or bottom		
HYDROLOGY						
Wetland Hydrology Indicators:			Secondary Indica	tors (minimum of two required)		
Primary Indicators (minimum of one is required; chec	k all that apply)		Surface Soil			
✓ Surface Water (A1)	True Aquatic Plants (			getated Concave Surface (B8)		
l •	Hydrogen Sulfide Odd		Drainage Pa			
l • ·			Moss Trim L			
▼	Presence of Reduced			Water Table (C2)		
	Recent Iron Reduction		Crayfish Bur			
<del>V</del>	Thin Muck Surface (C		-	isible on Aerial Imagery (C9)		
l å	·	•		tressed Plants (D1)		
▼	Other (Explain in Rem	iaiks)				
Iron Deposits (B5)Inundation Visible on Aerial Imagery (B7)			Geomorphic	, ,		
			Shallow Aquitard (D3)			
✓ Water-Stained Leaves (B9)			Microtopographic Relief (D4) FAC-Neutral Test (D5)			
Aquatic Fauna (B13)			FAC-Neutral	Test (D5)		
Field Observations:	5 " "					
Surface Water Present? Yes No						
Water Table Present? Yes No Saturation Present? Yes No	_ Depth (inches):			./		
	_ Depth (inches):	Wetland H	lydrology Preser	nt? Yes V No		
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring)	well aerial nhotos nrev	vious inspections) if avai	ilahle:			
Besonse Recorded Bata (stream gauge, monitoring	won, acriai priotos, pro-	nodo mopeodono), n dva	ilabio.			
Damanita						
Remarks:						

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

	Absolute			Dominance Test worksheet:
Tree Stratum (Plot size:) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
2				
3				Total Number of Dominant Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 50 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)		= Total Cove	er	OBL species 40 x 1 = 40
1				FACW species x 2 =
				FAC species x 3 =
2				FACU species 40 x 4 = 160
3				UPL species x 5 =
4				Column Totals: 80 (A) 200 (B)
5				Column Totals. 60 (A) 200 (B)
6				Prevalence Index = B/A = 2.5
•		= Total Cove		Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size:)		- 10tal C0VE	·1	1 - Rapid Test for Hydrophytic Vegetation
1				2 - Dominance Test is >50%
2				_+ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
3				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5				
6				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
7				be present, unless disturbed or problematic.
Herb Stratum (Plot size: 10x10 )		= Total Cove	er	Definitions of Five Vegetation Strata:
1 Packera glabella	40	Υ	OBL	Tree – Woody plants, excluding woody vines,
2. December		Y		approximately 20 ft (6 m) or more in height and 3 in.
2. Poa annua				(7.6 cm) or larger in diameter at breast height (DBH).
3. Capsella bursa-pastoris				Sapling – Woody plants, excluding woody vines,
4				approximately 20 ft (6 m) or more in height and less
5				than 3 in. (7.6 cm) DBH.
6	_			Shrub – Woody plants, excluding woody vines,
7				approximately 3 to 20 ft (1 to 6 m) in height.
8				Herb – All herbaceous (non-woody) plants, including
9				herbaceous vines, regardless of size, and woody
10				plants, except woody vines, less than approximately 3
11				ft (1 m) in height.
12				Woody vine – All woody vines, regardless of height.
	80	= Total Cove	er	
Woody Vine Stratum (Plot size:)				
1	_			
2				
3				Hydrophytic
4				Vegetation /
5				Present? Yes V No
		= Total Cove	er	
Remarks: (Include photo numbers here or on a separate	sheet.)			1
· ·				

Sampling Point: WTL-3

SOIL Sampling Point: WTL-3

Profile Desc	cription: (Describe	to the dept	h needed to document the indicato	r or confirm	the absen	ce of indicators.)
Depth	Matrix		Redox Features	1 . 2		
(inches)	Color (moist)	%	Color (moist) % Type	Loc <sup>2</sup>	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
						_
		letion, RM=	Reduced Matrix, MS=Masked Sand (	Grains.		PL=Pore Lining, M=Matrix.
Hydric Soil					Ind	icators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface (S7)		—	2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Below Surface (S8)		148)	Coast Prairie Redox (A16)
	istic (A3)		Thin Dark Surface (S9) (MLRA	A 147, 148)		(MLRA 147, 148) Piedmont Floodplain Soils (F19)
	en Sulfide (A4) d Layers (A5)		Loamy Gleyed Matrix (F2) Depleted Matrix (F3)		_	(MLRA 136, 147)
	uck (A10) <b>(LRR N)</b>		Redox Dark Surface (F6)			Very Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Dark Surface (F7)		_	Other (Explain in Remarks)
	ark Surface (A12)	` '	Redox Depressions (F8)		_	,
	/ //ucky Mineral (S1) <b>(I</b>	LRR N,	Iron-Manganese Masses (F12	) (LRR N,		
MLRA	<b>A</b> 147, 148)		MLRA 136)			
	Sleyed Matrix (S4)		Umbric Surface (F13) (MLRA			ndicators of hydrophytic vegetation and
-	Redox (S5)		Piedmont Floodplain Soils (F1			wetland hydrology must be present,
	Matrix (S6)		Red Parent Material (F21) (ML	.RA 127, 147	) (	unless disturbed or problematic.
	Layer (if observed):	:				
Type:						./
Depth (in	ches):				Hydric So	oil 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		ne): none Slope (%): 0-2				
Subregion (LRR or MLRA): LRR N La						
Soil Map Unit Name: Lindell silt loam (Lc)	<u></u>	NWI classification: none				
Are climatic / hydrologic conditions on the site typical	for this time of year? Yes No V	<del></del>				
Are Vegetation, Soil, or Hydrology		I Circumstances" present? Yes No				
Are Vegetation, Soil, or Hydrology		explain any answers in Remarks.)				
Are vegetation, con, or rivationary	naturally problematic: (if needed,	explain any answers in remarks.)				
SUMMARY OF FINDINGS – Attach site	map showing sampling point location	ons, transects, important features, etc.				
Hydrophytic Vegetation Present?  Hydric Soil Present?  Yes  Yes	<del>/                                    </del>	Yes No 🗸				
Wetland Hydrology Present? Yes	No					
Remarks:  Area is saturated on occasion in aerial photograph:	s. Ponding location for sheet flow thru field					
Area is saturated on occasion in aeriai photographs	s. Folialing location for sheet now that held					
Precipitation has been greater than the 30-year av	erage					
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)				
Primary Indicators (minimum of one is required; che	ck all that apply)	Surface Soil Cracks (B6)				
	_ True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)				
<u> </u>	_ Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)				
<b> </b>	Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Lines (B16)				
· · ·	Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)				
	Recent Iron Reduction in Tilled Soils (C6)	, Crayfish Burrows (C8)				
Drift Deposits (B3)	Thin Muck Surface (C7)	✓ Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	_ Other (Explain in Remarks)	Stunted or Stressed Plants (D1)				
Iron Deposits (B5)		✓ Geomorphic Position (D2)				
Inundation Visible on Aerial Imagery (B7)		Shallow Aquitard (D3)				
Water-Stained Leaves (B9)		Microtopographic Relief (D4)				
Aquatic Fauna (B13)		FAC-Neutral Test (D5)				
Field Observations:						
Surface Water Present? Yes No	Depth (inches): 0-1"					
Water Table Present? Yes No	Depth (inches):	,				
Saturation Present? Yes Ves No	Depth (inches): Depth (inches): 0-12"	-lydrology Present? Yes <u>√</u> No				
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring	well period photos, provious inspections) if av	silable:				
Describe Necorded Data (stream gauge, monitoring	well, aerial priotos, previous inspections), il ava	allable.				
Remarks:						
Remarks.						

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

/EGETATION (Five Strata) – Use scientific ı	Sampling Point: <u>UPL-1</u>			
		Dominant Indicator	Dominance Test worksheet:	
<u>Tree Stratum</u> (Plot size:) 1		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)	
2			Total Number of Dominant	
3			Species Across All Strata: 2 (B)	
4			Percent of Dominant Species	
5			That Are OBL, FACW, or FAC: 50 (A/B)	
6	_		Prevalence Index worksheet:	
7			Total % Cover of: Multiply by:	
Sapling Stratum (Plot size:)		= Total Cover	OBL species 30 x 1 = 30	
1			FACW species x 2 =	
2			FAC species x 3 =	
3			FACU species x 4 = _200	
4			UPL species x 5 =	
5			Column Totals: <u>80</u> (A) <u>230</u> (B)	
6			Prevalence Index = B/A = 2.88	
7			Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size:)		= Total Cover	1 - Rapid Test for Hydrophytic Vegetation	
1			2 - Dominance Test is >50%	
2			+ 3 - Prevalence Index is ≤3.0 <sup>1</sup>	
3			4 - Morphological Adaptations <sup>1</sup> (Provide supporting	
4	_		data in Remarks or on a separate sheet)  Problematic Hydrophytic Vegetation¹ (Explain)	
5			1 Toblematic Hydrophytic Vegetation (Explain)	
6			<sup>1</sup> Indicators of hydric soil and wetland hydrology must	
7			be present, unless disturbed or problematic.	
Herb Stratum (Plot size: 10x10 )		= Total Cover	Definitions of Five Vegetation Strata:	
1. Packera glabella	30	Y OBL	Tree – Woody plants, excluding woody vines,	
2. Poa annua	50	Y FACU	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
3. Lamium amplexicaule	10			
4			Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less	
5			than 3 in. (7.6 cm) DBH.	
6			Shrub – Woody plants, excluding woody vines,	
7			approximately 3 to 20 ft (1 to 6 m) in height.	
8			<b>Herb</b> – All herbaceous (non-woody) plants, including	
9			herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3	
10 11			ft (1 m) in height.	
12			Woody vine – All woody vines, regardless of height.	
		= Total Cover	Trocky vino 7 ii woody vinos, regardiese or neight.	
Woody Vine Stratum (Plot size:)				
1				
2				
3			Hydrophytic	
4 5			Vegetation Present? Yes No	
<u>.                                    </u>		= Total Cover	riesent: res No	
Remarks: (Include photo numbers here or on a separate	sheet.)			
	•,			

SOIL Sampling Point: UPL-1

Profile Desc	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix		Redo	K Feature	S1	<del></del>	_	_	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Text</u>		
0-12"	10YR 3/4	100%						upland	
							-		
1 <sub>Turner</sub> C=Ce	naontration D-Dan	ation DM=	Paduaad Matrix MC		Cond Cre		21 apptis	ion, DI - Doro Lining M-Matrix	
Hydric Soil I	oncentration, D=Depl	elion, Rivi=r	Reduced Matrix, MS	=iviasked	Sand Gra	ains.		on: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils <sup>3</sup> :	
-			Dork Surface	(87)				2 cm Muck (A10) (MLRA 147)	
Histosol	ipedon (A2)		Dark Surface Polyvalue Be		oo (S8) <b>(N</b>	II DA 147	149)	Coast Prairie Redox (A16)	
Black His			Polyvalue Be		. , .		140)	(MLRA 147, 148)	
	n Sulfide (A4)		Loamy Gleye		•	-1, 1 <b>-1</b> 0)		Piedmont Floodplain Soils (F19)	
	I Layers (A5)		Depleted Mat	,	1 2)			(MLRA 136, 147)	
	ck (A10) <b>(LRR N)</b>		Redox Dark S		6)			Very Shallow Dark Surface (TF12)	
	Below Dark Surface	e (A11)	Depleted Dar	•	•		•	Other (Explain in Remarks)	
	rk Surface (A12)	,	Redox Depre				•		
	lucky Mineral (S1) <b>(L</b>	RR N,	Iron-Mangane			LRR N,			
	147, 148)		MLRA 130		, , ,				
Sandy G	leyed Matrix (S4)		Umbric Surfa	ce (F13) (	MLRA 13	6, 122)		<sup>3</sup> Indicators of hydrophytic vegetation and	
Sandy R	edox (S5)		Piedmont Flo	odplain S	oils (F19)	(MLRA 14	18)	wetland hydrology must be present,	
Stripped	Matrix (S6)		Red Parent M	laterial (F	21) <b>(MLR</b>	A 127, 147	7)	unless disturbed or problematic.	
Restrictive L	ayer (if observed):								
Type:									
Depth (inc	ches):						Hydrid	c Soil Present? Yes No	
Remarks:	,								
rtomanto.									



**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.									
Landform (hillslope, terrace, e	etc.): flood	plain	Local re	elief (concave, convex, no	one): concave	Slope (%): 0-2			
						Datum: WGS84			
Soil Map Unit Name: Lindell						ication: none			
Are climatic / hydrologic cond			or this time of year?	Yes No	(If no, explain in				
Are Vegetation, Soil _						present? Yes No			
Are Vegetation, Soil _					explain any answ				
, con_	, 01 11	yarology	natarany problem	natio: (ii nocaca,	explain any anow	ord in recinarios.)			
<b>SUMMARY OF FINDIN</b>	NGS - Atf	tach site m	ap showing sa	mpling point locati	ons, transect	s, important features, etc.			
					<u> </u>	· · · · · · · · · · · · · · · · · · ·			
Hydrophytic Vegetation Pres	sent?	Yes	_ No 🗸	Is the Sampled Area		,			
Hydric Soil Present?		Yes	_ No <b>V</b>	within a Wetland?	Yes	No 🗸			
Wetland Hydrology Present	?	Yes V	_ No						
Remarks:									
Low trough in field appears	s saturate in	aerial imager	y in some years						
Vegetation is in a fallow fa	arm field with	remnants of	sovbeans						
3			,						
HYDROLOGY									
Wetland Hydrology Indica	tore				Socondary India	eators (minimum of two required)			
Primary Indicators (minimum		oguirod: obool	( all that apply)		•	, , , , , , , , , , , , , , , , , , ,			
	il ol olle is i	•		<del></del>					
Surface Water (A1)			True Aquatic Plants						
High Water Table (A2) Saturation (A3)			Hydrogen Sulfide O						
<b>▼</b>				zospheres on Living Roots (C3) Moss Trim Lines (B16)					
Water Marks (B1)	`	· <u></u>		Reduced Iron (C4) Dry-Season Water Table (C2)					
Sediment Deposits (B2) Drift Deposits (B3)	)		Thin Muck Surface	Reduction in Tilled Soils (C6) Crayfish Burrows (C8)					
Algal Mat or Crust (B4)		·	Other (Explain in Re	<del></del>					
Iron Deposits (B5)			Otilei (Explain in Ne	in in Remarks) Stunted or Stressed Plants (D1) Geomorphic Position (D2)					
Inundation Visible on A	erial Imager	v (B7)			Shallow Aq				
Water-Stained Leaves (	_	y (D7)				raphic Relief (D4)			
Aquatic Fauna (B13)	(00)				FAC-Neutra	* *			
Field Observations:									
Surface Water Present?	Yes	No	Depth (inches):						
Water Table Present?									
	Yes V	/ No	Depth (inches): Depth (inches):	Watland	Hydrology Proce	ent? Yes No			
Saturation Present? (includes capillary fringe)	resv	NO	Depth (inches).	vvetiano	Hydrology Prese	mtr res No ·			
Describe Recorded Data (st	ream gauge	e, monitoring w	vell, aerial photos, pr	revious inspections), if av	ailable:				
Remarks:									

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

	Absolute	Dominant I		Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC:1 (A)
2				Total Number of Dominant
3				Species Across All Strata: 3 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 33% (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)		= Total Cove	er	OBL species 30 x 1 = 30
				FACW species x 2 =
1				FAC species x 3 =
2				FACU species 35 x 4 = 140
3				UPL species x 5 = 125
4				Column Totals: 90 (A) 295 (B)
5				Column Totals. 30 (A) 293 (B)
6				Prevalence Index = B/A = 3.3
7				Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size:)		= Total Cove	er	1 - Rapid Test for Hydrophytic Vegetation
1				2 - Dominance Test is >50%
2				- 3 - Prevalence Index is ≤3.0 <sup>1</sup>
				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5				
6		· ——		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
7				be present, unless disturbed or problematic.
		= Total Cove	er	
Herb Stratum (Plot size: 10x10 )				Definitions of Five Vegetation Strata:
Herb Stratum (Plot size: 10x10 )  1 Packera glabella	30	Y	OBL	
1. Packera glabella	30			Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Packera glabella     Avena sativa	30 25	Y Y	OBL UPL	Tree – Woody plants, excluding woody vines,
Packera glabella     Avena sativa     Poa annua	30	Y	OBL UPL FACU	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,
Packera glabella     Avena sativa     Poa annua     Capsella bursa-pastoris	30 25 25 10	Y Y Y	OBL UPL FACU FACU	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
Packera glabella     Avena sativa     Poa annua     Capsella bursa-pastoris	30 25 25 10	Y Y Y	OBL UPL FACU FACU	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,
Packera glabella     Avena sativa      Poa annua     Capsella bursa-pastoris      Capsella bursa-pastoris	30 25 25 10	Y Y Y	OBL UPL FACU FACU	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,
Packera glabella     Avena sativa     Poa annua     Capsella bursa-pastoris     .      Capsella bursa-pastoris	30 25 25 10	Y Y Y	OBL UPL FACU FACU	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.
Packera glabella     Avena sativa     Poa annua     Capsella bursa-pastoris     6.  7.  8.	30 25 25 10	Y Y Y	OBL UPL FACU FACU	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
1. Packera glabella 2. Avena sativa 3. Poa annua 4. Capsella bursa-pastoris 5. 6. 7. 8. 9.	30 25 25 10	Y Y Y	OBL UPL FACU FACU	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
1. Packera glabella 2. Avena sativa 3. Poa annua 4. Capsella bursa-pastoris 5. 6. 7. 8. 9. 10.	30 25 25 10	Y Y Y	OBL UPL FACU FACU	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
Packera glabella Avena sativa  Poa annua Capsella bursa-pastoris	30 25 25 10	Y Y Y	OBL UPL FACU FACU	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.
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Packera glabella Avena sativa  Poa annua Capsella bursa-pastoris   Capsella bursa-pastoris   Capsella bursa-pastoris   Capsella bursa-pastoris  Capsella bursa-pastoris  Capsella bursa-pastoris  Capsella bursa-pastoris	30 25 25 10	Y Y Y	OBL UPL FACU FACU	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.
1. Packera glabella 2. Avena sativa 3. Poa annua 4. Capsella bursa-pastoris 5. 6. 7. 8. 9. 10. 11. 12. Woody Vine Stratum (Plot size:)	30 25 25 10 	Y Y Y	OBL UPL FACU FACU	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.
1. Packera glabella 2. Avena sativa 3. Poa annua 4. Capsella bursa-pastoris 5. 6.	30 25 25 10	Y Y Y	OBL UPL FACU FACU	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.
1. Packera glabella 2. Avena sativa 3. Poa annua 4. Capsella bursa-pastoris 5. 6.	30 25 25 10 90	Y Y Y	OBL UPL FACU FACU	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.
1. Packera glabella 2. Avena sativa 3. Poa annua 4. Capsella bursa-pastoris 5. 6. 7. 8. 9. 10. 11. 12. Woody Vine Stratum (Plot size:) 1	30 25 25 10 90	Y Y Y	OBL UPL FACU FACU	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.
1. Packera glabella 2. Avena sativa 3. Poa annua 4. Capsella bursa-pastoris 5	30 25 25 10 90	Y Y Y	OBL UPL FACU FACU	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
1. Packera glabella 2. Avena sativa 3. Poa annua 4. Capsella bursa-pastoris 5. 6. 7. 8. 9. 10. 11. 12. Woody Vine Stratum (Plot size:) 1	30 25 25 10 90	Y Y Y	OBL UPL FACU FACU	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.
1. Packera glabella 2. Avena sativa 3. Poa annua 4. Capsella bursa-pastoris 5. 6. 7. 8. 9. 10. 11. 12. 12. 12. 13. 14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15	30 25 25 10 90	Y Y Y	OBL UPL FACU FACU	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
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1. Packera glabella 2. Avena sativa 3. Poa annua 4. Capsella bursa-pastoris 5. 6. 7. 8. 9. 10. 11. 12. 12. 12. 13. 14. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15	30 25 25 10 90	Y Y Y	OBL UPL FACU FACU	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
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Sampling Point: UPL-2

SOIL Sampling Point: <u>UPL-2</u>

Profile Desc	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix		Redo	K Feature:	s		_		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Textu	re Remarks	
0-6	10YR 3/3	100							
6-12	10YR 3/2	100						upland	
		- ——							
<sup>1</sup> Type: C=Co	ncentration D=Den	letion RM=	Reduced Matrix, MS	=Masked	Sand Gra	ins	<sup>2</sup> Locatio	n: PL=Pore Lining, M=Matrix.	
Hydric Soil I		iction, rtivi-	-reduced Matrix, Mc	-Washee	Odrid Ore			ndicators for Problematic Hydric Soils <sup>3</sup> :	
Histosol			Dark Surface	(\$7)			-	2 cm Muck (A10) (MLRA 147)	
	ipedon (A2)		Polyvalue Be		ce (S8) <b>(N</b>	I RA 147	148)	Coast Prairie Redox (A16)	
Black His			Thin Dark Su				140) _	(MLRA 147, 148)	
	n Sulfide (A4)		Loamy Gleye			47, 140)		Piedmont Floodplain Soils (F19)	
	Layers (A5)		Depleted Mat	,	)		_	(MLRA 136, 147)	
	ck (A10) <b>(LRR N)</b>		Redox Dark \$	. ,	6)			Very Shallow Dark Surface (TF12)	
	Below Dark Surfac	e (A11)	Depleted Dar				_	Other (Explain in Remarks)	
	rk Surface (A12)	` ,	Redox Depre				_	/	
	ucky Mineral (S1) (I	RR N,	Iron-Mangan			RR N.			
	147, 148)	•	MLRA 13		( )(	,			
	leyed Matrix (S4)		Umbric Surfa	•	MLRA 13	6, 122)		<sup>3</sup> Indicators of hydrophytic vegetation and	
	edox (S5)		Piedmont Flo				<b>1</b> 8)	wetland hydrology must be present,	
	Matrix (S6)		Red Parent N					unless disturbed or problematic.	
	ayer (if observed):			•	, ,			·	
Type:									
Depth (inc	hes).						Hydric	Soil Present? Yes No 🗸	
	, iio3).						Tiyano		
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 Consult	ants Project ID :
Site Name/Description: Trotwood @ Old Zion Rd Exd	STM-1
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 Source of recent & seasonal precipidata: USACE APT	low abnormally dry unknown
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 (circ Severe Moderate Slight	ele one & describe fully in Notes) : Absent

#### **Primary Field Indicators Observed**

Primary Indicators	NO	YES
Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species		WWC
Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		wwc
Daily flow and precipitation records showing feature only flows in direct response to rainfall		wwc
<ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase</li> </ol>		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
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
Sorting of soil textures or other substrate	0	1_	2	3
5. Active/relic floodplain	0	0.5	1	1.5
Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No:	= 0	Yes	= 3

<b>B.</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)	<u>Absent</u>	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 <sup>2</sup>	0	0.5	1	1.5

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

Total Points = $\frac{38.0}{}$
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

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



**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 Consult	ants Project ID :
Site Name/Description: Trotwood @ Old Zion Rd Exd	STM-2
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 Source of recent & seasonal precipidata: 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 (circ Severe Moderate Slight	ele one & describe fully in Notes) :  Absent

### **Primary Field Indicators Observed**

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

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

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

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

Overall Hydrologic Determination = Stream	
Secondary Indicator Score (if applicable) = 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
Continuous bed and bank	0	<b>X</b> 1.5	2	3
2. Sinuous channel	0	<u> </u>	2	3
3. In-channel structure: riffle-pool sequences	0		2	3
Sorting of soil textures or other substrate	0	<b>Ж</b> 1.5	2	3
5. Active/relic floodplain	0	0.5	1	1.5
Depositional bars or benches		1	2	3
7. Braided channel		1	2	3
Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts		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		= 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		1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	<u>1</u> .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 <sup>2</sup>	0	0.5	1	1.5

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

Total Points = $\frac{19.5}{}$
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

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



**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 Consult	eants Project ID :
Site Name/Description: Trotwood @ Old Zion Rd Exd	WWC-1
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, -87.13261
Previous Rainfall (7-days): 3.34" CoCoRaHS TN-MY-8 2.81" previous day	=
Precipitation this Season vs. Normal: abnormally wet Source of recent & seasonal precipidata: USACE APT	low abnormally dry unknown
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 (circ Severe Moderate Slight	cle one & describe fully in Notes) : Absent

### **Primary Field Indicators Observed**

Primary Indicators	NO	YES
Hydrologic feature exists solely due to a process discharge		WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species		WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions		wwc
Daily flow and precipitation records showing feature only flows in direct response to rainfall		wwc
<ol> <li>Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase</li> </ol>		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
Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	<b>E</b>	2	3
3. In-channel structure: riffle-pool sequences	0		2	3
4. Sorting of soil textures or other substrate	0	<b>Ж</b> 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
Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	Э	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>B.</b> Hydrology (Subtotal = 3.5 )	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel		1	2	3
15. Water in channel and >48 hours since sig. rain	0	J	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		1.5
18. Organic debris lines or piles (wrack lines)	0	0.5		1.5
19. Hydric soils in channel bed or sides of channel	No = 0 Yes =		= 1.5	

<b>C. Biology</b> (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	<b>X</b> 0.5	0
22. Crayfish in stream (exclude in floodplain)		1	2	3
23. Bivalves/mussels	9	1	2	3
24. Amphibians		0.5	1	1.5
25. Macrobenthos (record type & abundance)		1	2	3
26. Filamentous algae; periphyton		1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed <sup>2</sup>		0.5	1	1.5

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

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



**WWC-1** – channel forms coming out of field 35.580400, -87.132615



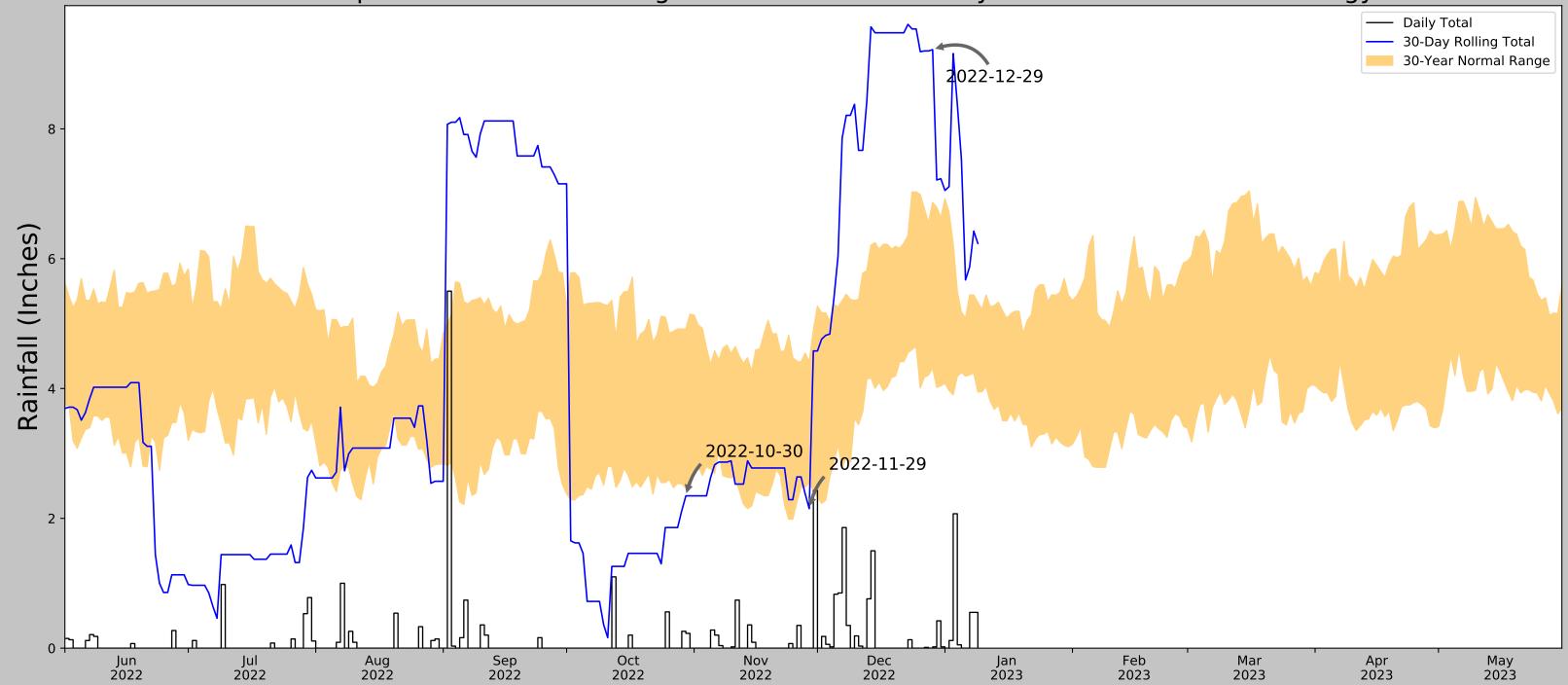
**WWC-1** – looking west 35.580465, -87.132779



**wwc-1** – end at STM-1 35.580522, -87.133037

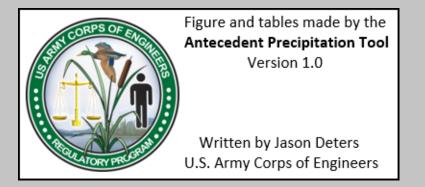
### NORMAL WEATHER CONDITIONS CALCULATION

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



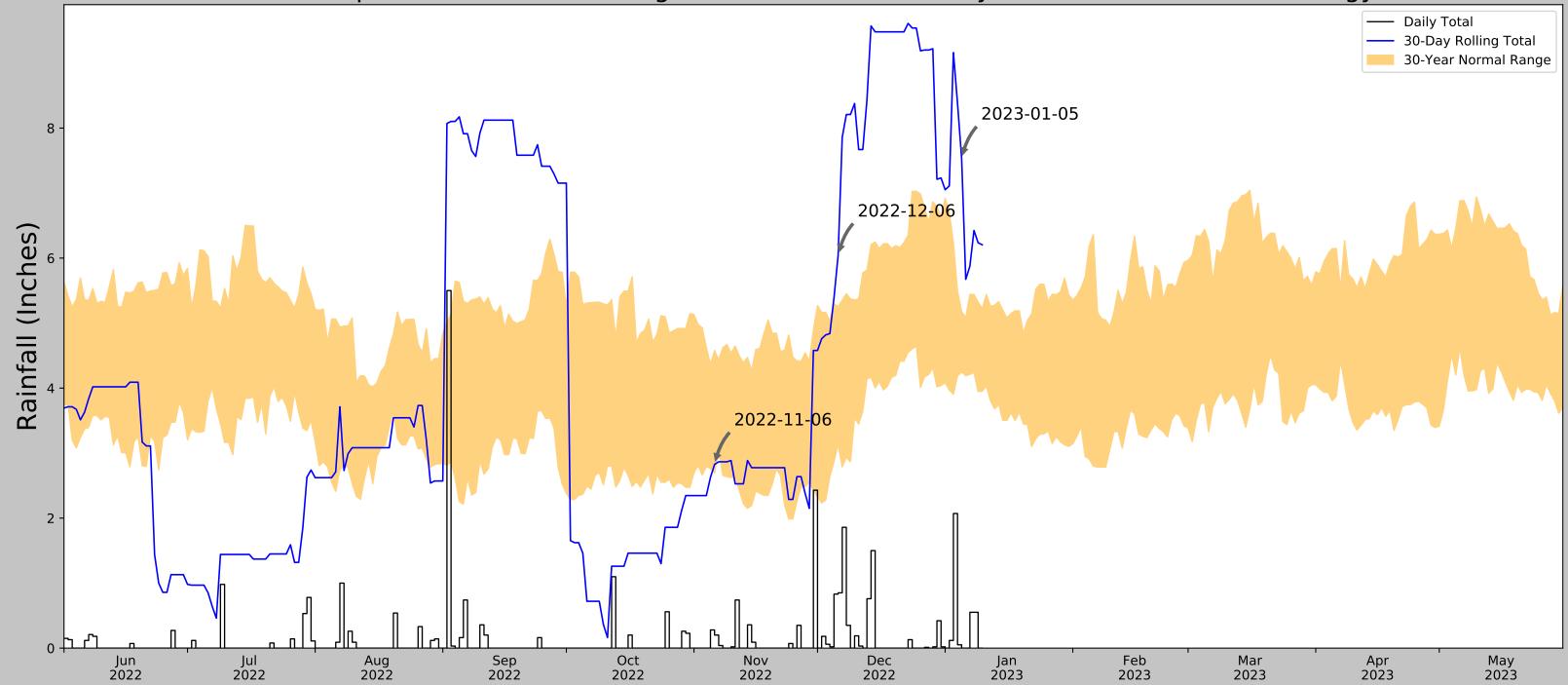
Coordinates	35.578699, -87.134760
Observation Date	2022-12-29
Elevation (ft)	686.23
Drought Index (PDSI)	Mild drought
WebWIMP H <sub>2</sub> O Balance	Wet Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %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



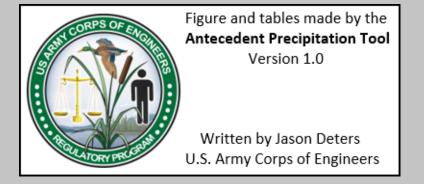
Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
COLUMBIA 3 WNW	35.6381, -87.0864	649.934	4.922	36.296	2.393	11233	80
COLUMBIA 0.3 WSW	35.6208, -87.0543	612.861	2.163	37.073	1.054	10	0
COLUMBIA 1.2 SSW	35.6072, -87.0592	722.113	2.625	72.179	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



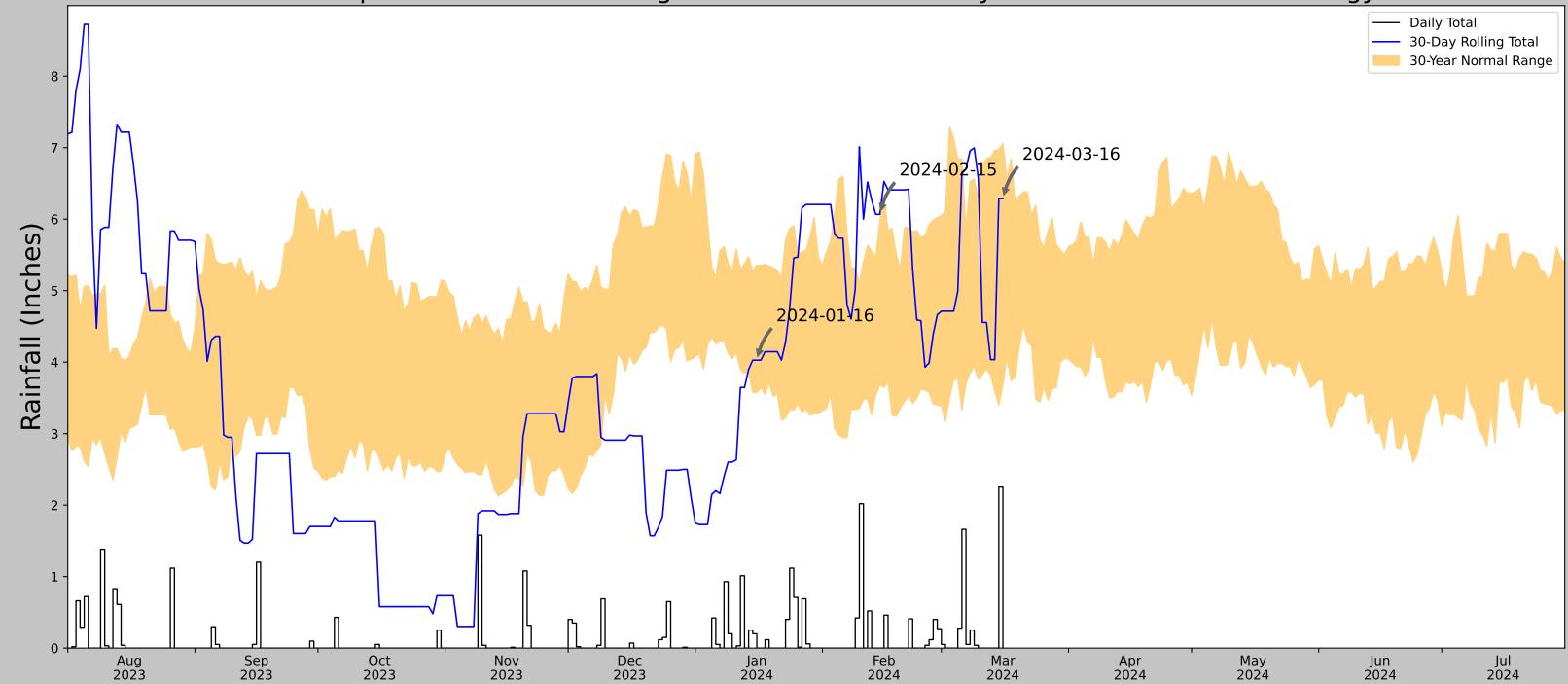
Coordinates	35.578699, -87.134790
Observation Date	2023-01-05
Elevation (ft)	686.23
Drought Index (PDSI)	Not available
WebWIMP H <sub>2</sub> O Balance	Wet Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %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



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 <sub>2</sub> O Balance	Wet Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %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



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:

Adding d. Pasour

RAARORIDATE347A

Dana C. McLendon

— Docusigned by:

Dana C. Melendon
— C239F0C7538D47F

Spence M. Armstrong

Spence M. Armstrong Trust by Edward Armstrong Trustee

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.

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:

Adding A. Pasour

Dana C. McLendon

DocuSigned by:

Dana C. McLundon

C239E0C7538D47E...

Spence M. Armstrong

Spence M. armstrong trust by Edward armstrong truster

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

Address: 1217 Trotwood Ave. Columbia, TN 38401