REVISED WATER RESOURCES INVENTORY

FOR

NORTH ETOWAH INDUSTRIAL PARK

ETOWAH, TENNESSEE

Prepared For: Mr. Mayor John Gentry McMinn County Government 6 East Madison Avenue Athens, TN 37303

Prepared by:



June 15, 2022

GEOServices Project # 24-22451



June 15, 2022

McMinn County Government 6 East Madison Avenue Athens, Tennessee 37303

- Attention: Mr. Mayor John Gentry jgentry@mcminncountytn.gov
- Subject: Revised Water Resource Inventory North Etowah Industrial Park Etowah, Tennessee GEOServices Project No. 24-22451

Dear Mayor Gentry:

GEOServices, LLC has completed a Water Resource Inventory to assess the jurisdictional status of hydrologic features at the referenced project, located on at Jack King Drive and North Industrial Drive in Etowah, Tennessee. Please see our findings in the attached report.

GEOServices appreciates the opportunity to continue providing services to you and looks forward to working with you in the future. If you have any questions, please do not hesitate to contact us at your convenience.

Sincerely, GEOServices, LLC

Cierra Homic Environmental Scientist

Gason Mam

Jason Mann, PE, TN-QHP # 1042-TN10 Senior Project Manager

1.0 INTRODUCTION

GEOServices, LLC (GEOServices) performed a Water Resource Inventory on multiple hydrologic features located in the Chestuee Creek Lower Watershed, located on multiple parcels west of North Industrial Drive in Etowah, Tennessee. The site investigation and hydrologic assessment was conducted on June 01, 2022, and June 9, 2022, by staff of GEOServices.

2.0 SITE DESCRIPTION

The subject project location is described as Map 097, Parcel 018.00 and Map 087, Parcel 206.00 according to the McMinn County Property Assessor. The approximate coordinates for the area of concern are Latitude: North 35.3755°, Longitude West -84.5294°. The overall project footprint is approximately 280 acres in size; **Figure 1** in **Appendix A** provides an overview of the subject location. The site is comprised of pasture areas and strands of forest. The site is surrounded by undeveloped, agricultural, and residential properties.

Figure 2 in **Appendix A** illustrates the location of the hydrologic resources evaluated on site. Seven channels were evaluated on the site. Channel 1 enters the property east of North Industrial Drive and flows southwest across the southeastern corner of the property. Channel 2 was observed within a hillside feature on the southern part of the property. The feature appeared to be formed due to the hillside releasing perched groundwater from recent rain events. At approximately lat/lon 35.3735°, -84.5285° Channel 2 formed a confluence with Channel 1. Channel 3 enters the property on the northwestern property boundary and flows southwest and exits the property via a culvert that runs under County Road 561. Channel 4 flows north parallel with County Road 561 contained a springhead with an obvious indication of groundwater contribution. Channel 5 runs south parallel to County Road 561 and did not have any flow. At approximately lat/lon 35.3772°, -84.5388° channels 4 and 5 formed a confluence with Channel 3. Channel 6 was observed within a hillslope feature along the northwest property boundary. At approximately lat/lon 35.3780°, -84.5385° Channel 6 formed a confluence with Channel 3. The channels have been

evaluated using the Tennessee Department of Environment and Conservation Hydrologic Determination Field Data form v1.5. Weather calculations, field data sheets, photos, and a copy of QHP Certification 1042-TN10 is provided in the attached appendices.

Based on the current Topographic Maps (**Figure 3** in **Appendix A**), Channel 1 is the only channel designated as a "blue line" feature. Additionally, the topography of the property has an approximate elevation range between approximately 860 and 920 feet above mean sea level.

The soils map associated with this site are shown as **Figure 4** in **Appendix A**. There are multiple soil types mapped on site. One of the soils mapped on site has a hydric rating component, however, hydric soils were found at multiple locations during the site investigation.

The entire project lies in the Chestuee Creek Lower Watershed (HUC 060200021003), which is nested within the Hiwassee River Watershed (HUC 06020002). The site drains to Blair Branch which is listed as impaired for habitat alteration in stream-side or littoral vegetative covers and Escherichia coli (*E. coli*).

3.0 RESOURCE DESCRIPTION

Figure 2 in Appendix A illustrates the location of the hydrologic resources evaluated on site. Seven channels were evaluated on the property. Wetland indicators such as hydric soils, wetland vegetation, and hydrologic features were observed upon site investigation. There was evidence of hydric soils, hydrophytic vegetation and hydrology on site in combination at six observed locations. The individual data points were reviewed using guidance from the 1987 Corps of Engineers Wetlands Delineation Manual (Technical Report Y-87-1) and the applicable regional supplement. A delineation of those data points is included in **Figure 2**. Photographs taken during the site investigation are included in **Appendix B**. The data collected during the site investigation can be found in **Appendix C**. In total one (1) pond feature were discovered in the central portion of the property. This hydrologic feature was observed to not have flowing water entering and/or leaving the pond. The elevation of the shallow pond, coupled with its geomorphic position of nearby hillslopes indicate complete segregation from the underlying groundwater table.

4.0 SOIL SURVEY

As shown in **Figure 4**, the site's hydrologic features are predominantly underlain by soils listed in **Table I**. One of the soils mapped on site is listed as hydric by the USDA Web Soil Survey, Hydric Rating by Map Unit.

Symbol	Soil Name	Description	Hydric
Rk	Rockdell gravelly loam	0 to 3 percent slopes, gravelly alluvium derived from cherty limestone	No
Bm	Bloomingdale silty clay loam	0 to 2 percent slopes, occasional flooding, Gravelly alluvium derived from limestone and shale	Yes
TaC	Tasso loam	5 to 12 percent slopes, loamy colluvium and/or alluvium over residuum weathered from limestone	No
На	Hamblen silt loam	0 to 3 percent slopes, occasional flooding, loamy alluvium derived from limestone, sandstone, and shale	No
Eo	Eo Etowah loam 0 to 3 percent slopes, occasion flooded, over wash, loamy alluvio colluvium derived from limest sandstone, and shale		Yes
CnC2	CnC2 Coile silt loam 5 to 12 percent slo channery residuum wacid sha		No
FgF2	FgF2Fullerton gravelly silt25 to 60 percent slopes, eroded, load creep deposits derived from chert limestone over clayey residuum weathered from cherty limestone		No

Table I: Potential Soils Located on the Subject Location

5.0 NATIONAL WETLANDS INVENTORY MAP

The National Wetlands Inventory (NWI) map was reviewed to identify any potential wetlands within the boundaries or adjacent to the site. The NWI map is included as **Figure 5** in **Appendix A** of this report. The NWI map has identified potential Freshwater and Forested wetland features along Channel 1.

6.0 METHODS

The Channels were evaluated using the most current Tennessee Department of Environment and Conservation Hydrologic Determination Field Data form. Weather calculations, field data sheets, photos, and a copy of QHP Certification 1042-TN10 is provided in the attached appendices. Potential wetland areas were analyzed following the routine three parameter approach to wetland delineations as published by the U.S. Army Corps of Engineers (USACE), 1987 edition (Technical Report Y-87-1), and the Regional Supplement for Eastern Mountains and Piedmont Region. Photographs taken during the investigation are included in **Appendix B.** Field data sheets were completed during the determination and are provided in **Appendix C**.

7.0 RESULTS

Channel 1, Unnamed Tributary to Blair Branch – Stream due to secondary stream indicators; a secondary indicator score of **22.5** was calculated using a rigorous and reasonable amount of effort. Channel 1 shows evidence of weak hydrology, biology, and geomorphology. There was some flowing water, some fibrous and rooted plants, and multiple culverts were found.

Channel 2, Unnamed Tributary to Blair Branch – Wet Weather Conveyance (WWC) due to secondary stream indicators; multiple fish species were observed, and a secondary indicator score of **6.5** was calculated using a rigorous and reasonable amount of effort. Channel 2 ties into Channel 1 in the southeastern corner of the property.

Channel 3, Unnamed Tributary to Blair Branch – Stream due to secondary stream indicators; a secondary score of **26** was calculated using rigorous and reasonable amount of effort. Channel 3 shows weak geomorphology and biology characteristics but strong hydrology characteristics. A few amphibians, strong flow, hydric soil, and a moderate floodplain was observed.

Channel 4, Unnamed Tributary to Blair Branch – Stream due to primary and secondary stream indicators; a secondary score of **20.5** was calculated using rigorous and reasonable amount of effort. Channel 4 shows weak geomorphology and hydrology but moderate biology characteristics. A moderate amount of leaf litter and rooted plants were observed.

Channel 5, Unnamed Tributary to Blair Branch – Wet Weather Conveyance (WWC) due to secondary score of **12.5** was calculated using rigorous and reasonable amount of effort. Channel 5 shows weak geomorphology and hydrology characteristics but strong biology characteristics. Channel 5 had no flow, a lot of leaf litter and a weak floodplain.

Channel 6, Unnamed Tributary to Blair Branch – Stream due to primary and secondary stream indicators; a secondary score of **19** was calculated using rigorous and reasonable amount of effort. Channel 6 shows weak hydrology and biology characteristics but weak geomorphology characteristics. A spring head was clearly associated with this feature, a distinct continuous bed and bank, some flow, and wetland plants in the channel bed were observed.

Channel 7, Unnamed Tributary to Blair Branch – Stream due to secondary stream indicators; a secondary score of **26** was calculated using rigorous and reasonable amount of effort. Channel 7 shows moderate geomorphology and hydrology but weak biology characteristics. A defined bed and bank, moderate flow, and fibrous roots were observed.

Wetland A – An approximately 2.22-acre wetland was delineated during this investigation. The jurisdictional feature is hydrologically connected to a stream (Channel 1) on site.

Wetland B – An approximately 0.10-acre wetland was delineated during this investigation. The jurisdictional feature is hydrologically connected to a stream (Channel 1) on site.

Wetland C – An approximately 0.46-acre wetland was delineated during this investigation. The jurisdictional feature is hydrologically connected to a stream (Channel 3) on site.

Wetland D – An approximately 0.52-acre wetland was delineated during this investigation. The jurisdictional feature is hydrologically connected to a stream (Channel 6) on site.

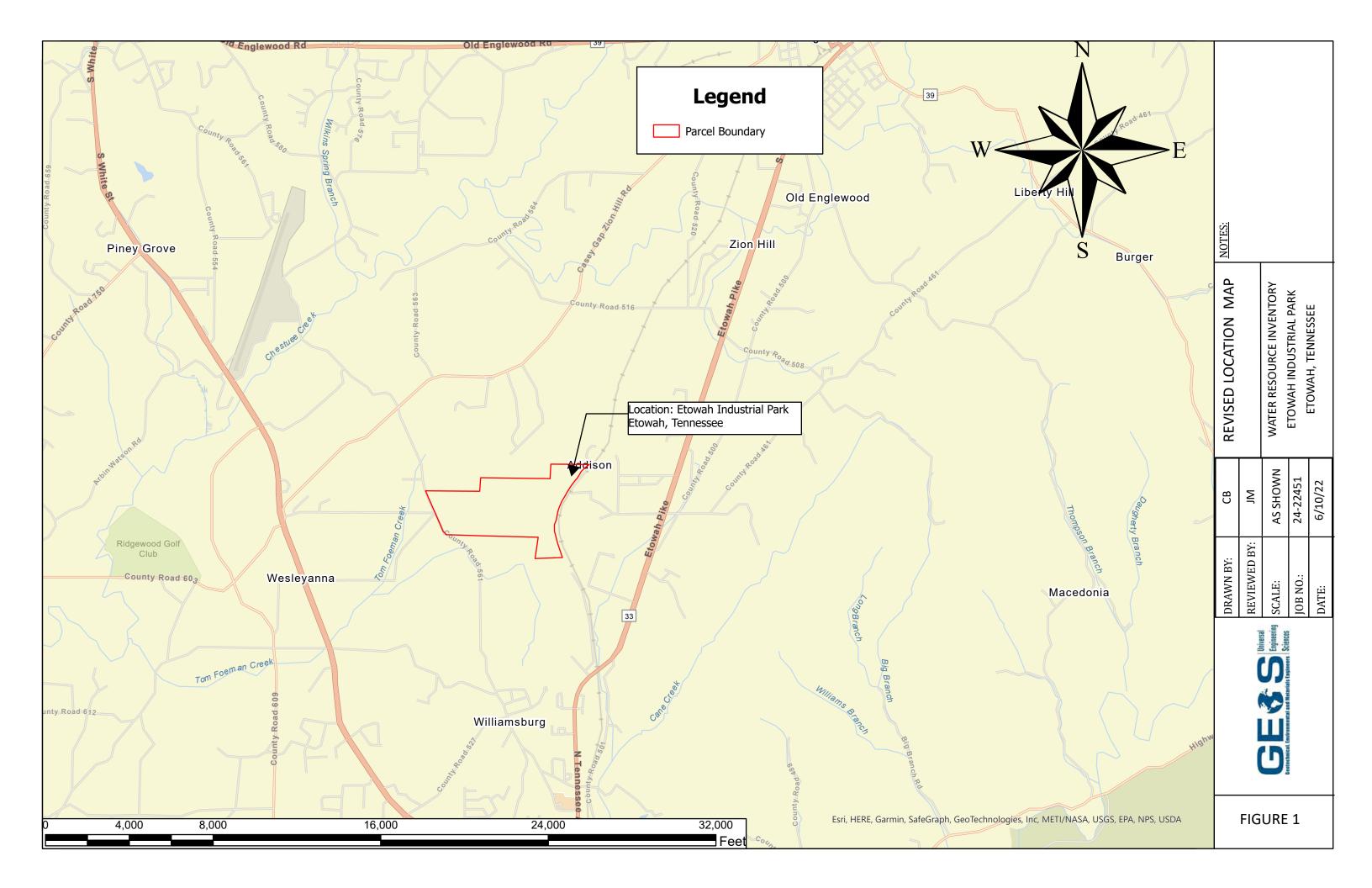
Wetland E – An approximately 0.35-acre wetland was delineated during this investigation. The jurisdictional feature is hydrologically connected to a stream (Channel 7) on site.

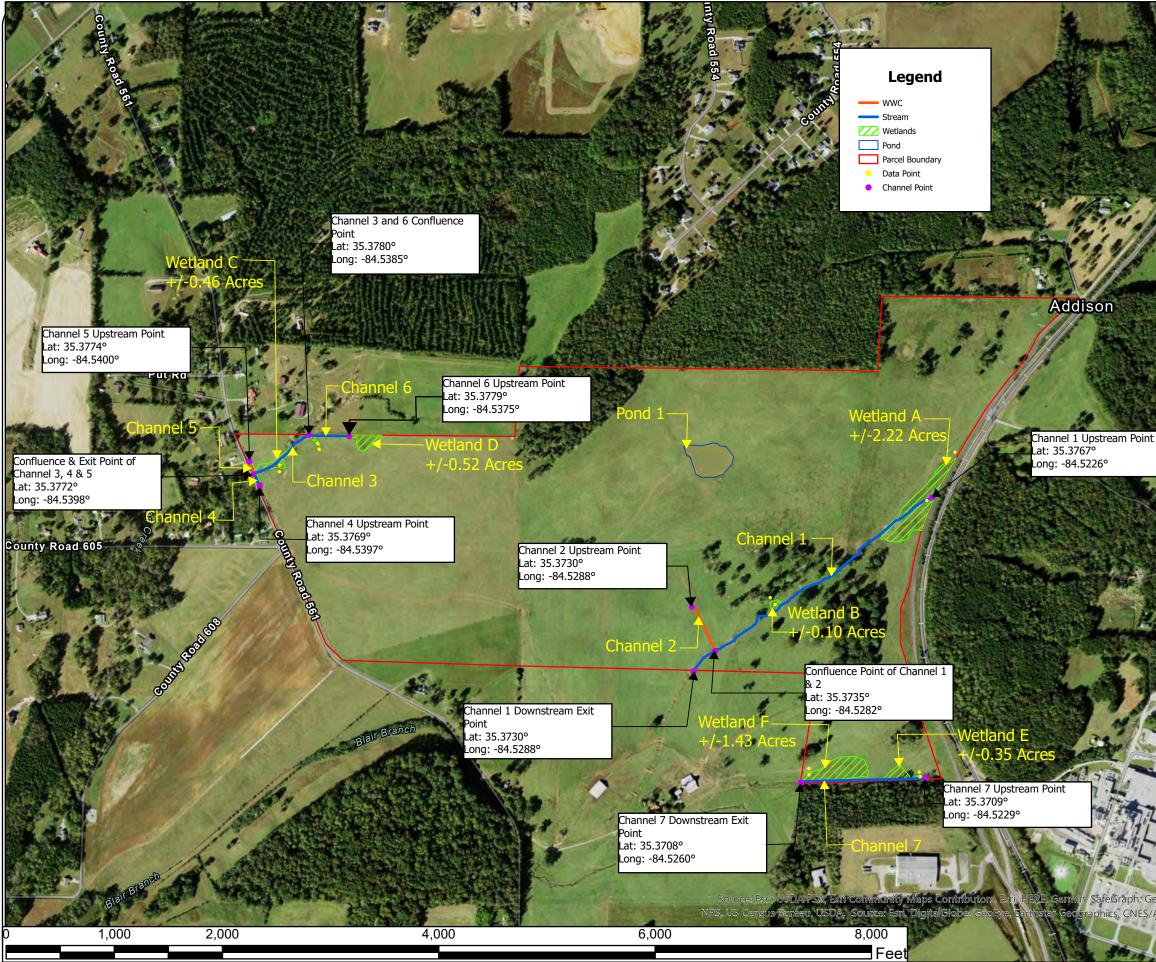
Wetland F – An approximately 1.43-acre wetland was delineated during this investigation. The jurisdictional feature is hydrologically connected to a stream (Channel 7) on site.

Pond 1 – Non-Jurisdictional Feature due to lack of flowing channels entering or leaving the pond, geomorphic position, and elevation.

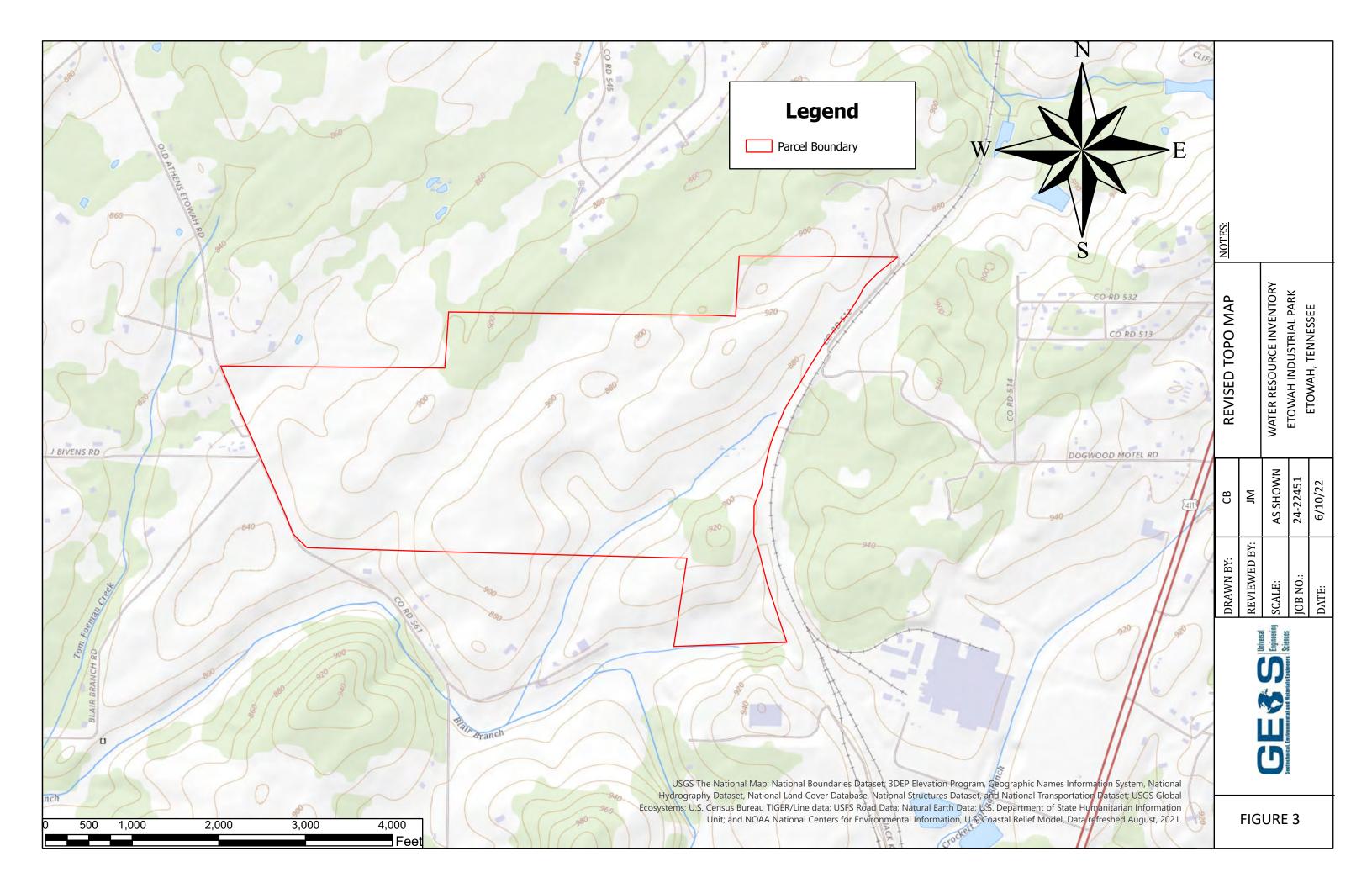
Figure 2 illustrates the georeferenced locations of the water resources in question, and is included in **Appendix A**.

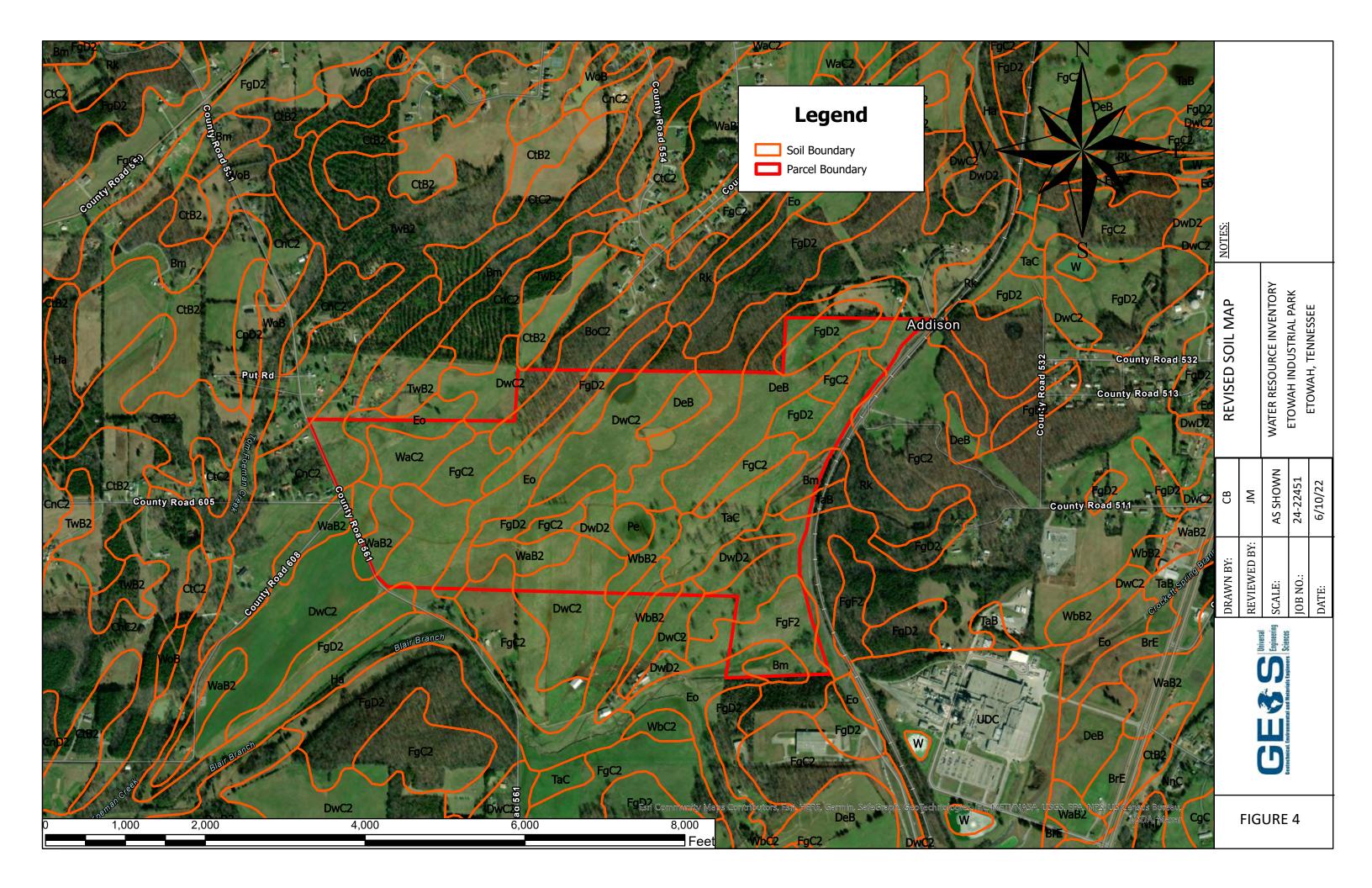
Appendix A Figures

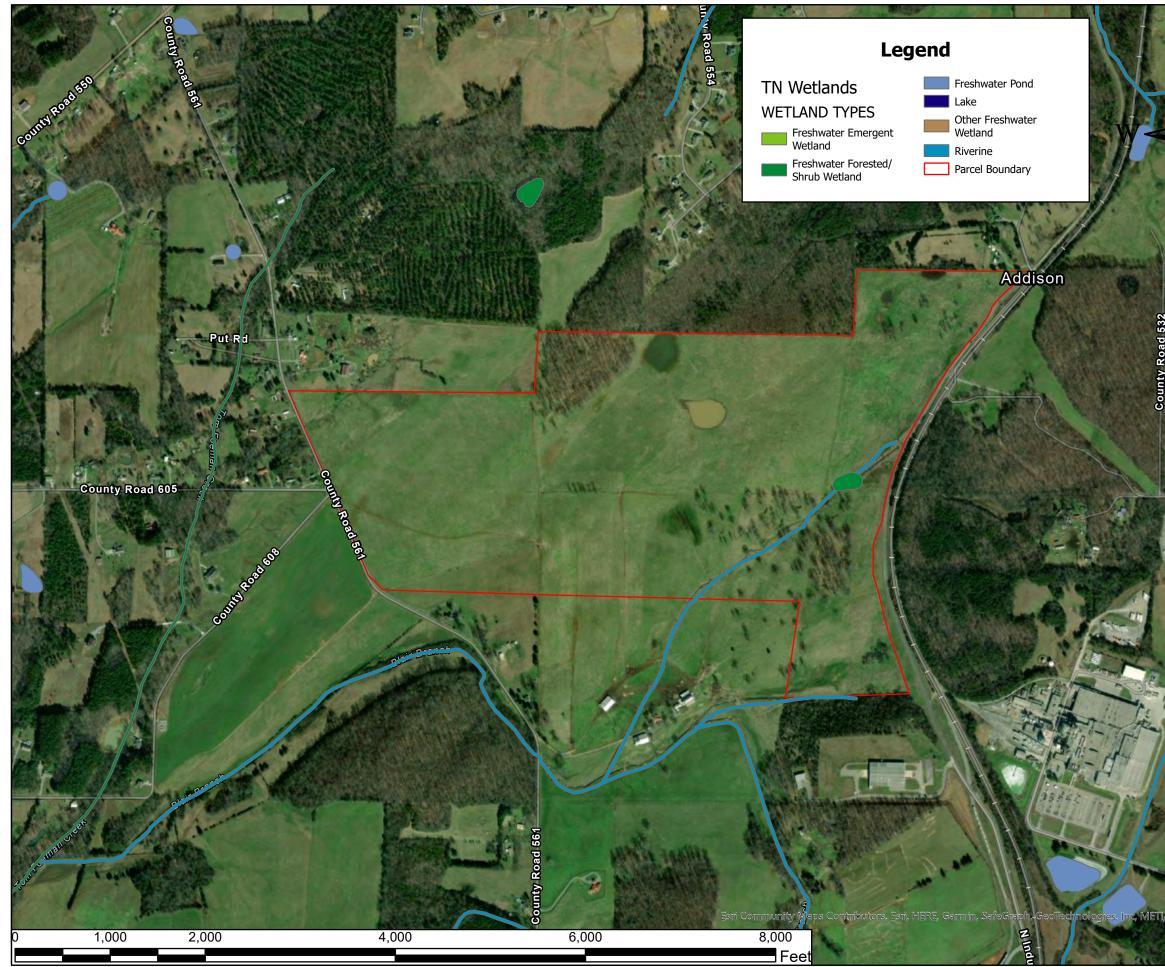




	<u>NOTES:</u>				
County Road 51	REVISED FINDINGS MAP		WATER RESOURCE INVENTORY	ETOWAH INDUSTRIAL PARK	EIOWAH, IEINNESSEE
County-Road 511	CB	Мſ	AS SHOWN	24-22451	6/10/22
Contraction of the second seco	DRAWN BY:	REVIEWED BY:	SCALE:	JOB NO.:	DATE:
eoTechnologies, Inc. METI/NASA, USGS, EPA	GGERSS S Unversal Engineering Seinces				
Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community		FIG	URE	2	







	NOTES:				
County Road 532 County Road 513 County Road 513	REVISED NWI MAP		WATER RESOURCE INVENTORY	ETOWAH INDUSTRIAL PARK	EIOWAH, IENNESSEE
State Book	CB	ML	AS SHOWN	24-22451	6/10/22
Contraction Contraction	DRAWN BY:	REVIEWED BY:	SCALE:	JOB NO.:	DATE:
	Divisoral Material Engineering Sciences				
NASA, USGS, EPA, NPS, US Census Bureau, USDA, Metxar		FIG	URE	5	

Appendix B Photographs





Photo 1: Wetland A



Photo 2: Wetland A vegetation (common rush and rice cutgrass)





Photo 3: Hydric soil sample from Wetland A



Photo 4: Upstream point of Channel 1 within Wetland A with culvert





Photo 5: Wetland A hydrology



Photo 6: Upper section of Channel 1 showing wetland plants in the channel bed





Photo 7: Typical representation of Channel 1



Photo 8: Lower section of Channel 1





Photo 9: Pool in Channel 1 where multiple species of tadpoles were discovered



Photo 10: Lower section of Channel 1 culvert





Photo 11: Confluence point of Channel 1 and 2



Photo 12: Lower section of Channel 2





Photo 13: Typical representation of Channel 2



Photo 14: Upper Section of Channel 2





Photo 15: Pond 1



Photo 16: Wetland B





Photo 17: Hydric soil from Wetland B



Photo 18: Wetland B vegetation (common rush and rice cutgrass)





Photo 19: Typical representation of Wetland C and Channel 3



Photo 20: Wetland C hydrology and vegetation (rice cutgrass)





Photo 21: Confluence point of Channels 3, 4, and 5



Photo 22: Crayfish found in Channel 4





Photo 23: Typical representation of Channel 4



Photo 24: Typical representation of Channel 5





Photo 25: Culvert within Wetland C and Channel 3



Photo 26: Confluence point of Channel 3 and 6







Photo 28: Upper section of Wetland D showing sedges and rice cutgrass





Photo 29: Hydric soil from Wetland C



Photo 30: View of Wetland E and F





Photo 31: Wetland F vegetation (common rush, sedges and rice cutgrass)



Photo 32: Wetland E vegetation (sedges and rice cutgrass)





Photo 33: Hydric soil from Wetland E



Photo 34: Upland soil





Photo 35: Upper section of Channel 7



Photo 36: Typical representation of Channel 7





Photo 37: Lower section of Channel 7



Photo 38: Point where Channel 7 leaves the property

Appendix C Field Data Sheets

U.S. Ari WETLAND DETERMINATION DATA See ERDC/EL TR-12-9		ntains and Piedmont Reg	ion Requirement Co	710-0024, Exp:11/30/2024 ntrol Symbol EXEMPT: 135-15, paragraph 5-2a)
Project/Site: North Etowah Indus	trial Park	City/County:	/inn s	ampling Date: 6/1/22
Applicant/Owner:		` `		ampling Point: DP 1
nvestigator(s) Jason Mann, Clayto	n Biden, Cierra Hom	iCSection, Township, Range		· · ·
		_ .ocal relief (concave, convex		Slope (%):
Subregion (LRR or MLRA): N 126				Datum:
Soil Map Unit Name: BM - Blooming		Long.		: Freshwater Fore
Are climatic / hydrologic conditions on the				olain in Remarks.)
Are Vegetation, Soil, or Hy			Circumstances" present?	
Are Vegetation, Soil, or Hy	drologynaturally prol	blematic? (If needed, ex	xplain any answers in Rem	arks.)
SUMMARY OF FINDINGS – Atta	ch site map showing	sampling point locat	ions, transects, impo	ortant features, etc
	Yes X No	In the Compled Area		
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes X No Yes X No	Is the Sampled Area within a Wetland?	Yes X	No
Wetland Hydrology Present?	Yes X No		1631	
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (m Surface Soil Cracks X Sparsely Vegetated X Drainage Patterns (B Moss Trim Lines (B1 Dry-Season Water T Crayfish Burrows (C	(B6) Concave Surface (B8) 310) 6) fable (C2)
Drift Deposits (B3) Algal Mat or Crust (B4) Iron Deposits (B5) Inundation Visible on Aerial Imagery Water-Stained Leaves (B9) Aquatic Fauna (B13)	Thin Muck Surface Other (Explain in R	(C7)		n Aerial Imagery (C9) Plants (D1) n (D2) 3) elief (D4)
Field Observations: Surface Water Present? Yes Water Table Present? Yes Saturation Present? Yes (includes capillary fringe) Describe Recorded Data (stream gauge,	No Depth (inc No Depth (inc		Hydrology Present?	Yes X No
Remarks:				

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

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size:)	% Cover	Species?	Status	Dominance Test worksheet:
1. Salix nigra	5	Y	OBL	Number of Dominant Species
2.				That Are OBL, FACW, or FAC: (A)
3.				Total Number of Dominant
4.				Species Across All Strata: (B)
5				Percent of Dominant Species
6.				That Are OBL, FACW, or FAC: (A/B)
7.				Prevalence Index worksheet:
···	5	Tatal Quarter		
		=Total Cover		Total % Cover of: Multiply by:
50% of total cover:	20%	o of total cover:		OBL species <u>44</u> x 1 = <u>44</u>
Sapling/Shrub Stratum (Plot size:)				FACW species <u>30</u> x 2 = <u>60</u>
1.				FAC species x 3 =
2.				FACU species 15 x 4 = 60
3.				UPL species $5 \times 5 = 25$
				· · · · · · · · · · · · · · · · · · ·
4.				Column Totals: 100 (A) 189 (B)
5				Prevalence Index = B/A = 1.89
6				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
8.				2 - Dominance Test is >50%
9				X 3 - Prevalence Index is ≤3.0 ¹
		=Total Cover		4 - Morphological Adaptations ¹ (Provide supporting
50% of total cover:	20%	o of total cover:		data in Remarks or on a separate sheet)
Herb Stratum (Plot size:)				Problematic Hydrophytic Vegetation ¹ (Explain)
1 Juncus effusus	30	Y	FACW	
2. Carex lurida	10	N	OBL	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	<u>10</u> 2			
3. Solanum carolinense		<u>N</u>	FACU	Definitions of Four Vegetation Strata:
4. Verbascum thapsus	2	Ν	FACU	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
5. Carduus nutans	5	N	UPL	more in diameter at breast height (DBH), regardless of
6. Juniperus virginiana	2	N	FACU	height.
7. Ligustrum sinense	15	N	FACU	Conting/Charts Weady plants evoluting visco loss
	-			Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft
	25	<u></u>	OBL	(1 m) tall.
9. Alisma triviale	4	IN	OBL	
10				Herb – All herbaceous (non-woody) plants, regardless
11.				of size, and woody plants less than 3.28 ft tall.
	95	=Total Cover		Woody Vine – All woody vines greater than 3.28 ft in
50% of total cover: X		of total cover:		height.
	2070			
Woody Vine Stratum (Plot size:)				B/A = 1.89
1				D/A = 1.09
1				
2.				
2				
2				
2 3 4				
2				Hydrophytic
2 3 4		=Total Cover		Vegetation
2 3 4	20%	=Total Cover		
2				Vegetation
2. 3. 4. 5.				Vegetation
2				Vegetation

SOIL

Depth	Matrix		Redo	x Featur	es					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Rema	rks
0-10	10YR 6/1	100					Clay loan	n		
		<u> </u>								
1 <u>т о о</u>							2,	<u> </u>		
Hydric Soil I	ncentration, D=Depl	etion, RM	=Reduced Matrix, N	/IS=Mas	ked Sand	d Grains.			ore Lining, M=	Matrix. ic Hydric Soils ³
Histosol			Polyvalue Be	elow Su	face (S8) (MLRA 1			ck (A10) (MLI	-
	ipedon (A2)		Thin Dark Su		• •		-		airie Redox (A	
Black His	,		Loamy Muck				-		147, 148)	,
	n Sulfide (A4)		X Loamy Gley	•	• • •	,		•	t Floodplain S	Soils (F19)
	Layers (A5)		Depleted Ma		• •		-		, 136, 147)	
	ck (A10) (LRR N)		Redox Dark	• • •					ent Material (F	-21)
	Below Dark Surface	e (A11)	Depleted Da		` '		-		de MLRA 127	,
	rk Surface (A12)	(,,,,)	Redox Depr		. ,			•	allow Dark Su	
	ucky Mineral (S1)		x Iron-Mangar		• •) (LRR N	-		xplain in Rem	. ,
	leyed Matrix (S4)		MLRA 13		(-, (,	-		·····	
	edox (S5)		Umbric Surfa			122, 136)	3	³ Indicators of	hydrophytic y	egetation and
	Matrix (S6)		Piedmont Fl	•	<i>,</i> ,					st be present,
	face (S7)		Red Parent	•	•	<i>,</i> ,			sturbed or pro	•
Restrictive L	ayer (if observed):									
Type:										
Depth (in	ches):						Hydric Soil P	resent?	Yes X	No
						-				

Project/Site: North Etowah Industrial Park	City/County: McMinn s	Sampling Date: <u>6/1/22</u>								
Applicant/Owner:	State: <u>TN</u>	_ Sampling Point: DP2								
Investigator(s): Jason Mann, Clayton Biden, Cierra HomicSection, Township, Range:										
Landform (hillslope, terrace, etc.): Hillside	ocal relief (concave, convex, none): <u>None</u>	Slope (%):								
Subregion (LRR or MLRA): N 126 Lat: 35.3763	Long: <u>-84.5234</u> °	Datum:								
Soil Map Unit Name: <u>Rk - Rockdell gravelly loam</u>	NWI classifica	tion: NA								
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No (If no, explain in Re	marks.)								
Are Vegetation, Soil, or Hydrology significantly	y disturbed? Are "Normal Circumstances" pro	esent? Yes No								
Are Vegetation, Soil, or Hydrology naturally pr	oblematic? (If needed, explain any answers	s in Remarks.)								

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No <u>X</u> No <u>X</u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes	No <u>x</u>
Remarks:					

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 Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3) Oxidized Rhizospheres on Living	g Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled S	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 <u>No X</u> Depth (inches):	
Water Table Present? Yes <u>No </u> Depth (inches):	
Saturation Present? Yes No _x Depth (inches):	Wetland Hydrology Present? Yes NoX
Saturation Present? Yes No x Depth (inches): (includes capillary fringe)	
Saturation Present? Yes No x Depth (inches): (includes capillary fringe)	
Saturation Present? Yes No _x Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	
Saturation Present? Yes No _x Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	
Saturation Present? Yes No _x Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	
Saturation Present? Yes No _x Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	
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Saturation Present? Yes No _x Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	
Saturation Present? Yes No _x Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	
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Saturation Present? Yes No _x Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	

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

	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1)	<u>% Cover</u> <u>Species?</u> <u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant
3		Species Across All Strata: (B)
4		Percent of Dominant Species
5		That Are OBL, FACW, or FAC: (A/B)
6	= Total Cover	Prevalence Index worksheet:
50% of total cover:	20% of total cover:	Total % Cover of:Multiply by:
Sapling Stratum (Plot size:)		OBL species x 1 =
		FACW species x 2 =
1 2		FAC species x 3 = 300
3		FACU species x 4 =
4		UPL species x 5 =
5		Column Totals: <u>100</u> (A) <u>300</u> (B)
6		Prevalence Index = B/A =3.0
	= Total Cover	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of total cover:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:)		2 - Dominance Test is >50%
1		<u>X</u> 3 - Prevalence Index is $\leq 3.0^1$
2		4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3		Problematic Hydrophytic Vegetation ¹ (Explain)
4		
5		¹ Indicators of hydric soil and wetland hydrology must
6		be present, unless disturbed or problematic.
	= Total Cover	Definitions of Five Vegetation Strata:
50% of total cover:	20% of total cover:	Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size:)	100	approximately 20 ft (6 m) or more in height and 3 in.
1. Festuca spp.	100 Y FAC	(7.6 cm) or larger in diameter at breast height (DBH).
2		Sapling – Woody plants, excluding woody vines,
34.		approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
5.		Shrub – Woody plants, excluding woody vines,
6		approximately 3 to 20 ft (1 to 6 m) in height.
7		Herb – All herbaceous (non-woody) plants, including
8		herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9		ft (1 m) in height.
10		Woody vine – All woody vines, regardless of height.
11	100 = Total Cover	
	,	B/A = 3.0
	20% of total cover:	
Woody Vine Stratum (Plot size:)		
1		
2		
3 4		
5		
	= Total Cover	Hydrophytic Vegetation
50% of total cover:	20% of total cover:	Present? Yes <u>No</u>
Remarks: (Include photo numbers here or on a separate		1

Profile Desc	ription: (Describe	to the dept	h needed to docun	nent the indica	ator or con	firm the ab	sence of indicators.)
Depth	Matrix			x Features		-	
(inches)	Color (moist)	%	Color (moist)	<u>%</u> Typ	be ¹ Loc ²		
0-6	10YR 4/6	100		<u> </u>		sand	
6-12	10YR 3/3	100				Sanc	ly
·							
			,	· · ·			
				<u> </u>			
			,	· · ·			
				<u> </u>			
		_					
¹ Type: C=C	oncentration, D=Dep	oletion, RM=	Reduced Matrix, MS	S=Masked San	d Grains.	² Locat	ion: PL=Pore Lining, M=Matrix.
Hydric Soil		,	,				Indicators for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	e (S7)			2 cm Muck (A10) (MLRA 147)
Histic Ep	pipedon (A2)		Polyvalue Be	low Surface (S	8) (MLRA 1	147, 148)	Coast Prairie Redox (A16)
Black Hi	stic (A3)		Thin Dark Su	rface (S9) (ML	RA 147, 14	8)	(MLRA 147, 148)
Hydroge	en Sulfide (A4)		Loamy Gleye	ed Matrix (F2)			Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma	()			(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark \$. ,			Very Shallow Dark Surface (TF12)
·	d Below Dark Surfac	e (A11)		rk Surface (F7)			Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre	. ,			
-	1ucky Mineral (S1) (LRR N,	-	ese Masses (F [.]	12) (LRR N	,	
	A 147, 148) Gleyed Matrix (S4)		MLRA 13	o) ice (F13) (MLR	A 426 422	Ň	³ Indicators of hydrophytic vegetation and
	Redox (S5)			odplain Soils (F	• •	•	wetland hydrology must be present,
	Matrix (S6)			/laterial (F21) (I	, .	•	unless disturbed or problematic.
	Layer (if observed)				1EIXA 127,	147)	
Type:		-					
	choc):					تعاميرا	ic Soil Present? Yes No
	ches):					пуаг	ic Soil Present? Yes No
Remarks:							

Project/Site: North Etowah Industrial Park	City/County:	McMinn	Sampling Date: 6/1/22							
Applicant/Owner:		State: <u>T</u>	Sampling Point: DP3							
Investigator(s): Jason Mann, Clayton Biden, Cierra HomicSection, Township, Range:										
Landform (hillslope, terrace, etc.): Hillside Lo	ocal relief (cond	cave, convex, none): <u>None</u>	Slope (%):							
Subregion (LRR or MLRA): <u>N 126</u> Lat: <u>35,3740</u> °		Long: <u>-84.5258</u> °	Datum:							
Soil Map Unit Name: TaC - Tasso Loam		NWI cl	assification: <u>NA</u>							
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes X	No (If no, explai	n in Remarks.)							
Are Vegetation, Soil, or Hydrology significantly	y disturbed?	Are "Normal Circumstan	ices" present? Yes X No							
Are Vegetation, Soil, or Hydrology naturally pro	oblematic?	(If needed, explain any a	answers in Remarks.)							

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> Yes <u>X</u> Yes <u>X</u>	No No No	Is the Sampled Area within a Wetland?	Yes X	No
Remarks:					

Wetland Hydrology Indicato	rs:			Sec	ondary Indicators (minimum of two required)
Primary Indicators (minimum of	of one is required; chec	k all that apply)			Surface Soil Cracks (B6)
Surface Water (A1)		True Aquatic Plants (B14)		X	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)		Hydrogen Sulfide Odor (C1)		x	Drainage Patterns (B10)
X Saturation (A3)		Oxidized Rhizospheres on Living	Roots (C3)		Moss Trim Lines (B16)
Water Marks (B1)		Presence of Reduced Iron (C4)			Dry-Season Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction in Tilled So	oils (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)				X	Geomorphic Position (D2)
Inundation Visible on Aeri	al Imagery (B7)				Shallow Aquitard (D3)
Water-Stained Leaves (B	9)			X	Microtopographic Relief (D4)
Aquatic Fauna (B13)					FAC-Neutral Test (D5)
Field Observations:					
Surface Water Present?	Yes No _X	Depth (inches):			
Water Table Present?	Yes No X	_ Depth (inches):			
Saturation Present?	Yes X No	_ Depth (inches): <u>3</u>	Wetland I	Hydr	ology Present? Yes X No
(includes capillary fringe) Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
(includes capillary fringe) Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
(Includes capillary tringe) Describe Recorded Data (stre Remarks:	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailabl	9:

Sampling Point: DP3

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

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover</u>			
1,				Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3	· ·			Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
6				
	=			Prevalence Index worksheet:
				Total % Cover of: Multiply by:
50% of total cover:	20% of t	otal cover:		OBL species <u>80</u> x 1 = <u>80</u>
Sapling Stratum (Plot size:)				FACW species x 2 =40
1				
2				FAC species x 3 =
				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: <u>100</u> (A) <u>120</u> (B)
5				
6				Prevalence Index = B/A = <u>1.20</u>
	==		er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of t	otal cover:	<u> </u>	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:)				2 - Dominance Test is >50%
1				\underline{X} 3 - Prevalence Index is $\leq 3.0^1$
2				4 - Morphological Adaptations ¹ (Provide supporting
				data in Remarks or on a separate sheet)
3				Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				¹ Indicators of hydric soil and wetland hydrology must
6				be present, unless disturbed or problematic.
	100 =	Total Cov	er	
				Definitions of Five Vegetation Strata:
50% of total cover:	20% of t	otal cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size:)				approximately 20 ft (6 m) or more in height and 3 in.
1. Juncus effusus	20	N	FACW	(7.6 cm) or larger in diameter at breast height (DBH).
2. Carex lurida	30	Υ	OBL	Sapling – Woody plants, excluding woody vines,
3. Alisma triviale	30	Y	OBL	approximately 20 ft (6 m) or more in height and less
NA sub-large la la classica de	20		OBL	than 3 in. (7.6 cm) DBH.
4. Murdannia Keisak		N	UDL	
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
				herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10	· ·			Woody vine – All woody vines, regardless of height.
11	<u> </u>			Woody vine – All woody vines, regardless of height.
	=		er	
50% of total cover: X	20% of t	otal cover:		B/A = 1.20
Woody Vine Stratum (Plot size:)				
1	<u> </u>			
2				
3				
4				
5				Hydrophytic
	=	Total Cov	er	Vegetation
50% of total cover:	20% of t	otal cover		Present? Yes X No
Remarks: (Include photo numbers here or on a separate s	sneet.)			

SOIL

Profile Desc	cription: (Describe	to the dep	th needed to docur	nent the	indicator	or confirm	the absence of indi	cators.)	
Depth	Matrix			x Feature	S				
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
0-10	10YR 5/1	70	5YR 5/6	30	D	PL	Clay		
		·							
		·							
				_					
·		·					·		
17 0 0							2		
Hydric Soil	oncentration, D=Dep	letion, RM=	Reduced Matrix, Ma	S=Masked	d Sand Gra	ains.	² Location: PL=Pore	Lining, M=Matrix. or Problematic Hydric Soil	le ³ .
-			Deals Oracle	(07)				-	15.
Histosol	()		Dark Surface		(CO) (N			ck (A10) (MLRA 147)	
	pipedon (A2) istic (A3)		Polyvalue Be					airie Redox (A16) A 147, 148)	
	en Sulfide (A4)		Loamy Gleye	•	, .	47, 140)	•	t Floodplain Soils (F19)	
	d Layers (A5)		X Depleted Ma		(12)			A 136, 147)	
	uck (A10) (LRR N)		Redox Dark		-6)		•	allow Dark Surface (TF12)	
	d Below Dark Surface	e (A11)	Depleted Da	•	,			xplain in Remarks)	
-	ark Surface (A12)	()	Redox Depre					1 ,	
	/ Jucky Mineral (S1) (L	.RR N,	Iron-Mangan	•	,	LRR N,			
MLR	A 147, 148)		MLRA 13	6)					
Sandy C	Gleyed Matrix (S4)		Umbric Surfa	ice (F13)	(MLRA 13	6, 122)	³ Indicators	of hydrophytic vegetation a	nd
Sandy F	Redox (S5)		Piedmont Flo	odplain S	oils (F19)	(MLRA 14	8) wetland h	ydrology must be present,	
Stripped	d Matrix (S6)		Red Parent I	Material (F	21) (MLR	A 127, 147	') unless dis	turbed or problematic.	
Restrictive	Layer (if observed):								
Туре:									
Depth (in	ches):						Hydric Soil Preser	nt? Yes X No	
Remarks:							1		

Project/Site: North Etowah Industrial Park	_ City/County: McMinn	Sampling Date:
Applicant/Owner:	State: _T	N Sampling Point: DP4
Investigator(s): Jason Mann, Clayton Biden, Cierra Hom	ic Section, Township, Range:	
Landform (hillslope, terrace, etc.): Hillside		e Slope (%):
Subregion (LRR or MLRA): N 126 Lat: 35.3740		Datum:
Soil Map Unit Name: <u>TaC - Tasso Loam</u>	NWI cl	lassification: NA
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes X No (If no, expla	in in Remarks.)
Are Vegetation, Soil, or Hydrology significan	tly disturbed? Are "Normal Circumstar	nces" present? Yes <u>×</u> No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, explain any a	answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No <u>X</u> No <u>X</u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

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 Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3) Oxidized Rhizospheres on Living	Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled So	oils (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 X Depth (inches):	
Water Table Present? Yes No Depth (inches):	
	Wetland Hydrology Present? Yes No
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No

Sampling Point: DP4

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

, ,	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover</u> <u>Species?</u> <u>Status</u>	Number of Dominant Species
1		That Are OBL, FACW, or FAC: (A)
2		Total Number of Deminent
3		Total Number of Dominant Species Across All Strata: (B)
4		、 ,
5		Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6		
	= Total Cover	Prevalence Index worksheet:
		Total % Cover of: Multiply by:
	20% of total cover:	OBL species x 1 =
Sapling Stratum (Plot size:)		FACW species x 2 =
1		FAC species <u>100</u> x 3 = <u>300</u>
2		FACU species x 4 =
3		UPL species x 5 =
4		Column Totals: (A) (B)
5		
6		Prevalence Index = B/A = <u>3.0</u>
	= Total Cover	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of total cover:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:)		2 - Dominance Test is >50%
1		\underline{X} 3 - Prevalence Index is $\leq 3.0^1$
2		4 - Morphological Adaptations ¹ (Provide supporting
3		data in Remarks or on a separate sheet)
4		Problematic Hydrophytic Vegetation ¹ (Explain)
5		
6		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	= Total Cover	Definitions of Five Vegetation Strata:
50% of total covor:	20% of total cover:	Deminions of Five vegetation Strata.
		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size:) 1. Festuca spp.	100 Y FAC	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
2		Sapling – Woody plants, excluding woody vines,
3		approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4		
5 6		Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
7		Herb – All herbaceous (non-woody) plants, including
8		herbaceous vines, regardless of size, and woody
9		plants, except woody vines, less than approximately 3 ft (1 m) in height.
10		
11		Woody vine – All woody vines, regardless of height.
	100 = Total Cover	
EQ9/ of total cover	· · · · · · · · · · · · · · · · · · ·	
	20% of total cover:	B/A = 3.0
Woody Vine Stratum (Plot size:)		
1		
2		
3		
4		
5		Hydrophytic
	= Total Cover	Vegetation
50% of total cover:	20% of total cover:	Present? Yes <u>No X</u>
Remarks: (Include photo numbers here or on a separate		1

nantn	NA-toile							of indicators.)
epth nches)	<u>Matrix</u> Color (moist)	%	Color (moist)	x Features % ٦	Tvne ¹	Loc ²	Texture	Remarks
-10	10YR 5/6	100					Loamy	
		<u> </u>		<u> </u>				
		- <u> </u>						
vpe: C=C	oncentration, D=Dep	letion RM=	Reduced Matrix M	S=Masked Sa	and Gra	ains	² l ocation: Pl	 _=Pore Lining, M=Matrix.
	ndicators:						Indica	tors for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	e (S7)				cm Muck (A10) (MLRA 147)
	vipedon (A2)			elow Surface	(S8) (N	LRA 147.		oast Prairie Redox (A16)
Black Hi	,			urface (S9) (N				(MLRA 147, 148)
	n Sulfide (A4)			ed Matrix (F2)		,,	Pi	edmont Floodplain Soils (F19)
	Layers (A5)		Depleted Ma	• •	/			(MLRA 136, 147)
	ck (A10) (LRR N)			Surface (F6)			Ve	ery Shallow Dark Surface (TF12)
	Below Dark Surfac	e (A11)		rk Surface (F	7)			ther (Explain in Remarks)
	ark Surface (A12)	- (/	Redox Depr		.,			
	lucky Mineral (S1) (I	RR N		iese Masses	(F12) (RR N		
-	147, 148)		MLRA 13		() (
	ileyed Matrix (S4)		Umbric Surfa	•	RA 13	6 122)	³ Indi	cators of hydrophytic vegetation and
	edox (S5)			podplain Soils				tland hydrology must be present,
	Matrix (S6)			Material (F21)				ess disturbed or problematic.
	_ayer (if observed):	:			/ (,	.,	
Туре:								
Depth (ind	ches):						Hydric Soil	Present? Yes No X
emarks:								

Project/Site: North Etowah Industrial Park	City/County:	McMinn	Sampling Date: 6/9/22
Applicant/Owner:		State: TN	Sampling Point: DP5
Investigator(s): Jason Mann, Clayton Biden, Cierra He	omic Section, Tow	nship, Range:	
Landform (hillslope, terrace, etc.): <u>Hillside</u>	Local relief (cond		Slope (%):
Subregion (LRR or MLRA): <u>N 126</u> Lat: <u>35.37</u>	73°	Long: <u>-84.5391</u> °	Datum:
Soil Map Unit Name: CnC2 - Coile silt Ioam		NWI clas	sification: NA
Are climatic / hydrologic conditions on the site typical for this time	e of year? Yes X	No (If no, explain i	n Remarks.)
Are Vegetation, Soil, or Hydrology signifi	cantly disturbed?	Are "Normal Circumstance	s" present? Yes X No
Are Vegetation, Soil, or Hydrology natura	ally problematic?	(If needed, explain any ans	swers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> Yes <u>X</u> Yes <u>X</u>	No No No	Is the Sampled Area within a Wetland?	Yes X	No
Remarks:					

Wetland Hydrology Indicato	rs:			<u>Seco</u>	ndary Indicators (minimum of two required)
Primary Indicators (minimum of	of one is required; check	k all that apply)		5	Surface Soil Cracks (B6)
Surface Water (A1)	X	True Aquatic Plants (B14)		<u>Х</u> 5	parsely Vegetated Concave Surface (B8)
X High Water Table (A2)		Hydrogen Sulfide Odor (C1)		<u>х</u> с	Prainage Patterns (B10)
X Saturation (A3) Oxidized Rhizospheres on Living Roots (C3)					loss Trim Lines (B16)
Water Marks (B1)		Presence of Reduced Iron (C4)		C	Pry-Season Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction in Tilled So	oils (C6)		Crayfish Burrows (C8)
Drift Deposits (B3)		Thin Muck Surface (C7)		5	aturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (Explain in Remarks)		s	tunted or Stressed Plants (D1)
Iron Deposits (B5)				<u> </u>	Geomorphic Position (D2)
Inundation Visible on Aeri	al Imagery (B7)			s	hallow Aquitard (D3)
Water-Stained Leaves (B	9)			<u>×</u> N	licrotopographic Relief (D4)
Aquatic Fauna (B13)				F	AC-Neutral Test (D5)
Field Observations:		2			
Surface Water Present?	Yes X No	_ Depth (inches):			
Water Table Present?		Depth (inches):			
	100				
Saturation Present?		Depth (inches): <u>3</u>	Wetland H	lydrol	ogy Present? Yes X No
Saturation Present? (includes capillary fringe)	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe)	Yes X No			-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe)	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	
Saturation Present? (includes capillary fringe) Describe Recorded Data (stree	Yes X No	_ Depth (inches): <u>3</u>		-	

Sampling Point:

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

, ,	Absoluto	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		
<u> </u>				Number of Dominant Species That Are OBL, FACW, or FAC: (A)
				(A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5		·	·	That Are OBL, FACW, or FAC: (A/B)
6				
		= Total Cov	rer	Prevalence Index worksheet:
50% of total cover:	20% of	total cover		Total % Cover of: Multiply by:
	2070 01		·	OBL species <u>40</u> x 1 = <u>40</u>
Sapling Stratum (Plot size:)				FACW species <u>25</u> x 2 = <u>50</u>
1				FAC species <u>15</u> x 3 = <u>45</u>
2				FACU species $x 4 =$
3			·	UPL species 20 x 5 = 100
4				Column Totals: <u>100</u> (A) <u>235</u> (B)
5				
6				Prevalence Index = $B/A = 2.35$
		= Total Cov		Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
50% of total cover:	20% of	total cover	<u> </u>	
Shrub Stratum (Plot size:)	5			2 - Dominance Test is >50%
1. Acer ruberum	<u> </u>	Υ	FAC	\times 3 - Prevalence Index is $\leq 3.0^1$
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5			·	¹ Indicators of hydric soil and wetland hydrology must
6			·	be present, unless disturbed or problematic.
	5	= Total Cov	er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover	<u> </u>	Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size:)				approximately 20 ft (6 m) or more in height and 3 in.
1. Leersia oryzoides	30	Y	OBL	(7.6 cm) or larger in diameter at breast height (DBH).
2. Solidage juncea	10	N	UPL	
3. Carduus nutans	5	N	UPL	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Corey luride	10		OBL	than 3 in. (7.6 cm) DBH.
4. Carex lunda 5 Juncus effusus	25	<u>N</u>	FACW	
ö	20			Shrub – Woody plants, excluding woody vines,
6. Agrostis gigantea	D		UPL	approximately 3 to 20 ft (1 to 6 m) in height.
7 Rumex crispus	10	N	FAC	Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				
11		·		Woody vine – All woody vines, regardless of height.
	95	= Total Cov		
50% of total cover: X	20% of	total cover	·	B/A = 2.35
Woody Vine Stratum (Plot size:)				
1				
2				
3				
4				
5				Hydrophytic
		= Total Cov	rer	Vegetation
50% of total cover:	20% of	total cover		Present? Yes <u>x</u> No
Remarks: (Include photo numbers here or on a separate s	sheet.)			1

Profile Desc	ription: (Describe	to the dept	th needed to docur	nent the i	ndicator	or confirm	the absence of i	indicators.)
Depth	Matrix			<u>x Feature</u>		2		
<u>(inches)</u>	Color (moist)	<u>%</u>	Color (moist)	%	<u>Type</u> ¹	Loc ²	Texture	Remarks
0-10	10YR 5/1	70	5YR 4/6	30	D	PL	Clay	
						·		
						·		
		·				·		
$\frac{1}{1}$ Type: C=C	oncentration, D=Dep	lotion PM-	Poducod Matrix M	S-Mackor		aine	² Location: PL -P	ore Lining, M=Matrix.
Hydric Soil						airi5.		s for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(\$7)				Muck (A10) (MLRA 147)
	bipedon (A2)		Polyvalue Be	· · ·	ce (S8) (N	II RA 147		st Prairie Redox (A16)
Black Hi			Thin Dark Su					LRA 147, 148)
	en Sulfide (A4)		Loamy Gleye	•		,,	•	mont Floodplain Soils (F19)
	d Layers (A5)		X Depleted Ma		,			LRA 136, 147)
	ick (A10) (LRR N)		Redox Dark	. ,	-6)		Very	Shallow Dark Surface (TF12)
Depleted	d Below Dark Surface	e (A11)	Depleted Da	rk Surface	e (F7)		Othe	r (Explain in Remarks)
Thick Da	ark Surface (A12)		Redox Depre	essions (F	8)			
Sandy M	lucky Mineral (S1) (L	.RR N,	Iron-Mangan	ese Mass	es (F12) (LRR N,		
MLRA	A 147, 148)		MLRA 13	6)				
	Bleyed Matrix (S4)		Umbric Surfa	. ,	•			ors of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo	•	, ,	•	•	d hydrology must be present,
	Matrix (S6)		Red Parent N	/laterial (F	21) (MLR	A 127, 147	7) unless	disturbed or problematic.
Restrictive I	Layer (if observed):							
Туре:								
Depth (in	ches):						Hydric Soil Pre	esent? Yes X No
Remarks:							1	
I								

Project/Site: North Etowah Industrial Park	City/County: McMinn	Samplin	g Date:
Applicant/Owner:		State: Samp	ling Point: DP6
Investigator(s): Jason Mann, Clayton Biden, Cie	rra Homic Section, Township, Range:		
Landform (hillslope, terrace, etc.): Hillside	Local relief (concave, convex, no	ne): None	Slope (%):
Subregion (LRR or MLRA): N 126 Lat:	35.3772° Long: _ ⁻⁸	4.5392°	_ Datum:
Soil Map Unit Name: CnC2 - Colie silt Ioam		NWI classification: N	A
Are climatic / hydrologic conditions on the site typical for the	his time of year? Yes X No	(If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology	_significantly disturbed? Are "Norma	I Circumstances" present?	Yes X No
Are Vegetation, Soil, or Hydrology	_naturally problematic? (If needed,	explain any answers in Rem	arks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No <u>X</u> No <u>X</u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

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 Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3) Oxidized Rhizospheres on Living F	Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled So	ils (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):	
Water Table Present? Yes <u>No X</u> Depth (inches):	
	Wetland Hydrology Present? Yes No
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Saturation Present? Yes No _X _ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No
Saturation Present? Yes No _X _ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No
Saturation Present? Yes No _X _ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No
Saturation Present? Yes No _X _ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No
Saturation Present? Yes No _X _ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No
Saturation Present? Yes No _X _ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No
Saturation Present? Yes No _X _ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No
Saturation Present? Yes No _X _ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No
Saturation Present? Yes No _X _ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No
Saturation Present? Yes No _X _ Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No

DP6

VEGETATION (Five Strata) - Use scientific names of plants

		Dominant In	dicator	Dominance Test worksheet:
	% Cover			
<u>Tree Stratum</u> (Plot size:) 1		Species? S		Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6				
		= Total Cover		Prevalence Index worksheet:
50% of total cover:	20% of	total cover:		Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)				OBL species x 1 =
1/				FACW species x 2 =
2				FAC species $100 \times 3 = 300$
3				FACU species x 4 =
4				UPL species x 5 = (D)
5				Column Totals: (A) (B)
6				Prevalence Index = B/A = <u>3.0</u>
		= Total Cover		Hydrophytic Vegetation Indicators:
50% of total cover:				1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:)	20 % 01			2 - Dominance Test is >50%
1				\overline{X} 3 - Prevalence Index is $\leq 3.0^1$
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cover		Definitions of Five Vegetation Strata:
50% of total cover:				-
Herb Stratum (Plot size:)	20 /0 01			Tree – Woody plants, excluding woody vines,
1. Festuca spp.	100	Y	FAC	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
		·		
2 3				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
۵ ۵		·		than 3 in. (7.6 cm) DBH.
5		·		Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
8				herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3 ft (1 m) in height.
10				
11				Woody vine – All woody vines, regardless of height.
		= Total Cover		
50% of total cover:X	20% of	total cover:		B/A 2.0
Woody Vine Stratum (Plot size:)	20 % 01			B/A = 3.0
1				
2				
3				
4				
5		·		
~ <u></u>		= Total Cover		Hydrophytic Vegetation
50% of total cover:				Present? Yes No \times
Remarks: (Include photo numbers here or on a separate				

Profile Desc	ription: (Describe t	to the dept	h needed to docur	nent the in	ndicator o	or confirm	the absence o	f indicators.)	
Depth	Matrix		Redo	x Features					
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture	Rem	arks
0-10	7.5YR 4/6	100					Loamy		
·									
·		<u> </u>							,
¹ Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	Sand Gra	ains.	² Location: PL=	Pore Lining, M=N	latrix.
Hydric Soil I	ndicators:						Indicate	ors for Problema	tic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	(S7)			2 ci	m Muck (A10) (ML	.RA 147)
Histic Ep	vipedon (A2)		Polyvalue Be	low Surfac	e (S8) (M	LRA 147,	148) <u> </u> Coa	ast Prairie Redox ((A16)
Black His	stic (A3)		Thin Dark Su	rface (S9)	(MLRA 1	47, 148)	(MLRA 147, 148)	
Hydroge	n Sulfide (A4)		Loamy Gleye	ed Matrix (F	-2)		Pie	dmont Floodplain	Soils (F19)
	l Layers (A5)		Depleted Ma	trix (F3)				MLRA 136, 147)	
	ck (A10) (LRR N)		Redox Dark \$	•	,			ry Shallow Dark Sເ	
·	Below Dark Surface	e (A11)	Depleted Dar				Oth	ner (Explain in Rer	narks)
	ark Surface (A12)		Redox Depre	-					
-	lucky Mineral (S1) (L	.RR N,	Iron-Mangan		s (F12) (l	_RR N,			
	147, 148)		MLRA 13				2		
	leyed Matrix (S4)		Umbric Surfa					ators of hydrophyt	-
-	edox (S5)		Piedmont Flo					and hydrology mus	
	Matrix (S6)		Red Parent N	Aaterial (F2	21) (MLR/	A 127, 147) unles	ss disturbed or pro	blematic.
Restrictive L	ayer (if observed):								
Туре:									
Depth (inc	ches):						Hydric Soil P	resent? Yes	No <u>×</u>
Remarks:							1		

Project/Site: North Etowah Industrial Park	City/County:	McMinn	Sampli	ing Date: <u>6/9/22</u>
Applicant/Owner:		State	<u>: TN</u> Sam	pling Point: DP7
Investigator(s): Jason Mann, Clayton Biden, Cierra Homic	^C Section, Tow	nship, Range:		
Landform (hillslope, terrace, etc.): Hillside Lo	ocal relief (cond	cave, convex, none): <u>No</u>	one	Slope (%):
Subregion (LRR or MLRA): <u>N 126</u> Lat: <u>35.3778°</u>		Long: -84.5383	3 °	Datum:
Soil Map Unit Name: Eo - Etowah Loam		N\	NI classification:	NA
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes X	No (If no, e	xplain in Remarks.	.)
Are Vegetation, Soil, or Hydrology significantly	y disturbed?	Are "Normal Circum	stances" present?	'Yes X No
Are Vegetation, Soil, or Hydrology naturally pr	roblematic?	(If needed, explain a	any answers in Re	marks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X Yes X Yes X	No No No	Is the Sampled Area within a Wetland?	Yes X	No
Remarks:					

Wetland Hydrology Indicator	rs:			Secondary Indicators (minimum of two required)
Primary Indicators (minimum c	of one is required; chec	xk all that apply)		Surface Soil Cracks (B6)
 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 Aerii Water-Stained Leaves (B5) Aquatic Fauna (B13) 	 al Imagery (B7)	 True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living I Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Sc Thin Muck Surface (C7) Other (Explain in Remarks) 	. ,	 X Sparsely Vegetated Concave Surface (B8) X Drainage Patterns (B10) Moss Trim Lines (B16) Dry-Season Water Table (C2) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1) X Geomorphic Position (D2) Shallow Aquitard (D3) X Microtopographic Relief (D4) FAC-Neutral Test (D5)
Field Observations:		0		
Surface Water Present?	Yes X No	_ Depth (inches):		
Water Table Present?		_ Depth (inches):		
Saturation Present? (includes capillary fringe)	Yes X No	_ Depth (inches): <u>3</u>	Wetland H	Hydrology Present? Yes X No
Describe Recorded Data (strea	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailable:
Remarks:				

VEGETATION (Five Strata) - Use scientific names of plants

/EGETATION (Five Strata) – Use scientific n	ames of _l	plants.		DP7 Sampling Point:
	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:) 1)	% Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2 3				Total Number of Dominant Species Across All Strata: (B)
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6		= Total Cov		Prevalence Index worksheet:
50% of total cover:	20% of	total cover		Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)			- <u></u>	OBL species <u>70</u> x 1 = <u>70</u>
1,				FACW species 15 x 2 = 30
2				FAC species <u>5</u> x 3 = <u>15</u>
				FACU species x 4 =
3				UPL species X 5 =
4				Column Totals: <u>100</u> (A) <u>165</u> (B)
5				D
6				Prevalence Index = B/A = <u>1.65</u>
				Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover	:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:) 1)				2 - Dominance Test is >50% X 3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
34				Problematic Hydrophytic Vegetation ¹ (Explain)
56				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cov	/er	Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover	.	Deminitions of the vegetation Strata.
Herb Stratum (Plot size:)	60	Y	OBL	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).
	10	N	UPL	
2. <u>Solidage juncea</u> 2. Carex lurida	10	<u>N</u>	OBL	Sapling – Woody plants, excluding woody vines,
3	15	N	FACW	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4. Juncus effusus 5. Rumex crispus	5	N	FAC	Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
8		·		plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10		·		Woody vine – All woody vines, regardless of height.
11	100	- Tatal Ca	<u> </u>	
50% of total cover: X		= Total Cov		
Woody Vine Stratum (Plot size:)	2070 01			B/A = 1.65
1				
2				
3				
4				
5				Hydrophytic
50% of total cover:		= Total Cov total cover		Vegetation Present? Yes <u>x</u> No

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

Profile Desc	ription: (Describe	to the dep	th needed to docun	nent the i	ndicator	or confirm	n the absence of in	dicators.)
Depth	Matrix		Redo	x Feature	S			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10	10YR 2/1	90	5YR 3/4	10	D	PL	Clay	
						·		
·								
·								
. <u> </u>								
·								
	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Maskec	Sand Gra	ains.		re Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators	for Problematic Hydric Soils ³ :
Histosol	(A1)		Dark Surface	. ,				luck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be					Prairie Redox (A16)
	stic (A3)		Thin Dark Su			47, 148)	•	RA 147, 148)
	en Sulfide (A4)		Loamy Gleye		F2)			ont Floodplain Soils (F19)
	d Layers (A5)		X Depleted Mat	. ,			•	RA 136, 147)
	ick (A10) (LRR N)	()	Redox Dark S	•	,			hallow Dark Surface (TF12)
·	d Below Dark Surface	e (A11)	Depleted Dar		· · ·		Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre		,			
	/lucky Mineral (S1) (L \ 147, 148)	.KK N,	Iron-Mangan MLRA 13		es (F12) (LKK N,		
	Gleyed Matrix (S4)		Umbric Surfa	,	MI PA 13	6 122)	³ Indicator	s of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo		•			hydrology must be present,
	Matrix (S6)		Red Parent N	•	. ,	•	•	listurbed or problematic.
	Layer (if observed):					~ 121, 141		
Type:								
· · ·								
	ches):						Hydric Soil Pres	ent? Yes <u>×</u> No
Remarks:								

Project/Site: North Etowah Industrial Park	City/County: McMinn	S	ampling Date:
Applicant/Owner:		State: TN	Sampling Point: DP8
Investigator(s): Jason Mann, Clayton Biden, Cierra Hom			
Landform (hillslope, terrace, etc.): Hillside	Local relief (concave, convex, nor	_{ne):} None	Slope (%):
Subregion (LRR or MLRA): N 126 Lat: 35.3776	^e Long: -84	.5380°	Datum:
Soil Map Unit Name: WaC2—Waynesboro clay loam		NWI classificati	on: NA
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes X No (If no, explain in Ren	narks.)
Are Vegetation, Soil, or Hydrology significan	tly disturbed? Are "Normal	Circumstances" pre	sent? Yes X No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, e	xplain any answers	in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No <u>X</u> No <u>X</u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

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 Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3) Oxidized Rhizospheres on Living	Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled Sc	oils (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 X Depth (inches):	
Water Table Present? Yes No X Depth (inches):	
Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches):	Wetland Hydrology Present? Yes No
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No X Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No
Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No

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

	Absolute Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:) 1	<u>% Cover Species?</u> Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2 3		Total Number of Dominant Species Across All Strata:(B)
4		Percent of Dominant Species
5 6		That Are OBL, FACW, or FAC: (A/B)
	= Total Cover	Prevalence Index worksheet:
50% of total cover:	20% of total cover:	Total % Cover of: Multiply by:
Sapling Stratum (Plot size:)		OBL species x 1 =
1		FACW species x 2 = FAC species 100 x 3 = 300
2		FAC species x 3 FACU species x 4 =
3		UPL species x 4
4		Column Totals: (A) (B)
5		
6		
	= Total Cover	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of total cover:	
Shrub Stratum (Plot size:)		2 - Dominance Test is >50%
1		X 3 - Prevalence Index is ≤3.0 ¹
2		4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3		Problematic Hydrophytic Vegetation ¹ (Explain)
4		
5		¹ Indicators of hydric soil and wetland hydrology must
6		be present, unless disturbed or problematic.
	= Total Cover	Definitions of Five Vegetation Strata:
	20% of total cover:	i ree – woody plants, excluding woody vines,
	100 Y FAC	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
2 3		Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
٨		than 3 in. (7.6 cm) DBH.
5 6		Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
7		Herb – All herbaceous (non-woody) plants, including
8		herbaceous vines, regardless of size, and woody
9		plants, except woody vines, less than approximately 3 ft (1 m) in height.
10		
10 11		Woody vine – All woody vines, regardless of height.
11	= Total Cover	Woody vine – All woody vines, regardless of height.
11		Woody vine – All woody vines, regardless of height.
11	= Total Cover	Woody vine – All woody vines, regardless of height.
11 50% of total cover:	= Total Cover 20% of total cover:	Woody vine – All woody vines, regardless of height. B/A = 3.0
11	= Total Cover 20% of total cover:	Woody vine – All woody vines, regardless of height. B/A = 3.0
11	= Total Cover 20% of total cover:	Woody vine – All woody vines, regardless of height. B/A = 3.0
11	= Total Cover 20% of total cover:	Woody vine – All woody vines, regardless of height. B/A = 3.0
11	= Total Cover 20% of total cover:	Woody vine – All woody vines, regardless of height. B/A = 3.0 Hydrophytic
11	= Total Cover 20% of total cover: = Total Cover	Woody vine – All woody vines, regardless of height. B/A = 3.0 Hydrophytic Vegetation Brosent?
11	= Total Cover 20% of total cover:	Woody vine – All woody vines, regardless of height. B/A = 3.0 Hydrophytic Vegetation Brosent?

Profile Desc	ription: (Describe t	o the dep	th needed to docur	ment the in	ndicator	or confirn	n the absence	of indicator	's.)	
Depth	Matrix			x Features	4	. 2				
(inches)	Color (moist) 10YR 5/6	<u>%</u>	Color (moist)	%	Type'	Loc ²	Texture		Remarks	
0-10	101K 5/0	100					Loamy			
1 <u>т о о</u>							2	B 1		
Hydric Soil I	oncentration, D=Depl	etion, RM=	Reduced Matrix, M	S=Masked	Sand Gra	ains.	² Location: PL			vdric Soils ³ :
5			Daril Curfe e	(07)						
<u> </u>	. ,		Dark Surface Polyvalue Be						10) (MLRA [•] Doday (A16	•
Black Hi	oipedon (A2)		Thin Dark Su					(MLRA 147	Redox (A16)
	n Sulfide (A4)		Loamy Gleye	. ,	•	47, 140)		•	, 140) odplain Soils	(E10)
	Layers (A5)		Depleted Ma		2)			(MLRA 136		(113)
	ick (A10) (LRR N)		Redox Dark	· · ·	6)			•	Dark Surfac	e (TF12)
	Below Dark Surface	e (A11)	Depleted Dat		,			•	in Remarks	· · ·
	ark Surface (A12)	()	Redox Depre							,
	lucky Mineral (S1) (L	RR N,	Iron-Mangan			LRR N,				
MLRA	A 147, 148)		MLRA 13	6)	. , .					
Sandy G	leyed Matrix (S4)		Umbric Surfa	ace (F13) (I	MLRA 13	6, 122)	³ Indi	cators of hy	drophytic ve	getation and
Sandy R	edox (S5)		Piedmont Flo	odplain So	oils (F19)	(MLRA 14	18) wet	land hydrolo	ogy must be	present,
	Matrix (S6)		Red Parent M	Material (F2	21) (MLR	A 127, 147	7) unle	ess disturbe	d or problen	natic.
Restrictive L	_ayer (if observed):									
Туре:										
Depth (inc	ches):						Hydric Soil	Present?	Yes	No <u>×</u>
Remarks:							1			

Project/Site: North Etowah Industrial Park	City/County: MCN	/linn	Sampli	ng Date: <u>6/9/22</u>
Applicant/Owner:		State:	TN Sam	pling Point: DP9
Investigator(s): Jason Mann, Clayton Biden, Cierra Homie	^C Section, Township,	Range:		
Landform (hillslope, terrace, etc.): Hillside Lo				Slope (%):
Subregion (LRR or MLRA): <u>N 126</u> Lat: <u>35.3709°</u>	[Long: -84.5236°		Datum:
Soil Map Unit Name: FgF2—Fullerton gravelly silt Ioan	n	NW	classification:	NA
Are climatic / hydrologic conditions on the site typical for this time of y	ear? Yes X N	lo (If no, exp	olain in Remarks.)
Are Vegetation, Soil, or Hydrology significantly	y disturbed? A	Are "Normal Circums	tances" present?	Yes X No
Are Vegetation, Soil, or Hydrology naturally pr	roblematic? (l'	lf needed, explain an	y answers in Re	marks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> Yes <u>X</u> Yes <u>X</u>	No No No	Is the Sampled Area within a Wetland?	Yes X	No
Remarks:					

Wetland Hydrology Indicato	rs:			Secondary Indicators (minimum of two required)
Primary Indicators (minimum	of one is required; chec	k all that apply)		Surface Soil Cracks (B6)
Surface Water (A1)	X	True Aquatic Plants (B14)		X Sparsely Vegetated Concave Surface (B8)
X High Water Table (A2)		Hydrogen Sulfide Odor (C1)		X Drainage Patterns (B10)
X Saturation (A3)		Oxidized Rhizospheres on Living	Roots (C3)	Moss Trim Lines (B16)
Water Marks (B1)		Presence of Reduced Iron (C4)		Dry-Season Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction in Tilled Se	oils (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)				X Geomorphic Position (D2)
Inundation Visible on Aer	al Imagery (B7)			Shallow Aquitard (D3)
Water-Stained Leaves (B	9)			X Microtopographic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present?	Yes X No	_ Depth (inches):		
Water Table Present?	Yes No X			
Saturation Present?		Depth (inches): <u>3</u>	Wetland	Hydrology Present? Yes X No
(includes capillary fringe)				
Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if av	ailable:
Remarks:				

Sampling Point: DP9

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

	Abaaluta	Dominant	Indiaator	Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		
				Number of Dominant Species That Are OBL, FACW, or FAC: (A)
1				That Are OBL, FACW, or FAC: (A)
2		·		Total Number of Dominant
3				Species Across All Strata: (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
		= Total Cov	er	Total % Cover of: Multiply by:
50% of total cover:	20% of	total cover:		$\begin{array}{c} \hline \hline \\ $
Sapling Stratum (Plot size:)				OBL species $\frac{10}{10}$ $x = \frac{10}{20}$
1,				FACW species 15 x 2 = 30
				FAC species <u>10</u> x 3 = <u>30</u>
2				FACU species x 4 =
3		·		UPL species x 5 =
4				Column Totals: <u>100</u> (A) <u>135</u> (B)
5				
6				Prevalence Index = B/A = <u>1.35</u>
V				
		= Total Cov		Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:)				2 - Dominance Test is >50%
1				X 3 - Prevalence Index is $≤3.0^1$
				4 - Morphological Adaptations ¹ (Provide supporting
2				data in Remarks or on a separate sheet)
3		·		Problematic Hydrophytic Vegetation ¹ (Explain)
4				
5				1
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cov		Definitions of Five Vegetation Strata:
50% of total cover:	20% of	total cover:		Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size:)				approximately 20 ft (6 m) or more in height and 3 in.
1 Leersia oryzoides	60	Y	OBL	(7.6 cm) or larger in diameter at breast height (DBH).
2. Carex lurida	15	Ν	OBL	
Juncus effusus	15	N	FACW	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
A Rumex crispus	10	N		than 3 in. (7.6 cm) DBH.
4. Kullex clispus	10		FAC	
5				Shrub – Woody plants, excluding woody vines,
6				approximately 3 to 20 ft (1 to 6 m) in height.
7				Herb – All herbaceous (non-woody) plants, including
				herbaceous vines, regardless of size, and woody
8				plants, except woody vines, less than approximately 3
9				ft (1 m) in height.
10				Manada and Allowed and a second second second second
11				Woody vine – All woody vines, regardless of height.
	100	= Total Cov	er	
V. V.				
50% of total cover: X	20% of	total cover:		B/A = 1.35
Woody Vine Stratum (Plot size:)				
1				
2				
3				
4				
5		·		Hydrophytic
		= Total Cov	er	Vegetation
50% of total cover:	2004 -	total cover		Present? Yes <u>x</u> No
Remarks: (Include photo numbers here or on a separate s	sneet.)			

Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10	10YR 2/1	90	10YR 5/5	10	D	PL	Clay	_
				. <u></u>				
							2	
		letion, RM	=Reduced Matrix, M	S=Masked	Sand Gra	ains.		PL=Pore Lining, M=Matrix.
•	Indicators:							cators for Problematic Hydric Soils ³ :
_ Histosol	()		Dark Surface	· · /				2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		. , .		148)	Coast Prairie Redox (A16)
	stic (A3)		Thin Dark Sι	•	•	47, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		F2)		_	Piedmont Floodplain Soils (F19)
	l Layers (A5)		X Depleted Ma	. ,				(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark	``	,			Very Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (A11)	Depleted Da		. ,			Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre	•	,			
_ Sandy N	lucky Mineral (S1) (LRR N,	Iron-Mangan	ese Mass	es (F12) (I	LRR N,		
MLR	A 147, 148)		MLRA 13	6)				
Sandy G	Bleyed Matrix (S4)		Umbric Surfa	ice (F13)	MLRA 13	6, 122)	³ lr	ndicators of hydrophytic vegetation and
Sandy F	ledox (S5)		Piedmont Flor	odplain S	oils (F19)	(MLRA 14	• 8) v	vetland hydrology must be present,
Stripped	Matrix (S6)		Red Parent N	Material (F	21) (MLR	A 127, 147	') ι	unless disturbed or problematic.
estrictive	_ayer (if observed)							
Туре:								
Depth (in	ches):						Hydric Sc	oil Present? Yes X No
Remarks:								

Project/Site: North Etowah Industrial Park	City/County: McMinn	Samplir	ng Date:
Applicant/Owner:	S	tate: <u>TN</u> Samp	pling Point: DP10
Investigator(s): Jason Mann, Clayton Biden, Cierra Homid	Section, Township, Range:		
Landform (hillslope, terrace, etc.): Hillside	ocal relief (concave, convex, none):	None	Slope (%):
Subregion (LRR or MLRA): N 126 Lat: 35.3711°	Long: <u>-84.52</u>	:35°	Datum:
Soil Map Unit Name: FgF2—Fullerton gravelly silt loam		NWI classification: N	IA
Are climatic / hydrologic conditions on the site typical for this time of y	ear? Yes X No (If no	o, explain in Remarks.))
Are Vegetation, Soil, or Hydrology significantly	y disturbed? Are "Normal Cire	cumstances" present?	Yes X No
Are Vegetation, Soil, or Hydrology naturally p	oblematic? (If needed, expla	ain any answers in Ren	marks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No <u>X</u> No <u>X</u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

, , , , , , , , , , , , , , , , , , , ,	ors:			Secondary Indicators (minimum of two required)
Primary Indicators (minimum	of one is required; cheo	ck all that apply)		Surface Soil Cracks (B6)
Surface Water (A1)		Sparsely Vegetated Concave Surface (B8)		
High Water Table (A2)		_ Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)
Saturation (A3)		Oxidized Rhizospheres on Living I	Roots (C3)	Moss Trim Lines (B16)
Water Marks (B1)		Presence of Reduced Iron (C4)		Dry-Season Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction in Tilled Sc	oils (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 Aer	ial Imagery (B7)			Shallow Aquitard (D3)
Water-Stained Leaves (B	9)			Microtopographic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present?	Yes No X	_ Depth (inches):		
Water Table Present?		Depth (inches):		×
Saturation Present? (includes capillary fringe)	Yes No _X	_ Depth (inches):	Wetland H	lydrology Present? Yes No
	am dauge monitoring	well, aerial photos, previous inspec	tions), if ava	ilable:
Describe Recorded Data (stre	ann gaage, morntoring			
Describe Recorded Data (stre	sam gaage, monitoring	····, ····· ··· ··· ··· ··· ··· ··· ···	,	
		·····, -·····		
Describe Recorded Data (stre Remarks:		····, ·····	,	
		····, ····		
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		,,,,,		
		,,,,		

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

	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:) 1)	<u>% Cover Species? Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2		
3		Total Number of Dominant Species Across All Strata: (B)
4		
5		Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
6	= Total Cover	Prevalence Index worksheet:
		Total % Cover of: Multiply by:
	20% of total cover:	OBL species x 1 =
Sapling Stratum (Plot size:)		FACW species x 2 =
1		FAC species <u>100</u> x 3 = <u>300</u>
2		FACU species x 4 =
3		UPL species x 5 =
4		Column Totals: (A) (B)
5 6		Prevalence Index = B/A = <u>3.0</u>
	= Total Cover	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of total cover:	 1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:)		2 - Dominance Test is >50%
1,		X 3 - Prevalence Index is ≤3.0 ¹
2		4 - Morphological Adaptations ¹ (Provide supporting
3		data in Remarks or on a separate sheet)
4		Problematic Hydrophytic Vegetation ¹ (Explain)
5		1
6		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
	= Total Cover	Definitions of Five Vegetation Strata:
50% of total cover:	20% of total cover:	
Herb Stratum (Plot size:)		Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
1. Festuca spp.	100 Y FAC	(7.6 cm) or larger in diameter at breast height (DBH).
2		Sapling – Woody plants, excluding woody vines,
3		approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
5	- <u> </u>	Shrub – Woody plants, excluding woody vines,
6		approximately 3 to 20 ft (1 to 6 m) in height.
7		Herb – All herbaceous (non-woody) plants, including
8		herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9		ft (1 m) in height.
10	·	Woody vine – All woody vines, regardless of height.
11		
	<u>100</u> = Total Cover	
50% of total cover:X	20% of total cover:	B/A = 3.0
Woody Vine Stratum (Plot size:)		
1	·	
2		
3		
4		
5		Hydrophytic
	= Total Cover	Vegetation Present? Yes <u>No X</u>
50% of total cover:	20% of total cover:	
Remarks: (Include photo numbers here or on a separate	sheet.)	

Depth	Matrix		Dodo	x Features				
(inches)	Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remark	s
0-10	10YR 4/5	100				Loamy		
		100		·				
					<u> </u>			
						·		
					<u> </u>			
				<u> </u>				
	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	S=Masked Sand Gr	ains.	² Location: PL=Pore		
Hydric Soil	Indicators:					Indicators for	r Problematic	Hydric Soils ³ :
Histosol	(A1)		Dark Surface	· · ·			ck (A10) (MLR/	A 147)
Histic E	pipedon (A2)		Polyvalue Be	low Surface (S8) (I	/LRA 147,	, 148) Coast Pr	airie Redox (A1	6)
Black H	istic (A3)		Thin Dark Su	rface (S9) (MLRA	147, 148)	(MLR	A 147, 148)	
Hydroge	en Sulfide (A4)		Loamy Gleye	ed Matrix (F2)		Piedmor	t Floodplain So	ils (F19)
Stratifie	d Layers (A5)		Depleted Mat	trix (F3)		(MLR	A 136, 147)	
	uck (A10) (LRR N)		Redox Dark S	()			llow Dark Surfa	
	d Below Dark Surface	e (A11)		k Surface (F7)		Other (E	plain in Rema	'ks)
	ark Surface (A12)		Redox Depre	. ,				
	/lucky Mineral (S1) (L	.RR N,	-	ese Masses (F12)	LRR N,			
	A 147, 148)		MLRA 13	,				
	Gleyed Matrix (S4)			ce (F13) (MLRA 1 3			of hydrophytic v	-
	Redox (S5)			odplain Soils (F19)	•	•	drology must b	•
	d Matrix (S6)		Red Parent N	/laterial (F21) (MLF	A 127, 14	7) unless dis	urbed or proble	ematic.
Restrictive	Layer (if observed):							
Туре:								
Depth (in	ches):					Hydric Soil Prese	t? Yes	No <u>×</u>
Remarks:								

Project/Site: North Etowah Industrial Park	City/County:	McMinn	Sampl	ing Date: <u>6/9/22</u>
Applicant/Owner:		State	<u>: TN</u> Sam	pling Point: DP11
Investigator(s): Jason Mann, Clayton Biden, Cierra Homic	^C Section, Tow	nship, Range:		
Landform (hillslope, terrace, etc.): Hillside Lo	ocal relief (cond	cave, convex, none): <u>No</u>		Slope (%):
Subregion (LRR or MLRA): <u>N 126</u> Lat: <u>35.3710°</u>		Long: -84.5259)°	Datum:
Soil Map Unit Name: Eo—Etowah Ioam		N	NI classification:	NA
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes X	No (If no, e	xplain in Remarks	.)
Are Vegetation, Soil, or Hydrology significantly	y disturbed?	Are "Normal Circun	stances" present?	'Yes X No
Are Vegetation, Soil, or Hydrology naturally pr	roblematic?	(If needed, explain	any answers in Re	marks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X Yes X Yes X	 Is the Sampled Area within a Wetland?	Yes X	No
Remarks:				

Wetland Hydrology Indicato	rs:			Secondary Indicators (minimum of two required)
Primary Indicators (minimum of	of one is required; chec	k all that apply)		Surface Soil Cracks (B6)
Surface Water (A1)	X	True Aquatic Plants (B14)		X Sparsely Vegetated Concave Surface (B8)
X High Water Table (A2)		Hydrogen Sulfide Odor (C1)		X Drainage Patterns (B10)
X Saturation (A3)		Oxidized Rhizospheres on Living	Roots (C3)	Moss Trim Lines (B16)
Water Marks (B1)		Presence of Reduced Iron (C4)		Dry-Season Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction in Tilled Sc	oils (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)				X Geomorphic Position (D2)
Inundation Visible on Aeri	al Imagery (B7)			Shallow Aquitard (D3)
Water-Stained Leaves (B	9)			X Microtopographic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral Test (D5)
Field Observations:		2		
Surface Water Present?	Yes X No	_ Depth (inches):		
Water Table Present?	Yes No X			
Saturation Present?	Yes X No	_ Depth (inches): <u>3</u>	Wetland I	Hydrology Present? Yes X No
(includes conillon, frings)				
(includes capillary fringe)			4 · · · · · · · · · · · · · · · · · · ·	- 9 - 6 - 6
Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ailable:
	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring v	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ailable:
Describe Recorded Data (stre	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ailable:

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

	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size:)		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
		= Total Cov	/er	Total % Cover of: Multiply by:
50% of total cover:	20% of	total cover	: <u> </u>	$\begin{array}{c} \hline \hline$
Sapling Stratum (Plot size:)				FACW species 5 $x^2 = 10$
1				FAC species 10 x 3 = 30
2				FACU species x 0 = FACU species x 4 =
3	<u> </u>			UPL species x 5 =
4				Column Totals: 100 (A) 125 (B)
5				
6			. <u> </u>	Prevalence Index = B/A = 1.25
		= Total Cov	ver	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover	:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:)				2 - Dominance Test is >50%
1				\times 3 - Prevalence Index is ≤3.0 ¹
2				4 - Morphological Adaptations ¹ (Provide supporting
3				data in Remarks or on a separate sheet)
4				Problematic Hydrophytic Vegetation ¹ (Explain)
5				
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
		= Total Cov		
E0% of total cover:				Definitions of Five Vegetation Strata:
50% of total cover:	20 % 01			Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size:) 1. Leersia oryzoides	55	Υ	OBL	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
2 Carex Iurida	15	Ν	OBL	
Juncus effusus	5	Ν	FACW	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
A Rumex crispus	10	Ν	FAC	than 3 in. (7.6 cm) DBH.
5 Cyperus difformis	15	N	OBL	Shrub – Woody plants, excluding woody vines,
J			·	approximately 3 to 20 ft (1 to 6 m) in height.
6 7				Have All borbaccous (non woods) plants including
7 8			·	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
9				plants, except woody vines, less than approximately 3
0 10				ft (1 m) in height.
11			·	Woody vine – All woody vines, regardless of height.
	100	= Total Cov		
50% of total cover: X	20% of	total cover	. <u> </u>	B/A = 1.25
Woody Vine Stratum (Plot size:)				
1				
2				
3				
4				
5				Hydrophytic
		= Total Cov		Vegetation Present? Yes X No
50% of total cover:	20% of	total cover	:	Present? Yes <u>x</u> No
Remarks: (Include photo numbers here or on a separate	sheet.)			

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the	absence of indicators.)
Depth Matrix Redox Features	
	Texture Remarks
0-10 10YR 2/1 90 10YR 5/5 10 D PL 0	Clay
	·
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Lc	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
Histosol (A1) Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147, 148)) Coast Prairie Redox (A16)
Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148)	(MLRA 147, 148)
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)	Piedmont Floodplain Soils (F19)
Stratified Layers (A5) X Depleted Matrix (F3)	(MLRA 136, 147)
2 cm Muck (A10) (LRR N) Redox Dark Surface (F6)	Very Shallow Dark Surface (TF12)
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)	Other (Explain in Remarks)
Thick Dark Surface (A12) Redox Depressions (F8)	
Sandy Mucky Mineral (S1) (LRR N, Iron-Manganese Masses (F12) (LRR N,	
MLRA 147, 148) MLRA 136)	3
Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122)	³ Indicators of hydrophytic vegetation and
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148)	wetland hydrology must be present,
Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147)	unless disturbed or problematic.
Restrictive Layer (if observed):	
Туре:	
Depth (inches): Hy	ydric Soil Present? Yes X No
Remarks:	

Project/Site: North Etowah Industrial Park	City/County: McMinn	Sampling	6/9/22 g Date:
Applicant/Owner:		_ State: <u>TN</u> Samp	ling Point: DP12
Investigator(s): Jason Mann, Clayton Biden, Cierra Ho	mic Section, Township, Range:		
Landform (hillslope, terrace, etc.): Hillside	_ Local relief (concave, convex, nor	ne): None	Slope (%):
Subregion (LRR or MLRA): N 126 Lat: 35.371	1° Long: -84	.5257°	Datum:
Soil Map Unit Name: E0—Etowah Ioam		NWI classification: N	4
Are climatic / hydrologic conditions on the site typical for this time	of year? Yes X No 6	(If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology signific	antly disturbed? Are "Normal	Circumstances" present?	Yes X No
Are Vegetation, Soil, or Hydrology natural	iy problematic? (If needed, ε	explain any answers in Rem	arks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No <u>X</u> No <u>X</u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes	No
Remarks:					

Wetland Hydrology Indicato	rs:			Secondary Indicators (minimum of two required)
Primary Indicators (minimum	of one is required; chec	ck all that apply)		Surface Soil Cracks (B6)
Surface Water (A1)		True Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	_	Hydrogen Sulfide Odor (C1)		Drainage Patterns (B10)
Saturation (A3)		Oxidized Rhizospheres on Living	Roots (C3)	Moss Trim Lines (B16)
Water Marks (B1)		Presence of Reduced Iron (C4)		Dry-Season Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction in Tilled So	oils (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 Aeri	al Imagery (B7)			Shallow Aquitard (D3)
Water-Stained Leaves (B	9)			Microtopographic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral Test (D5)
Field Observations:				
Surface Water Present?	Yes No X	_ Depth (inches):		
Water Table Present?		_ Depth (inches):		X
Saturation Present? (includes capillary fringe)	Yes No	_ Depth (inches):	Wetland H	lydrology Present? Yes No
	am gauge, monitoring	well, aerial photos, previous inspec	tions), if ava	ilable:
Remarks:				

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

	Absolute Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover Species? Status</u>	Number of Dominant Species
1		That Are OBL, FACW, or FAC: (A)
2		Total Number of Dominant
3		Species Across All Strata: (B)
4		Percent of Dominant Species
5		That Are OBL, FACW, or FAC: (A/B)
6		Prevalence Index worksheet:
	= Total Cover	Total % Cover of: Multiply by:
50% of total cover:	20% of total cover:	OBL species x 1 =
Sapling Stratum (Plot size:)		FACW species
1		FAC species $100 \times 3 = 300$
2		FACU species x 0 = FACU species x 4 =
3		UPL species x 5 =
4		Column Totals:
5		
6		Prevalence Index = B/A = <u>3.0</u>
	= Total Cover	Hydrophytic Vegetation Indicators:
50% of total cover	20% of total cover:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:)		2 - Dominance Test is >50%
1		\underline{X} 3 - Prevalence Index is $\leq 3.0^1$
2		4 - Morphological Adaptations ¹ (Provide supporting
3		data in Remarks or on a separate sheet)
4		Problematic Hydrophytic Vegetation ¹ (Explain)
5		
6		¹ Indicators of hydric soil and wetland hydrology must
0	= Total Cover	be present, unless disturbed or problematic.
		Definitions of Five Vegetation Strata:
	20% of total cover:	Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size:) Festuca spp.	100 Y EAC	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
2		Sapling – Woody plants, excluding woody vines,
3		approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
4		
5		Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
6		
7		Herb – All herbaceous (non-woody) plants, including
8		herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3
9		ft (1 m) in height.
10		Woody vine – All woody vines, regardless of height.
11		
	<u>100</u> = Total Cover	
50% of total cover:X	20% of total cover:	B/A = 3.0
Woody Vine Stratum (Plot size:)		
1		
2		
3		
4		
5		
	= Total Cover	Hydrophytic Vegetation
		Present? Yes <u>No X</u>
50% of total cover:		
Remarks: (Include photo numbers here or on a separate s	neet.)	

Profile Desc	cription: (Describe	to the dept	th needed to docur	nent the ir	ndicator	or confirm	n the absence of i	indicators.)	
Depth	Matrix			<u>x Features</u>		. 2		_	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		Rem	arks
0-10	10YR 4/3	100					Loamy		
		·							
		·							
		·					<u> </u>		
		·							
		·					<u> </u>		
¹ Type: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	S=Masked	Sand Gra	ains.	² Location: PL=P		
Hydric Soil	Indicators:						Indicator	s for Problema	tic Hydric Soils ³ :
<u> </u>	(A1)		Dark Surface	e (S7)			2 cm	Muck (A10) (ML	.RA 147)
Histic Ep	oipedon (A2)		Polyvalue Be	low Surfac	e (S8) (M	ILRA 147,	148) Coas	t Prairie Redox ((A16)
Black Hi	stic (A3)		Thin Dark Su	ırface (S9)	(MLRA 1	47, 148)	(M	LRA 147, 148)	
Hydroge	en Sulfide (A4)		Loamy Gleye	ed Matrix (F	-2)		Piedr	mont Floodplain	Soils (F19)
	d Layers (A5)		Depleted Ma	trix (F3)			(M	LRA 136, 147)	
2 cm Mu	uck (A10) (LRR N)		Redox Dark					Shallow Dark Su	
Depleted	d Below Dark Surface	e (A11)	Depleted Dar	rk Surface	(F7)		Other	r (Explain in Ren	narks)
	ark Surface (A12)		Redox Depre	•	,				
-	/lucky Mineral (S1) (L	.RR N,	Iron-Mangan		s (F12) (I	LRR N,			
	A 147, 148)		MLRA 13	,			2		
	Bleyed Matrix (S4)		Umbric Surfa	· / ·					ic vegetation and
	Redox (S5)		Piedmont Flo	•	• •	•	•	id hydrology mus	•
	Matrix (S6)		Red Parent N	Material (F2	21) (MLR /	A 127, 147	') unless	disturbed or pro	blematic.
Restrictive I	Layer (if observed):								
Туре:									
Depth (ind	ches):						Hydric Soil Pre	esent? Yes _	<u> </u>
Remarks:							1		

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Channel 1	Date/Time: ^{6/1/22} 10:00		
Assessors/Affiliation: Jason Mann, PE, TN-QHP # 1042-TN10, Cierra Homic, & Clayton Biden	Project ID :		
Site Name/Description: Etowah Industrial Park	24-22451		
Site Location: Map 097, Parcel 018.00 and Map 087, Parcel 206.00			
HUC (12 digit): 060200021003	Lat/Long: Lat: 35.3767° Long: -84.5226°		
Previous Rainfall (7-days) : 1.24"			
Precipitation this Season vs. Normal : abnormally wet elevated average low abn Source of recent & seasonal precip data : NOAA	ormally dry unknown		
Watershed Size : 179.2 acres County: N	lcMinn		
Soil Type(s) / Geology : Bm-Bloomingdale silty clay loam, TaC-Tasso loam, Ha-Hamblen silt loam	Source: WSS		
Surrounding Land Use : Agricultural, Residential, and Commerical			
Degree of historical alteration to natural channel morphology & hydrology (circle one & do Severe Moderate Slight	escribe fully in Notes) : osent		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	х	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	х	WWC
 Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 	x	WWC
 Daily flow and precipitation records showing feature only flows in direct response to rainfall 	х	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	x	Stream
6. Presence of fish (except Gambusia)	х	Stream
7. Presence of naturally occurring ground water table connection	х	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	х	Stream
9. Evidence watercourse has been used as a supply of drinking water	х	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) = ^{22.5}

Justification / Notes :

Channel 1 Upstream Point - Lat: 35.3767°, Long: -84.5226°

Channel 1 Downstream Point - Lat: 35.3730°, Long: -84.5288°

Multiple culverts found in conjunction with the Channel

A. Geomorphology (Subtotal = ⁹)	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	No = 0		Yes	= 3
NRCS map				

B. Hydrology (Subtotal = 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 = 8.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

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

Total Points =	22.5
Under Normal Condition	A Wataraauraa ia a Wat Waath

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Channel 2	Date/Time: ^{6/1/22} 10:30
Assessors/Affiliation: Jason Mann, PE, TN-QHP # 1042-TN10, Cierra Homic, & Clayton Biden	Project ID :
Site Name/Description: Etowah Industrial Park	24-22451
Site Location: Map 097, Parcel 018.00 and Map 087, Parcel 206.00	
HUC (12 digit): 060200021003	Lat/Long: Lat: 35.3730° Long: -84.5288°
Previous Rainfall (7-days) : 1.24"	
Precipitation this Season vs. Normal : abnormally wet elevated average low abn Source of recent & seasonal precip data : NOAA	ormally dry unknown
Watershed Size : ^{25.6 acres} County: M	lcMinn
Soil Type(s) / Geology : Bm-Bloomingdale silty clay loam, TaC-Tasso loam, Ha-Hamblen silt loam	Source: WSS
Surrounding Land Use : Agricultural, Residential, and Commerical	
Degree of historical alteration to natural channel morphology & hydrology (circle one & do Severe Moderate Slight	escribe fully in Notes) : <mark>osent</mark>

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

<u>Secondary Indicator Score (if applicable)</u> = 6.5

Justification / Notes :

Channel 2 Upstream Point - Lat: 35.3730°, Long: -84.5288°

Channel 2 Downstream Point - Lat: 35.3735°, Long: -84.5282°

A. Geomorphology (Subtotal = ³)	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	No = 0		Yes	= 3
NRCS map				

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

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

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

Total Points = _____6.5

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Channel 3		Date/Time:	6/9/22 14:00
Assessors/Affiliation: Jason Mann, Cierra Homic, and Clayton Biden		Project ID :	
Site Name/Description: Etowah Industrial Park		24-22451	
Site Location: Map 097, Parcel 018.00 and Map 087, Parcel 206.00			
HUC (12 digit): 060200021003		Lat/Long:	
Previous Rainfall (7-days) : 1.18"		Lat: 35.3772° Long: -84.539	
Precipitation this Season vs. Normal : abnormally wet elevated average Source of recent & seasonal precip data : NOAA	low abno	ormally dry	unknown
	County: N	IcMinn	
Soil Type(s) / Geology : ^{CnC2—Coile silt loam, Eo—Etowah loam}		Source:	WWS
Surrounding Land Use : Agricultural & Residential			
Degree of historical alteration to natural channel morphology & hydrology (circle Severe Moderate Slight		escribe fully ir	Notes) :

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	х	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	Х	WWC
 Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 	x	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	х	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	x	Stream
6. Presence of fish (except Gambusia)	х	Stream
7. Presence of naturally occurring ground water table connection	х	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	х	Stream
9. Evidence watercourse has been used as a supply of drinking water	х	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) = ²⁶

Justification / Notes: Upstream Point - Lat: 35.3780°, Long: -84.5385°

Downstream Point - Lat: 35.3709°, Long: -84.5229°

A. Geomorphology (Subtotal = ^{11.5})	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS				
or	No = 0		Yes	= 3
NRCS map				

B. Hydrology (Subtotal = ^{7.5})	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 = 7)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	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 =	26
Under Normal Condition	ns, Watercourse is a Wet Weather
Conveyance if Seconda	ry Indicator Score < 19 points

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Channel 4		Date/Time: 6/9/22 14:10
Assessors/Affiliation: Jason Mann, Cierra Homic, and Clayton Biden		Project ID :
Site Name/Description: Etowah Industrial Park		24-22451
Site Location: Map 097, Parcel 018.00 and Map 087, Parcel 206.00		
HUC (12 digit): 060200021003		Lat/Long:
Previous Rainfall (7-days) : 1.18"		Lat: 35.3772° Long: -84.5398°
Precipitation this Season vs. Normal : abnormally wet elevated average Source of recent & seasonal precip data : NOAA	low abn	ormally dry unknown
Watershed Size : 96 Acres	County: M	McMinn
Soil Type(s) / Geology : ^{CnC2—Coile silt loam, Eo—Etowah loam}		Source: WWS
Surrounding Land Use : Agricultural & Residential		
Degree of historical alteration to natural channel morphology & hydrology (circ Severe Moderate Slight		escribe fully in Notes) : osent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	х	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	Х	WWC
 Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 	х	WWC
 Daily flow and precipitation records showing feature only flows in direct response to rainfall 	х	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	х	Stream
6. Presence of fish (except Gambusia)	Х	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	х	Stream
9. Evidence watercourse has been used as a supply of drinking water	х	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) = 20.5

Justification / Notes :

Upstream Point - Lat: 35.3769°, Long: -84.5397°

Downstream Point - Lat: 35.3772°, Long: -84.5398°

A. Geomorphology (Subtotal = ^{9.5})	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS				
or	No = 0		Yes	= 3
NRCS map				

B. Hydrology (Subtotal = 6)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	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 = ⁵)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

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

Total Points =2	<u>2</u> 0.5
Under Normal Conditions,	Watercourse is a Wet Weather
Conveyance if Secondary	Indicator Score < 19 points

No<u>tes :</u>

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Channel 5		Dale/Time:	/9/22 4:15
Assessors/Affiliation: Jason Mann, Cierra Homic, and Clayton Biden		Project ID :	
Site Name/Description: Etowah Industrial Park		24-22451	
Site Location: Map 097, Parcel 018.00 and Map 087, Parcel 206.00			
HUC (12 digit): 060200021003		Lat/Long:	
Previous Rainfall (7-days) : 1.18"		Lat: 35.3772° Long: -84.5398°	
Precipitation this Season vs. Normal : abnormally wet elevated average I Source of recent & seasonal precip data : NOAA	ow abno	ormally dry u	nknown
	County: N	1cMinn	
Soil Type(s) / Geology : ^{CnC2—Coile silt loam, Eo—Etowah loam}		Source: W	/WS
Surrounding Land Use : Agricultural & Residential			
Degree of historical alteration to natural channel morphology & hydrology (circle Severe Moderate Slight		escribe fully in N sent	Notes) :

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 12.5

Justification / Notes : Upstream Point - Lat: 35.3774°, Long: -84.5400°

Downstream Point - Lat: 35.3772°, Long: -84.5398°

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

B. Hydrology (Subtotal = 3)	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 = 3.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

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

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

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Channel 6		Date/Time:	6/9/22 14:30
Assessors/Affiliation: Jason Mann, Cierra Homic, and Clayton Biden		Project ID :	
Site Name/Description: Etowah Industrial Park		24-22451	
Site Location: Map 097, Parcel 018.00 and Map 087, Parcel 206.00			
HUC (12 digit): 060200021003		Lat/Long:	
Previous Rainfall (7-days) : 1.18"		Lat: 35.3780° Long: -84.5385°	
Precipitation this Season vs. Normal : abnormally wet elevated average Source of recent & seasonal precip data : NOAA	low abno	ormally dry	unknown
	County: N	IcMinn	
Soil Type(s) / Geology : ^{CnC2—Coile silt loam, Eo—Etowah loam}		Source:	WWS
Surrounding Land Use : Agricultural & Residential			
Degree of historical alteration to natural channel morphology & hydrology (circle Severe Moderate Slight		escribe fully ir	Notes) :

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	х	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	Х	WWC
 Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 	х	WWC
 Daily flow and precipitation records showing feature only flows in direct response to rainfall 	х	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	х	Stream
6. Presence of fish (except Gambusia)	Х	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	х	Stream
9. Evidence watercourse has been used as a supply of drinking water	х	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

Justification / Notes : Upstream Point - Lat: 35.3779°, Long: -84.5375°

Downstream Point - Lat: 35.3780°, Long: -84.5385°

A. Geomorphology (Subtotal = 7)	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	No = 0		Yes	= 3
NRCS map				

B. Hydrology (Subtotal = ^{5.5})	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 = 6.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

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

Total Points =	<u> 1</u> 9
Under Normal Conditions	s, Watercourse is a Wet Weather
Conveyance if Secondar	y Indicator Score < 19 points

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Channel 7		Date/Time: 6/9/22 16:00
Assessors/Affiliation: Jason Mann, Cierra Homic, and Clayton Biden		Project ID :
Site Name/Description: Etowah Industrial Park		24-22451
Site Location: Map 097, Parcel 018.00 and Map 087, Parcel 206.00		
HUC (12 digit): 060200021003		Lat/Long:
Previous Rainfall (7-days) : 1.18"		Lat: 35.3709° Long: -84.5229°
Precipitation this Season vs. Normal : abnormally wet elevated average Source of recent & seasonal precip data : NOAA	low abn	ormally dry unknown
Watershed Size : 96 Acres	County:	McMinn
Soil Type(s) / Geology : ^{CnC2—Coile silt loam, Eo—Etowah loam}		Source: WWS
Surrounding Land Use : Agricultural & Residential		
Degree of historical alteration to natural channel morphology & hydrology (circ Severe Moderate Slight		escribe fully in Notes) : osent

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	х	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	Х	WWC
 Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions 	x	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	х	WWC
 Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase 	x	Stream
6. Presence of fish (except Gambusia)	х	Stream
7. Presence of naturally occurring ground water table connection	х	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	х	Stream
9. Evidence watercourse has been used as a supply of drinking water	х	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) = 25.5

Justification / Notes: Upstream Point - Lat: 35.3709°, Long: -84.5229° Downstream Point - Lat: 35.3708°, Long: -84.5260°

A. Geomorphology (Subtotal = 11.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
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	No = 0		Yes	= 3
NRCS map				

B. Hydrology (Subtotal = ⁹)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	
15. Water in channel and >48 hours since sig. rain	0	1	2	3	
16. Leaf litter in channel (January – September)	1.5	1	0.5	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 = ⁵)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed 1	3	2	1	0
21. Rooted plants in the thalweg 1	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed 2	0	0.5	1	1.5

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

Total Points =	<u>2</u> 5.5
	Mataraauraa ia a Mat Maathar

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

Appendix D Weather Data

Normal Weather Conditions Calculations Table

Knoxville –2022

			Long-te	erm rainfal	l records					
	Month	Standard Deviation	(Mean Std. Dev.		Actual Rainfall	Condition (elevated, low, average)	Condition value	Month weight value	Product of previous two columns	
1 st prior month*	ΜΑΥ	1.96	1.84	3.80	5.76	4.77	AVE	2	3	6
2 nd prior month*	APR	1.83	1.92	3.75	5.58	3.68	AVE	2	2	4
3 rd prior month*	MAR	2.18	.8 2.61 4.79		6.97	3.69	AVE	2	1	2
									Sum =	12

Note:

If sum is:	13 - Average
6-9	then prior period has been abnormally dry
10-14	then prior period has been normal (average)
15-18	Then prior period has been abnormally wet

Condition value:	
Low =	1
Average =	2
Elevated =	3

Climatological Report (Monthly) Issued by NWS Knoxville/Tri Cities, TN

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SNOW

CLIMATE REPORT NATIONAL WEATHER SERVICE MORRISTOWN, TN 932 AM EDT THU JUN 02 2022

... THE KNOXVILLE MCGHEE TYSON AIRPORT CLIMATE SUMMARY FOR THE MONTH OF MAY 2022...

CLIMATE NORMAL PERIOD: 1991 TO 2020 CLIMATE RECORD PERIOD: 1871 TO 2022

WEATHER		DATE(S)	NORMAL VALUE	
TEMPERATURE (F) HIGHEST LOWEST AVG. MAXIMUM AVG. MINIMUM MEAN DAYS MAX >= 90 DAYS MAX <= 32 DAYS MIN <= 32 DAYS MIN <= 0	90 52 81.2 60.5 70.9 2 0 0	05/20 05/21 05/09	78.9 56.9 67.9	2.3 3.6 3.0
PRECIPITATION (RECORD MAXIMUM MINIMUM TOTALS DAYS >= .01 DAYS >= .10 DAYS >= .50 DAYS >= 1.00 GREATEST 24 HR. TOTAL	10.98 0.71 <mark>4.77</mark> 10 7 4 2	1941	4.13	0.64
SNOWFALL (INCHE TOTALS SINCE 7/1 SNOWDEPTH AVG. DAYS >= TRACE GREATEST SNOW DEPTH	0.0 10.7		0.0	0.0
DEGREE DAYS HEATING TOTAL SINCE 7/1 COOLING TOTAL SINCE 1/1	9 3153 202 241		53 3525 143 184	59 57
WEATHER CONDITI THUNDERSTORM	ONS. NU		S WITH	

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Climatological Report (Monthly) Issued by NWS Knoxville/Tri Cities, TN

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000 CXUS54 KMRX 021904 CLMCHA

CLIMATE REPORT NATIONAL WEATHER SERVICE MORRISTOWN, TN 304 PM EDT MON MAY 02 2022

... THE CHATTANOOGA AIRPORT CLIMATE SUMMARY FOR THE MONTH OF APRIL 2022...

6 8

CLIMATE NORMAL PERIOD: 1991 TO 2020 CLIMATE RECORD PERIOD: 1879 TO 2022

WEATHER		DATE(S)		FROM NORMAL
TEMPERATURE (F) HIGHEST LOWEST AVG. MAXIMUM AVG. MINIMUM MEAN DAYS MAX >= 90 DAYS MAX <= 32 DAYS MIN <= 32 DAYS MIN <= 0	85 33 73.2 48.9 61.0 0 0	04/25 04/10	73.6 49.9 61.7	
PRECIPITATION (RECORD MAXIMUM MINIMUM TOTALS DAYS >= .01 DAYS >= .10 DAYS >= .50 DAYS >= 1.00 GREATEST	INCHES) 15.29 0.44 3.26 8 6 3 0		4.87	-1.61
24 HR. TOTAL	1.13	04/13 TO 0	4/14	
SNOWFALL (INCHE TOTALS SINCE 7/1 SNOWDEPTH AVG. DAYS >= TRACE GREATEST SNOW DEPTH	0.0 1.0 0		0.0	0.0
DEGREE DAYS HEATING TOTAL SINCE 7/1 COOLING TOTAL SINCE 1/1	2649 48 61		147 2996 50 61	-2 0
WEATHER CONDITI THUNDERSTORM SNOW FOG W/VIS <= 1/		5 R 0 F	'S WITH AIN 'OG	

Climatological Report (Monthly) Issued by NWS Knoxville/Tri Cities, TN

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000 CXUS54 KMRX 011345 CLMCHA

CLIMATE REPORT NATIONAL WEATHER SERVICE MORRISTOWN, TN 945 AM EDT FRI APR 01 2022

... THE CHATTANOOGA AIRPORT CLIMATE SUMMARY FOR THE MONTH OF MARCH 2022...

10 13

CLIMATE NORMAL PERIOD: 1991 TO 2020 CLIMATE RECORD PERIOD: 1879 TO 2022

WEATHER		DATE(S)		FROM NORMAL
TEMPERATURE (F) HIGHEST LOWEST AVG. MAXIMUM AVG. MINIMUM MEAN DAYS MAX >= 90 DAYS MAX <= 32 DAYS MIN <= 32 DAYS MIN <= 0	83 22 68.1 43.1 55.6 0 0 3	03/30 03/13	64.1 42.2 53.2	
PRECIPITATION (RECORD MAXIMUM MINIMUM TOTALS DAYS >= .01 DAYS >= .10 DAYS >= .50 DAYS >= 1.00 GREATEST	16.32 0.93 <mark>5.91</mark> 11 10 5	1980 1910	5.34	0.57
24 HR. TOTAL	1.88	03/08 TO 0	03/09	
SNOWFALL (INCHE TOTALS SINCE 7/1 SNOWDEPTH AVG. DAYS >= TRACE GREATEST SNOW DEPTH	1.0 1.0 0 1	03/12	1.1	-0.1
DEGREE DAYS HEATING TOTAL SINCE 7/1 COOLING TOTAL SINCE 1/1	2491 8 13		377 2848 10 11	-2 2
WEATHER CONDITI THUNDERSTORM SNOW FOG W/VIS <= 1/		4 F 0 F	S WITH AIN OG	

WFO Monthly/Daily Climate Data Issued by NWS Knoxville/Tri Cities, TN

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000 CXUS54 KMRX 011030 CF6TYS

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

	7–	Da				ai: 4″	nfa	al	1	STAT MONT YEAR LATI LONG	'H: : TUD	Е:	MAY 2022 35	/ILLE 49 N 59 W	MCG	HEE	TYSON	AIRPO
	TEMPE	JRE I	IN F	:	:	PCPN:	5	NOW:	WIN	D		SUN	SHINE	: SK		:PK	WND	
1	2	3	4	5	6A	6B	7	8	9 12Z	10 AVG	11 MX	 12 2MIN	13	14	15	16		18
	MAX =====						WTR							PSBL			SPD	
1	78	65	72	8	0	7	0.45	0.0	0	12.1	23	220	М	М	6	13	30	220
2	81	59	70	6	0	5	0.00	0.0	0	3.9	13	210	М	М	7	1	17	210
3	83	57	70	5	0	5	0.00	0.0	0	11.7		230	М	М	6			220
4	81	62	72	7	0	7	0.01	0.0	0	9.5			М	М	8	13		240
5	82	55	69	4	0		0.26	0.0	0	3.9				М	8	13		320
6	76	57	67	2	0	2	0.72	0.0	0	10.3			М	М		135		250
7	63	55	59	-7	6	0	0.15	0.0	0	8.9			М	М	10	1		250
8	69	54	62	-4	3	0		0.0	0	6.6		30		М	9		17	
9	78	52	65	-1	0	0	0.00	0.0	0	3.0		40		M	4		16	20
0	82	55	69	3	0	4	0.00	0.0	0	2.9		350	M	M	3	1	13	
1	84	57	71	4	0	-	0.00	0.0	0		10			M	4	-		250
2	83	58	71	4	0		0.00	0.0	0		16	40		M	3		21	20
3	82 82	63	73	6	0	8	0.04	0.0	0	4.9		140	M	M	6	3		130
4	8∠ 82	60	71 73	4	0 0	6	0.00	0.0	0	3.6		290 270	M	M		12	15	
5 6	82 81	63 58	73	5 2	0	8 5	0.00	0.0	0	4.7		270		M	4 5			280 230
0 7	82	50 54	68	2	0	э 3	0.00 0.00	0.0	0				M M	M M	3		20 14	
8	86	54	70	2	0		0.00	0.0	0			220		M	3 7			240
9	89	70	80	11	0	15	0.00	0.0	0	11.8			M	M	8			200
0	90	72	81	12	0	16		0.0	0	14.3			M	M	5		38	
1	90	70	80	11	0	15	0.00 T	0.0	0		20		M	M	4			240
2	86	67	77	8	0		0.58	0.0	0	9.2		230		M	5	13		220
3	70	61	66	-4	0	1	1.32	0.0	0	6.8		20		M	10		24	
4	77	62	70	0	0	5	Т	0.0	0	4.5		30		М	10		14	40
5	86	65	76	6	0	11	т	0.0	0	7.0	21	180	М	М	9		28	190
6	79	66	73	3	0	8	1.18	0.0	0	5.8		170		М	10	1		160
7	77	62	70	-1	0	5	0.06	0.0	0	9.1			М	М	7	1	30	240
8	77	57	67	-4	0	2	<mark>0.00</mark>	0.0	0	4.3	9	10	М	М	6		13	360
9	85	58	72	1	0	7	<mark>0.00</mark>	0.0	0	2.9	9	290	М	М	3		13	310
0	88	63	76	4	0	11	Т	0.0	0	4.2	16	80	М	М	3		23	70
	89 =====			6 ====			<mark>0.0</mark> 0		0			270 ====					14	260 ====
SΜ	2518	187	7		9	202	4.77	0.0) [202.0			М		191			
	81.2					=	=		!	6.5	FA	==== STST 240	М	===== M	==== 6		MAX(MP 64 250	

LAST OF SEVERAL OCCURRENCES

PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6) , PAGE 2

STATION: KNOXVILLE MCGHEE TYSON AIRPORT MONTH: MAY YEAR: 2022 LATITUDE: 35 49 N LONGITUDE: 83 59 W [TEMPERATURE DATA] [PRECIPITATION DATA] SYMBOLS USED IN COLUMN 16 AVERAGE MONTHLY: 70.9 TOTAL FOR MONTH: 4.77 1 = FOG OR MIST DPTR FM NORMAL: 3.0 DPTR FM NORMAL: 0.64 2 = FOG REDUCING VISIBILITY HIGHEST: 90 ON 21,20 GRTST 24HR 1.90 ON 22-23 TO 1/4 MILE OR LESS LOWEST: 52 ON 9 3 = THUNDER SNOW, ICE PELLETS, HAIL 4 = ICE PELLETS5 = HAIL TOTAL MONTH: 0.0 INCH GRTST 24HR 0.0 6 = FREEZING RAIN OR DRIZZLE GRTST DEPTH: 0 7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS 8 = SMOKE OR HAZE [NO. OF DAYS WITH] [WEATHER - DAYS WITH] 9 = BLOWING SNOW X = TORNADO MAX 32 OR BELOW: 0 0.01 INCH OR MORE: 10 MAX 90 OR ABOVE: 2 0.10 INCH OR MORE: 7 MIN 32 OR BELOW: 0 0.50 INCH OR MORE: 4 MIN 0 OR BELOW: 0 1.00 INCH OR MORE: 2 [HDD (BASE 65)] TOTAL THIS MO. 9 DPTR FM NORMAL -44 CLEAR (SCALE 0-3) 3 PTCLDY (SCALE 4-7) 20 TOTAL FM JUL 1 3153 CLOUDY (SCALE 8-10) 8 DPTR FM NORMAL -372 [CDD (BASE 65)] TOTAL THIS MO. 202 59 DPTR FM NORMAL [PRESSURE DATA] TOTAL FM JAN 1 241 HIGHEST SLP 30.28 ON 10 DPTR FM NORMAL 57 LOWEST SLP 29.49 ON 6 [REMARKS] #FINAL-05-22#

WFO Monthly/Daily Climate Data Issued by NWS Knoxville/Tri Cities, TN

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000 CXUS54 KMRX 101030 CF6TYS PRELIMINARY LOCAL CLIMATOLOGICAL DATA (WS FORM: F-6)

7 Day Rainfall: 0.8"										MONTH: JUNI YEAR: 2022 LATITUDE: 35			KNOXVILLE MCGHEE TYSON AIRPOR JUNE 2022 35 49 N 83 59 W					AIRPORT	
TEMPERATURE IN F: : PCPN: SNOW:										WIN	ID		SUNS	SHINE	SK	Y	:PK WND		
1	2	3	4	5	6A	6B		8	9	10	11	12	13	14	15	16	====== 5 17	18	
				DEP			WTR =====				SPD	DIR	MIN	PSBL			SPD	DR ====	
1	91	68	80	8	0		0.00	0.0	0			260		М	2	2		260	
2 3	87 81	68 64	78 73	6 1	0 0		0.37 0.01	0.0	0		. 18 5 14	50 30		M M	8	3	33 20		
4	81	61	71	-2	0		0.00	0.0	0			20		M	5		23		
5	84	61	73	0	0	8	<mark>0.00</mark>	0.0	0	4.0	10	110	M	М	б		15	90	
6	86	62	74	1	0		0.05	0.0	0			240		М		13		240	
7 8	82 83	67 69	75 76	1 2	0 0		0.48 0.27	0.0	0	9.0		200		M M		13 13		200 230	
9	82	64	73	-1	0		0.00	0.0	0			250		M	10	т э		230	
===	====		====:	====:				=====		=====	====	====	=====		====:			====	
SM	75				0	88	1.18	0.0		59.0			М		60				
		==== 1 64.		====	====	====			=====]	6.6	FA	==== STST 230	M M	 M		====	===== MAX(MP 39 230		
NOT	TES:		====:	=====			=====	=====		=====	===:		=====			====		====	
				RAL (
COI	LUMN	17 I	PEAK	WINI) IN	M.P.	н.												
PRI	CLIM	INARY	Z LO	CAL (CLIMA	ATOLO	OGICAL	DATA	A (WS	FORM	I: F	-6)	, PAC	GE 2					
STATION: KNOXVILLE MCGHEE TYSON AIRPORT MONTH: JUNE YEAR: 2022 LATITUDE: 35 49 N LONGITUDE: 83 59 W													AIRPORT						
[TI	EMPEI	RATUF	re di	ATA]		[PI	RECIPI	TATIO	ON DA	TA]		SY	MBOLS	G USEI) IN	COI	LUMN 16		
DP1 HIC	rr fi Shest	M NOF	RMAL 91	Y: 74 : 2 ON ON	1.5 1	DP1 GR1	TAL FO TR FM I TST 24	NORM	AT:	0.0		2	= FOC TO	GORN GREDU 1/4N HUNDEN	JCIN MILE		ISIBILI LESS	TY	
						SNO TOT	DW, IC FAL MO FST 24	NTH:	0.			4 5	= ICH = HAI	E PELI IL	LETS	IN C	OR DRIZ	ZLE	

	GRISI DEFIN: 0
[NO. OF DAYS WITH]	[WEATHER - DAYS WITH]
MAX 32 OR BELOW: 0	0.01 INCH OR MORE: 5
MAX 90 OR ABOVE: 1	0.10 INCH OR MORE: 3
MIN 32 OR BELOW: 0	0.50 INCH OR MORE: 0
MIN 0 OR BELOW: 0	1.00 INCH OR MORE: 0
[HDD (BASE 65)] TOTAL THIS MO. 0 DPTR FM NORMAL 0 TOTAL FM JUL 1 3153 DPTR FM NORMAL -374	,
[CDD (BASE 65)] TOTAL THIS MO. 88 DPTR FM NORMAL 14 TOTAL FM JAN 1 329 DPTR FM NORMAL 71	HIGHEST SLP M ON M

GRTST DEPTH: 0 7 = DUSTSTORM OR SANDSTORM: VSBY 1/2 MILE OR LESS

8 =SMOKE OR HAZE

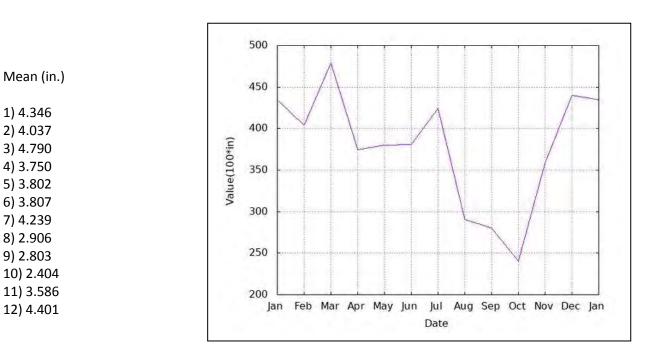
9 = BLOWING SNOW

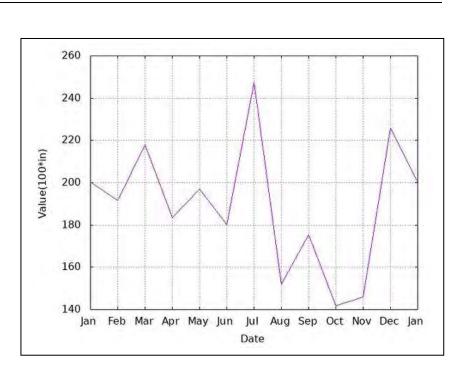
X = TORNADO

[REMARKS]

Knoxville Normal Weather Data







Standard Deviation (in.)

1) 2.002
2) 1.915
3) 2.180
4) 1.835
5) 1.969
6) 1.800
7) 2.474
8) 1.519
9) 1.754
10) 1.419
11) 1.459
12) 2.256

Appendix E Certifications





11/1/10

Jason Mann TDEC 3711 Middlebrook Pike Knoxville, TN 37921

RE: Tennessee Qualified Hydrologic Professional Certification

Dear Mr. Mann

Congratulations, you have successfully completed the Tennessee Hydrologic Determination course. By completing the TN-HDT course, you have also earned 20 Professional Development Hours (PDH). You have now met all the requirements to become a certificated Tennessee Qualified Hydrologic Professional (TN-QHP). Your TN-QHP certification card is attached below.

The TN-QHP certification is valid for three years. You must complete a refresher course within that three year period and submit evidence of course completion along with a renewal application at least 90 days before expiration of your certificate. Should you allow your certification to lapse after 3 years, you will be required to retake the TN-HDT course and submit a new application in order to become a certified TN-QHP.

Please refer to the TDEC website, http://tn.gov/environment/wpc or the TN-HDT training website, www.tnhdt.org for refresher course details and application forms.

Sincerely,

Paul E. Davis, Director Water Pollution Control

Cc: Timothy Gangaware TN-HDT Training Program Coordinator



Tennessee Qualified Hydrologic Professional



This card certifies that:

Jason Mann

has successfully completed the 3-day TN HDT course and is a Tennessee Qualified Hydrologic Professional Certification number 1042-TN10 Expires: 12/31/2014

Paul E. Davis, P.E. Director, TDEC-WPC

Timothy Gangaware, AICP Director, TNWRRC-UT **Tennessee Department of Environment & Conservation**



This is to certify that

Jason Mann

has successfully completed the three day course to become a Tennessee Qualified Hydrologic Professional

TN QHP Number 1042-TN10

Paule.

Paul E. Davis, P.E.

Timothy Gangaware, A.I.C.P



This certifies that the recipient has earned 20 Professional Development Hours



Tennessee Department of Environment & Conservation



This is to certify that

Jason Mann

successfully completed the one-day Tennessee Hydrologic Determination Refresher Course

September 22, 2020

Timothy Gangaware, TNWRRC



nothin Burn

Jonathon Burr, DWR

This certifies that the recipient has earned 6 Professional Development Hours



RE: North Etowah/McMinn County

Jason Dees <Jason.Dees@tn.gov>

Thu 6/16/2022 2:30 PM

To: Jennifer Innes <Jennifer.Innes@tn.gov>;Cali Dobbins <Cali.Dobbins@tn.gov>;Barbara Russell <Barbara.Russell@tn.gov> Upload to the HD page please.

From: Jennifer Innes < Jennifer.Innes@tn.gov> Sent: Thursday, June 16, 2022 12:19 PM To: Jason Dees <Jason.Dees@tn.gov> Subject: FW: North Etowah/McMinn County

From: Tom Moss <Tom.Moss@tn.gov> Sent: Thursday, June 16, 2022 12:18 PM To: Richie Johnson <rjohnson@sedev.org> Cc: Jennifer Innes <<u>Jennifer.Innes@tn.gov</u>>; Lee 2. Barber <<u>Lee.2.Barber@tn.gov</u>> Subject: FW: North Etowah/McMinn County

From reviewing the hydrologic determination, it does appear that an ARAP will be required and that stream/wetland mitigation credits would have to be purchased in the development of the property due to the impacts/modifications on the wetlands. I have copied Lee Barber, Manager of our Natural Resources Unit and Jennifer Innes, Manager of our Chattanooga Field Office on this in case they would have any further input.

Tom Moss. P.G. **Environmental Review Coordinator Compliance and Enforcement Unit Division of Water Resources** William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 11th Floor Nashville, TN 37243-1102 (615) 532-0170 tom.moss@tn.gov

Please Send Environmental Review Requests to: DWR.Environmentalreview@tn.gov



Environment &

Sign-up for the <u>TDEC E-Newsletter</u>. Tell us how we're doing! Please take 5-10 minutes to complete TDEC's Customer Service Survey.

From: Richie Johnson <riohnson@sedev.org> Sent: Thursday, June 16, 2022 10:19 AM To: Tom Moss <<u>Tom.Moss@tn.gov</u>> Subject: [EXTERNAL] RE: North Etowah/McMinn County

*** This is an EXTERNAL email. Please exercise caution. DO NOT open attachments or click links from unknown senders or unexpected email - STS-Security. ***

Tom,

Please see attached hydrologic report that we had completed at your request for McMinn County ARC Industrial Park project.

Thank you,

Richie Johnson

Regional Planner Southeast TN Development P.O. Box 4757 / 1000 Riverfront Pkwy Chattanooga, TN 37405 423-424-4265 office 423-267-7705 fax

From: Tom Moss <<u>Tom.Moss@tn.gov</u>> Sent: Tuesday, November 23, 2021 7:26 AM To: Richie Johnson <<u>rjohnson@sedev.org</u>> Subject: North Etowah/McMinn County

Sorry I haven't gotten back to you. I spoke with staff in our Natural Resources Unit (the ARAP people). They told me that there needed to be a new hydrologic determination as conditions can change.

Tom Moss, P.G. Environmental Review Coordinator Compliance and Enforcement Unit Division of Water Resources William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 11th Floor Nashville, TN 37243-1102 (615) 532-0170 tom.moss@tn.gov

Please Send Environmental Review Requests to: DWR.Environmentalreview@tn.gov



Sign-up for the <u>TDEC E-Newsletter</u>. Tell us how we're doing! Please take 5-10 minutes to complete <u>TDEC's Customer Service Survey</u>.