

# BDY NATURAL SCIENCES CONSULTANTS

May 19, 2022

*Via electronic mail*

Ms. Brooke Heriges  
Tennessee Department of Environment & Conservation  
Division of Water Pollution Control  
711 R.S. Gass Blvd.  
Nashville, Tennessee 37243

Re: Hydrologic Determinations  
Inman Branch and its Unnamed Tributaries, Unnamed Tributaries to Coleman Branch &  
Arkansas Creek  
Hargrove Road (390-acre Portion of Parcel 094 03800 00003094)  
Franklin, Williamson County, Tennessee

Dear Ms. Heriges:

Attached, please find materials supporting hydrologic determinations (HDs) conducted by BDY Environmental LLC (BDY) on 43 watercourses within the above referenced site. BDY submitted a report (DWR ID No. 31158) that addressed a 120-acre portion (the Priority Area) of the 510-acre site in April 2022. This report summarizes aquatic resources documented within a 390-acre portion (the HD Review Area) that surrounds the Priority Area (Figure 1). We are forwarding the accompanying HD Field Data Sheets, figures, and photographs, which are provided in support of our determinations regarding the assessed drainages as wet-weather conveyances or streams, as defined by Tennessee statute and associated administrative regulations.<sup>1,2</sup>

This report is submitted with the knowledge of the property owner<sup>3</sup>, and site access permission was provided to the Nashville Environmental Field Office via email on April 14<sup>th</sup>, 2022. The purpose of this report is to obtain TDEC's concurrence with these hydrologic determinations to inform site planning for a proposed residential development.

## **Project Site**

The assessed watercourses, listed in Table 1, are located within an approximately 390-acre review area (depicted as the HD Review Area) located west of Hargrove Road near its intersection with Pinewood Road in Franklin, Williamson County, Tennessee (Figure 1). The entire property comprises approximately 510 acres and includes a 120-acre Priority Area that BDY previously addressed (Figure 1).

Topographically, the review area comprises rolling hills and valleys. Land cover consists of deciduous forest and an open field. The US Geological Survey (USGS) Fairview 7.5-minute Topographic Quadrangle depicts Inman Branch in the northern portion of the review area,

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<sup>1</sup> Tennessee Code Annotated §69-3-103 (43) (A-D)

<sup>2</sup> TDEC Rules of the Tennessee Department of Environment & Conservation Division of Water Resources 400-40-17

<sup>3</sup> Mr. Charles Crews, 555 Great Circle Road, Nashville, Tennessee 37228. crews.charles@gmail.com

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Arkansas Creek west of the review area, Coleman Branch southwest of the review area, and several unnamed tributaries to these streams are depicted within the review area (Figure 1). The site lies within the South Harpeth River Upper Watershed, 12-digit hydrologic unit code (HUC) [051302040301]. The National Wetland Inventory (NWI) identifies Inman Branch, Coleman Branch, and Riverine habitats at the location of D-25, D-50, and D-66 (Appendix 1). BDY did not observe wetlands within the review area. A soil map from the Natural Resources Conservation Service (NRCS) Web Soil Survey is also included with this letter, and no hydric soils are mapped within the review area (Appendix 2).

### **Hydrologic Determinations**

Sara Samoray (QHP #1194-TN20) and Silas Mathes (QHP # 1112-TN13) of BDY conducted hydrologic determinations within the 390-acre Entire Review Area on March 28<sup>th</sup> & 30<sup>th</sup>, 2022. Based on climatological analysis, the determinations were conducted under wetter than normal conditions (Appendix 3). The local area received 1.53 inches of precipitation in the 7 days preceding the site visit on March 28<sup>th</sup> and 0.02 inches of precipitation in the 7 days preceding the site visit on March 30<sup>th</sup>. No precipitation fell within 48 hours of either site visit.

### **Streams**

Primary Field Indicator number 5, “Presence of multiple populations of obligate lotic organisms with  $\geq 2$  month aquatic phase,” was determinative of the hydrological status of D-25a, D-31, D-32, D-38, D-40, D-41, D-42, D-44, D-45, D-50, D-51, D-53, D-55, D-56, D-57, D-59, D-60, D-61, D-62, D-64, D-66, D-67, D-68, and D-70. We consistently observed numerous individuals of Pleurocerid snails and three species of caddisfly larvae (stone-, net-, and wood-building). Generally, streams originated at obvious seeps or springs below a headcut or at a bedrock contact.

### **Wet Weather Conveyances**

Primary Field Indicator number 3, “Watercourse dry anytime during February through April 15<sup>th</sup>, under normal precipitation / groundwater conditions,” was determinative of the hydrological status of D-33, D-34, D-35, D-36, D-39, D-43, D-46, D-47, D-49, D-52, D-54, D-58, D-63, D-65, D-69, D-71, and D-72. These wet weather conveyances were dry throughout their reaches during the site visit despite wetter than normal conditions. D-37 and D-48 were scored using TDEC’s HD Protocols, and Secondary Field Indicators were determinative that D-37 and D-48 are wet weather conveyances throughout their assessed extents.

Although the characteristics of each wet weather conveyance varied, general similarities were identified. Channels were frequently discontinuous with poorly demarcated bed and banks. Fibrous roots from upland vegetation were common. No aquatic or semi-aquatic macroinvertebrates or facultative wetland vegetation were present. Dense leaf litter and leaf packs dominated the channels. With the exception of three small pools in D-37 and one small pool at the top of D-48, no flow, pools, or wetted substrate was observed in any of the wet weather conveyances.



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The watercourses addressed in this HD are mapped on Figure 2 and are summarized in Table 1. The HD Field Data Sheets for the watercourses have been included in Appendix 4. Representative photographs of the assessed watercourses have been included in Appendix 5, and the mapped locations of the photographs are shown on Figures 3a-3c.

**Request for Concurrence**

We attest that all information submitted herein and in the accompanying attachments is true, accurate, and complete. We appreciate your review of this information and request your concurrence of our jurisdictional determinations. Please contact us at (615) 653-6940 if we may provide additional information or address your questions regarding our findings.

Very truly yours,

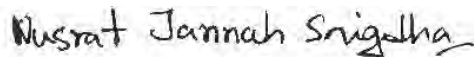
BDY ENVIRONMENTAL LLC



Sara Samoray, QHP (#1194-TN20)  
Senior Project Scientist



Silas Mathes, QHP (#1112-TN13)  
Senior Scientist



Nusrat Jannah Snigdha  
Staff Scientist

# BDY NATURAL SCIENCES CONSULTANTS

Table 1. Hargrove Road 120-acre Priority Area, Aquatic Resources Summary

Feature Name	Begin Assessment Location	End Assessment Location	Assessment
D-25a	35.897962, -87.050069	35.8959, -87.053133	Stream
D-31	35.893371, -87.055983	35.894579, -87.057982	Stream
D-32	35.893073, -87.057003	35.893608, -87.056875	Stream
D-33	35.892514, -87.057015	35.893073, -87.057003	Wet Weather Conveyance
D-34	35.893561, -87.054669	35.893371, -87.055983	Wet Weather Conveyance
D-35	35.892737, -87.055264	35.893324, -87.055662	Wet Weather Conveyance
D-36	35.898444, -87.049937	35.897962, -87.050069	Wet Weather Conveyance
D-37	35.899408, -87.049721	35.899535, -87.050136	Wet Weather Conveyance
D-38	35.899535, -87.050136	35.904099, -87.05739	Stream
D-39	35.89971, -87.052126	35.900213, -87.051898	Wet Weather Conveyance
D-40	35.902927, -87.053435	35.902868, -87.053541	Stream
D-41	35.903245, -87.054188	35.903085, -87.054271	Stream
D-42	35.901198, -87.055232	35.902989, -87.055702	Stream
D-43	35.900915, -87.055029	35.901198, -87.055232	Wet Weather Conveyance
D-44	35.901846, -87.05742	35.903318, -87.05663	Stream
D-45	35.902029, -87.057785	35.902046, -87.057433	Stream
D-46	35.901901, -87.058277	35.902029, -87.057785	Wet Weather Conveyance
D-47	35.901433, -87.057272	35.901846, -87.05742	Wet Weather Conveyance
D-48	35.902364, -87.05013	35.904473, -87.051252	Wet Weather Conveyance
D-49	35.903957, -87.050219	35.904473, -87.051252	Wet Weather Conveyance
D-50	35.904473, -87.051252	35.906718, -87.061326	Stream
D-51	35.905631, -87.051309	35.905457, -87.051756	Stream
D-52	35.906215, -87.051022	35.905631, -87.051309	Wet Weather Conveyance
D-53	35.905937, -87.052643	35.905364, -87.052657	Stream
D-54	35.906243, -87.052725	35.905937, -87.052643	Wet Weather Conveyance
D-55	35.90605, -87.054396	35.904947, -87.054343	Stream
D-56	35.90581, -87.056649	35.904413, -87.058017	Stream
D-57	35.905408, -87.057901	35.904976, -87.05757	Stream
D-58	35.906113, -87.056508	35.90581, -87.056649	Wet Weather Conveyance
D-59	35.903382, -87.060034	35.904476, -87.059054	Stream
D-60	35.90367, -87.062414	35.905377, -87.066268	Stream
D-61	35.906115, -87.064465	35.905274, -87.065346	Stream
D-62	35.904994, -87.064316	35.904897, -87.064976	Stream
D-63	35.903711, -87.064743	35.904069, -87.064468	Wet Weather Conveyance
D-64	35.903336, -87.06287	35.903424, -87.062959	Stream
D-65	35.903761, -87.062061	35.90367, -87.062414	Wet Weather Conveyance
D-66	35.900943, -87.061049	35.900297, -87.06658	Stream

# BDY NATURAL SCIENCES CONSULTANTS

Feature Name	Begin Assessment Location	End Assessment Location	Assessment
D-67	35.902012, -87.06243	35.900118, -87.065243	Stream
D-68	35.901644, -87.064493	35.901259, -87.064186	Stream
D-69	35.902223, -87.061487	35.902012, -87.06243	Wet Weather Conveyance
D-70	35.899336, -87.06388	35.899817, -87.064302	Stream
D-71	35.899221, -87.063783	35.899336, -87.06388	Wet Weather Conveyance
D-72	35.901599, -87.059436	35.900943, -87.061049	Wet Weather Conveyance

**From:** [Charles Crews](#)  
**To:** [dwr.nefo@tn.gov](mailto:dwr.nefo@tn.gov); [Sara Samoray](#)  
**Subject:** Hargrove Road Property HD—Landowner Access Permission  
**Date:** Thursday, April 14, 2022 3:50:45 PM

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Nashville Environmental Field Office

Division of Water Resources

To: [dwr.nefo@tn.gov](mailto:dwr.nefo@tn.gov)

cc: [ssamoray@bdy-inc.com](mailto:ssamoray@bdy-inc.com)

Subject: Hargrove Road Property HD--Landowner Access Permission

To Whom It May Concern:

As the owner of approximately 500 acres at Hargrove Road and Pinewood Road (Parcel 094 03800 00003094) west of Leipers Fork, Williamson County, I grant TDEC permission to visit the site for the purpose of verifying a hydrologic determination being submitted by BDY Environmental.

Sincerely,

Charles Crews

[555 Great Circle Road](#)

[Nashville, TN 37228](#)

Phone: 615-210-3570

Email: [crews.charles@gmail.com](mailto:crews.charles@gmail.com)

Gate code 3210

Sara E. Samoray

**BDY Environmental, LLC**

[2607 Westwood Drive Nashville, TN 37204](#)

M: [615.653.6940](tel:615.653.6940) | O: [615.460.9797](tel:615.460.9797) ext. 8



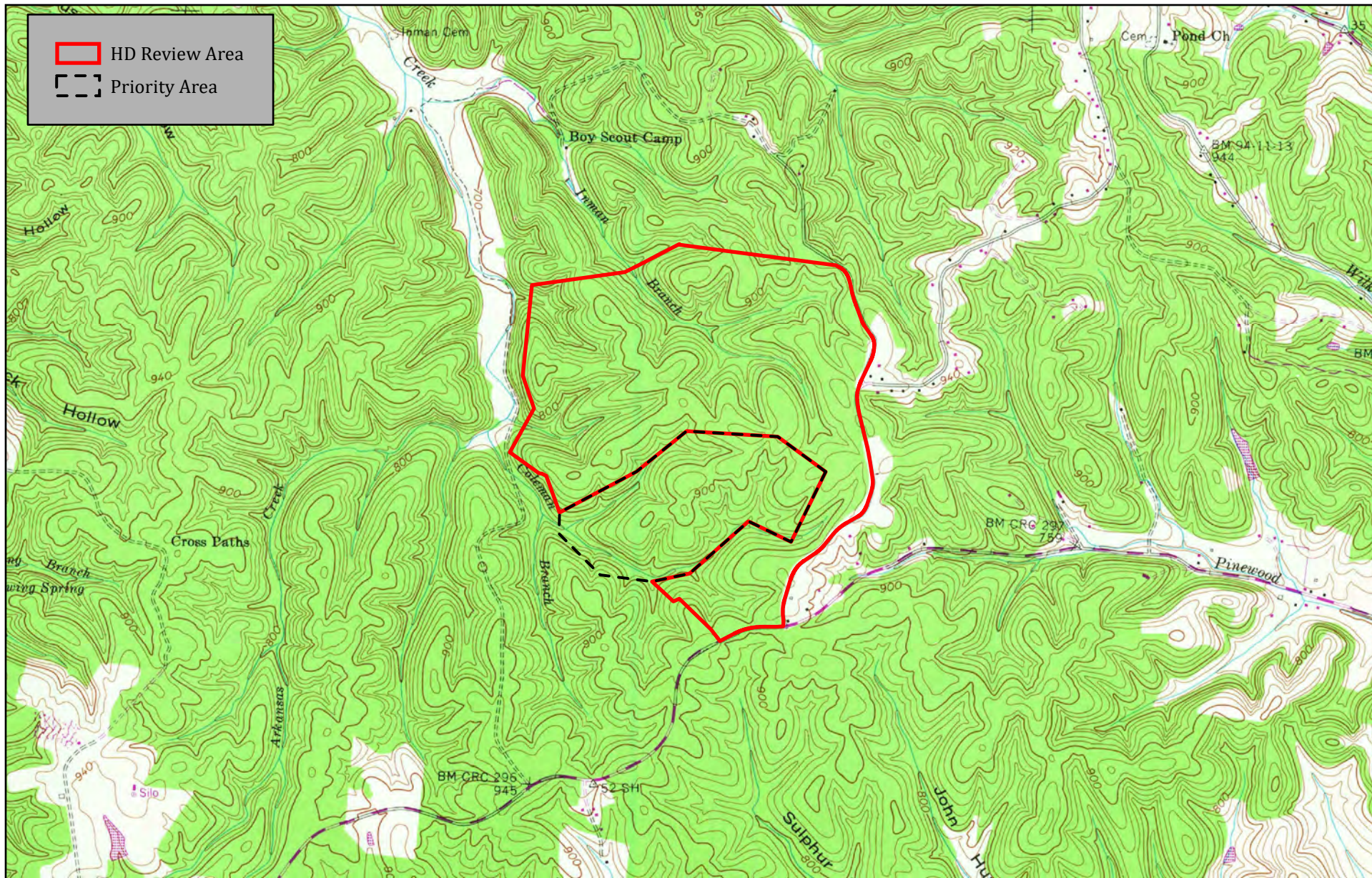


Figure 1. Site Location Map.  
Hargrove Road Property  
Franklin  
Williamson County, Tennessee

**BDY** NATURAL SCIENCES CONSULTANTS  
2607 Westwood Drive, Nashville, Tennessee | 615.460.9797 | www.bdyinc.com

0 1,000 2,000 Feet



Date: 5/17/2022  
NAD 1983 StatePlane Tennessee FIPS 4100 Feet  
87.05816°W 35.89965°N  
Prepared for: Tennessee Department of Environment and Conservation  
Prepared by: SES, SEM, NJS  
Sources: USGS 7.5-minute Fairview Topographic Quadrangle.



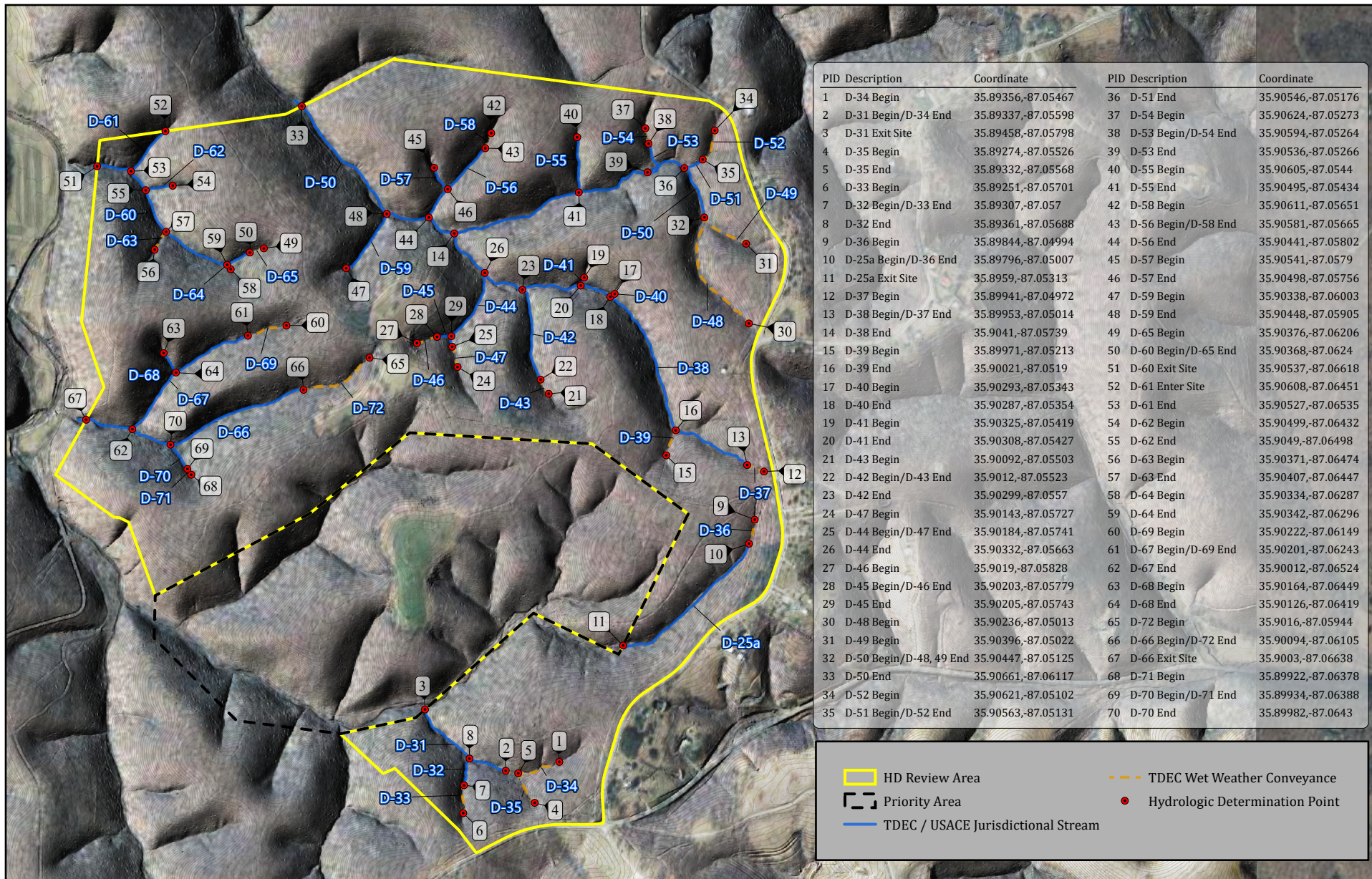


Figure 2. Hydrologic Determination Summary Map.  
Hargrove Road Property  
Franklin  
Williamson County, Tennessee



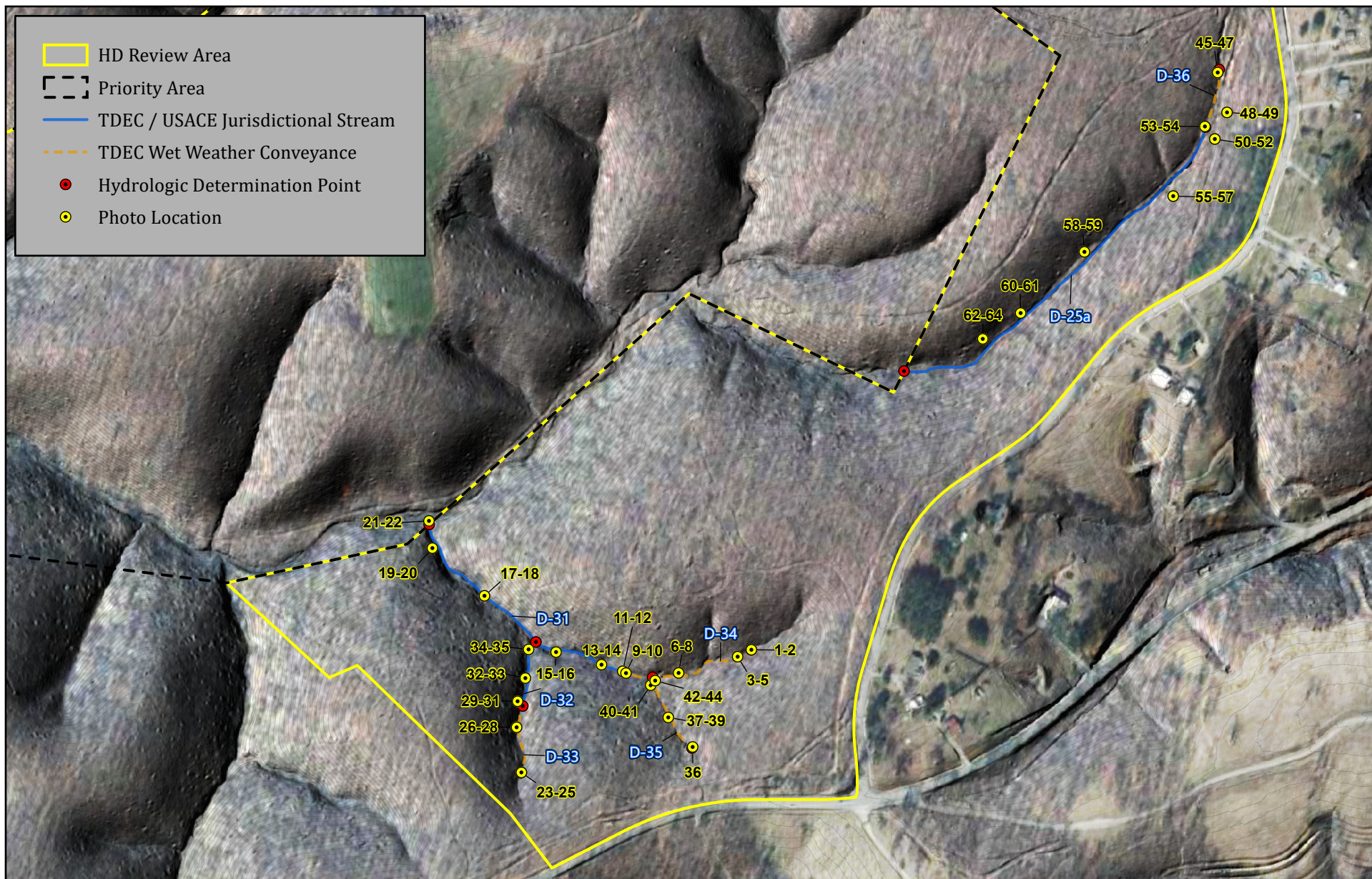


Figure 3a. Photo Location and Hydrologic Determination Detail Map (D-25a, D-31 to D-36).

**Hargrove Road Property**

**Franklin**

**Williamson County, Tennessee**

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2607 Westwood Drive, Nashville, Tennessee | 615.460.9797 | www.bdy-inc.com

0 250 500 Feet



Date: 5/17/2022  
NAD 1983 StatePlane Tennessee FIPS 4100 Feet  
87.0553°W 35.89528°N  
Prepared for: Tennessee Department of Environment and Conservation  
Prepared by: SES, SEM, NJS  
Sources: TDEC Aerial Imagery, TNGIS LIDAR 2018, BDY Site Visit  
03-04/04/2022 and 3/30/2022.



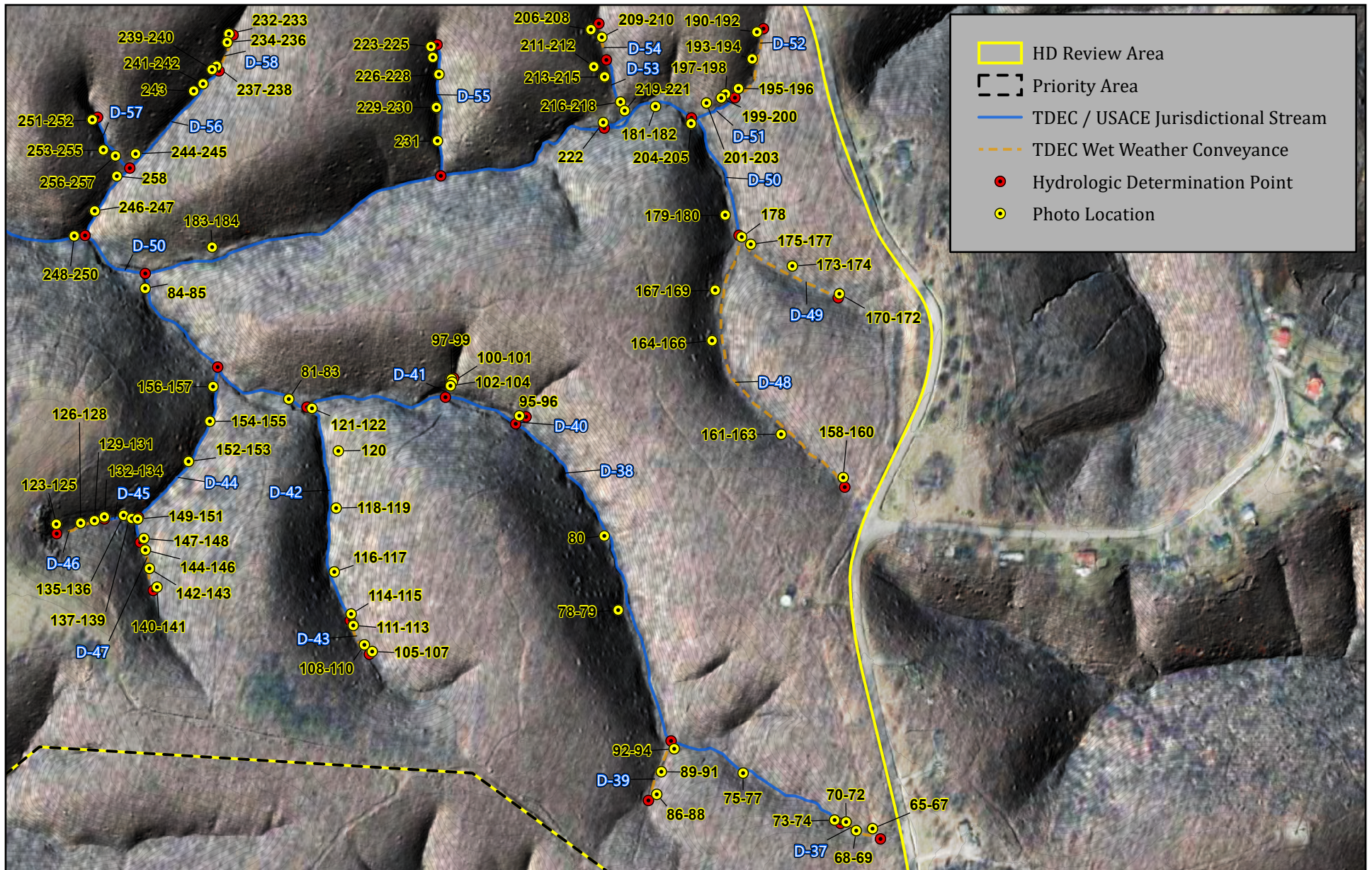


Figure 3b. Photo Location and Hydrologic Determination Detail Map (D-37 to D-58).

**Hargrove Road Property**

**Franklin**

**Williamson County, Tennessee**

**BDY** NATURAL SCIENCES CONSULTANTS  
2607 Westwood Drive, Nashville, Tennessee | 615.460.9797 | www.bdyinc.com

0 250 500 Feet



Date: 5/17/2022  
NAD 1983 StatePlane Tennessee FIPS 4100 Feet  
87.05178°W 35.90276°N  
Prepared for: Tennessee Department of Environment and Conservation  
Prepared by: SES, SEM, NJS  
Sources: TDOT Aerial Imagery, TNGIS LIDAR 2018, BDY Site Visit  
03-04/04/2022 and 3/30/2022.



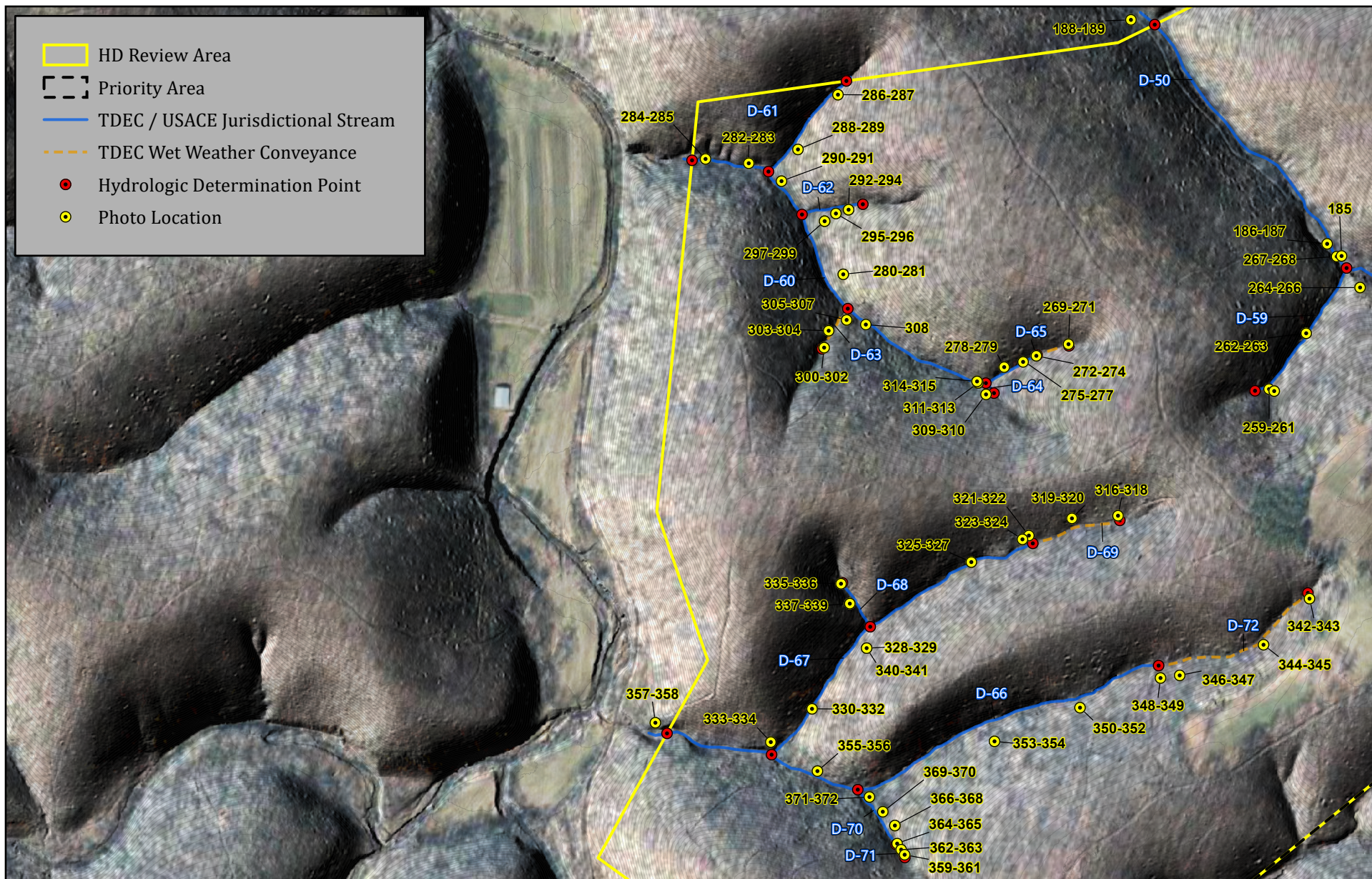


Figure 3c. Photo Location and Hydrologic Determination Detail Map (D-50, D-59 to D-72).

**Hargrove Road Property**

**Franklin**

**Williamson County, Tennessee**

**BDY** NATURAL SCIENCES CONSULTANTS  
2607 Westwood Drive, Nashville, Tennessee | 615.460.9797 | www.bdyinc.com

0 250 500 Feet



Date: 5/17/2022  
NAD 1983 StatePlane Tennessee FIPS 4100 Feet  
87.06614°W 35.90286°N  
Prepared for: Tennessee Department of Environment and Conservation  
Prepared by: SES, SEM, NJS  
Sources: TDEC Aerial Imagery, TNGIS LIDAR 2018, BDY Site Visit  
03-04/04/2022 and 3/30/2022.

APPENDIX 1:  
NWI Map





U.S. Fish and Wildlife Service

# National Wetlands Inventory

## Hargrove Road Overall Area



April 14, 2022

### Wetlands

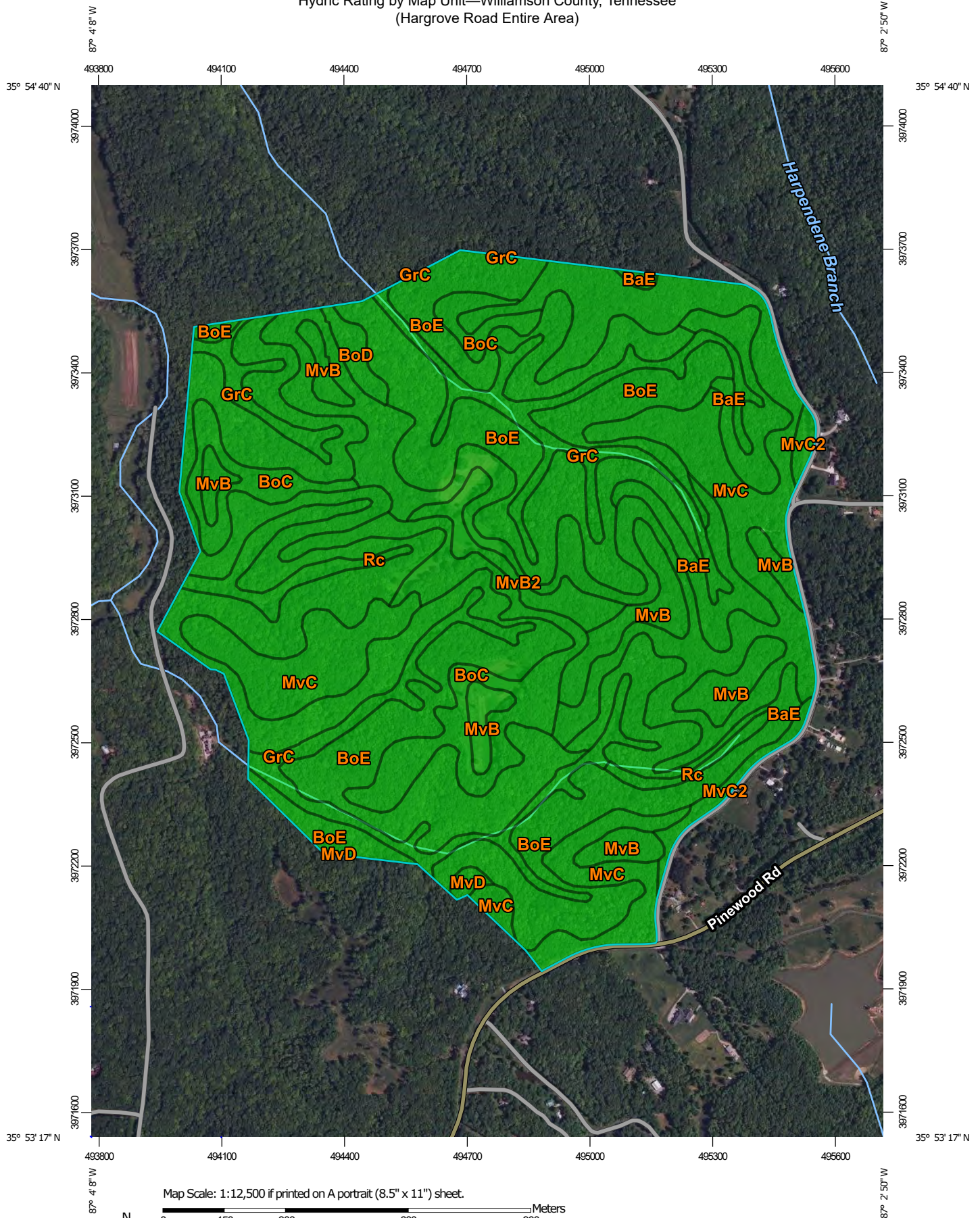
	Estuarine and Marine Deepwater		Freshwater Emergent Wetland		Lake
	Estuarine and Marine Wetland		Freshwater Forested/Shrub Wetland		Other
			Freshwater Pond		Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

## APPENDIX 2: Web Soil Survey




# Hydric Rating by Map Unit—Williamson County, Tennessee (Hargrove Road Entire Area)



# Hydric Rating by Map Unit—Williamson County, Tennessee (Hargrove Road Entire Area)







## MAP LEGEND

### Area of Interest (AOI)







 Area of Interest (AOI)

### Soils







#### Soil Rating Polygons

 Hydric (100%)  
 Hydric (66 to 99%)  
 Hydric (33 to 65%)  
 Hydric (1 to 32%)  
 Not Hydric (0%)  
 Not rated or not available


#### Soil Rating Lines

 Hydric (100%)  
 Hydric (66 to 99%)  
 Hydric (33 to 65%)  
 Hydric (1 to 32%)  
 Not Hydric (0%)  
 Not rated or not available





#### Soil Rating Points

 Hydric (100%)  
 Hydric (66 to 99%)  
 Hydric (33 to 65%)  
 Hydric (1 to 32%)  
 Not Hydric (0%)  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Williamson County, Tennessee  
 Survey Area Data: Version 16, Sep 10, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 20, 2021—Jun 14, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BaE	Baxter cherty silt loam, 20 to 30 percent slopes	0	35.1	6.9%
BoC	Bodine gravelly silt loam, 5 to 12 percent slopes	0	41.7	8.2%
BoD	Bodine gravelly silt loam, 12 to 20 percent slopes	0	3.5	0.7%
BoE	Bodine gravelly silt loam, 20 to 40 percent slopes	0	211.4	41.4%
GrC	Greendale cherty silt loam, 2 to 12 percent slopes	0	42.9	8.4%
MvB	Mountview silt loam, shallow, 2 to 5 percent slopes	0	28.0	5.5%
MvB2	Mountview silt loam, shallow, 2 to 5 percent slopes, eroded	0	8.1	1.6%
MvC	Mountview silt loam, shallow, 5 to 12 percent slopes	0	121.8	23.9%
MvC2	Mountview silt loam, shallow, 5 to 12 percent slopes, eroded	0	5.7	1.1%
MvD	Mountview silt loam, shallow, 12 to 20 percent slopes	0	1.3	0.2%
Rc	Rockland	0	11.1	2.2%
<b>Totals for Area of Interest</b>			<b>510.6</b>	<b>100.0%</b>



## Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

### References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

## Rating Options

*Aggregation Method:* Percent Present

*Component Percent Cutoff:* None Specified

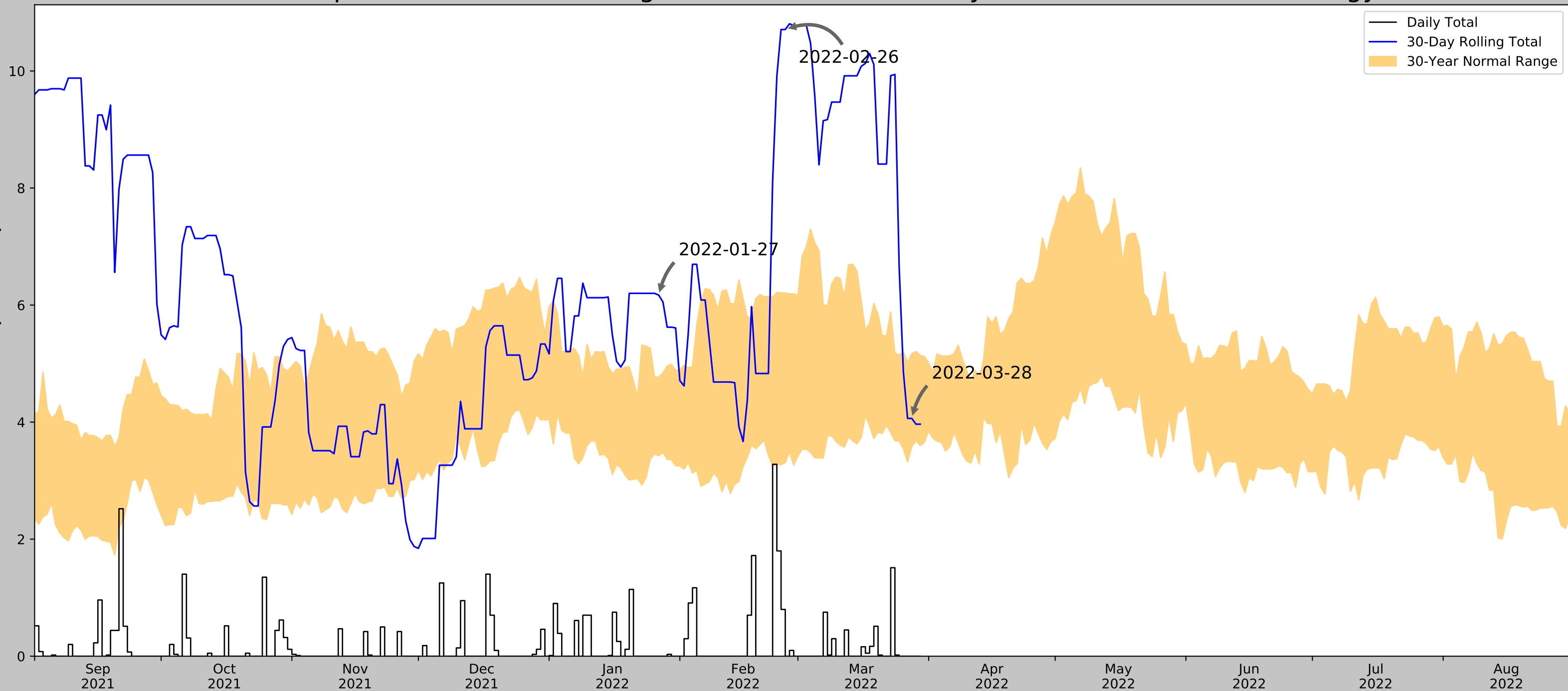
*Tie-break Rule:* Lower

## APPENDIX 3: Climate Analysis



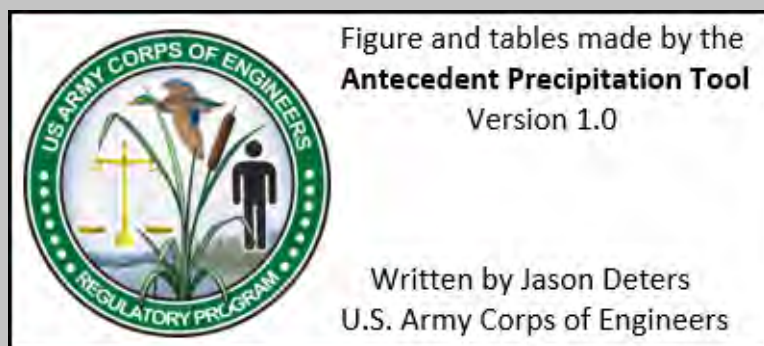
# Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network

Rainfall (Inches)



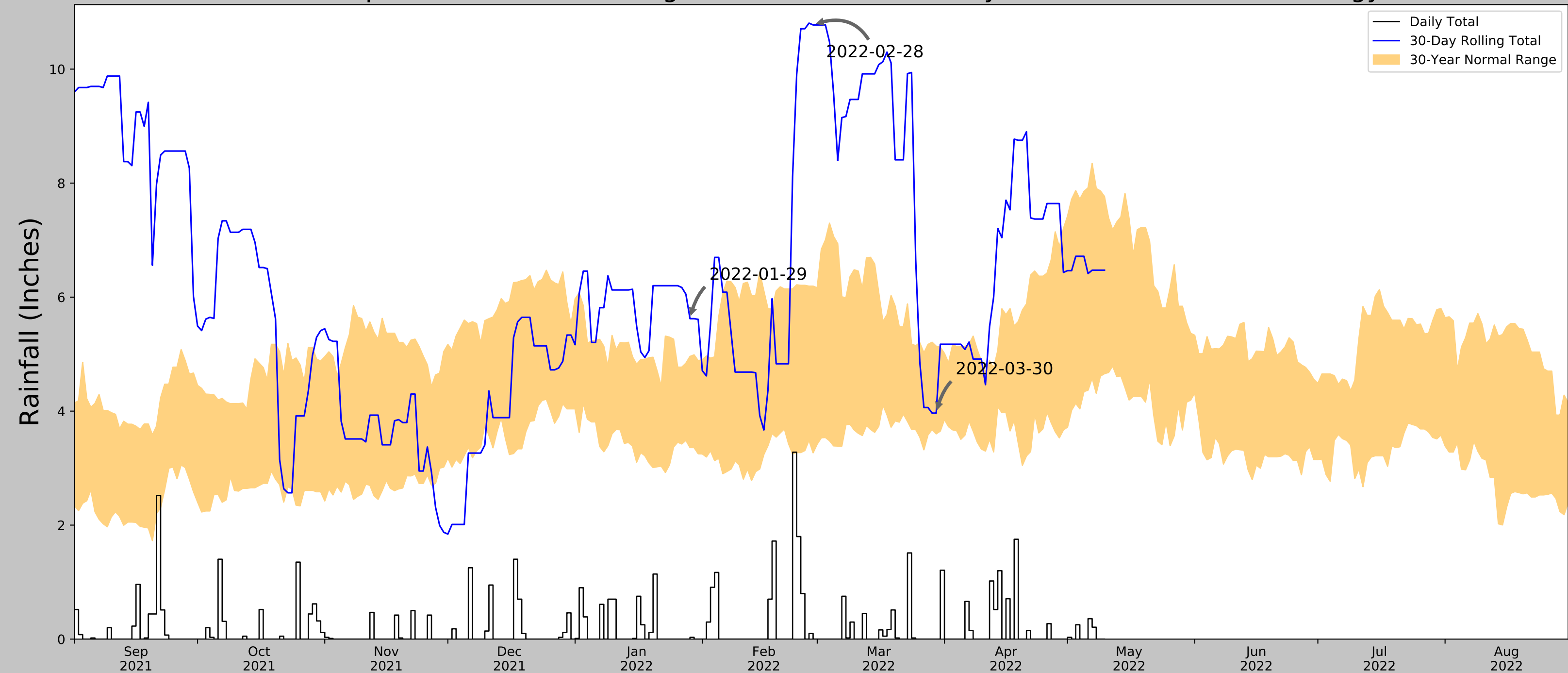
Coordinates	35.897578, -87.056276
Observation Date	2022-03-28
Elevation (ft)	867.55
Drought Index (PDSI)	Extreme wetness (2022-02)
WebWIMP H <sub>2</sub> O Balance	Wet Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-03-28	3.584646	5.170079	4.062992	Normal	2	3	6
2022-02-26	3.308662	6.206693	10.708662	Wet	3	2	6
2022-01-27	3.423622	4.77126	6.169292	Wet	3	1	3
Result							Wetter than Normal - 15



Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
FAIRVIEW BOWIE NAT CTR	35.9689, -87.1364	859.908	6.662	7.642	3.049	7245	88
FAIRVIEW 1.3 WNW	35.9869, -87.145	849.081	1.333	10.827	0.614	6	0
FAIRVIEW 1.4 WNW	35.9893, -87.1459	863.845	1.506	3.937	0.684	15	2
FAIRVIEW 2.9 SW	35.9487, -87.1588	846.129	1.875	13.779	0.87	674	0
FAIRVIEW 3.8 SW	35.9397, -87.1718	869.095	2.827	9.187	1.298	1	0
KINGSTON SPRINGS	36.1033, -87.1153	517.06	9.361	342.848	7.422	3334	0
DICKSON	36.075, -87.3958	779.856	16.244	80.052	8.61	78	0

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



Coordinates	35.9041919, -87.0552638
Observation Date	2022-03-30
Elevation (ft)	863.48
Drought Index (PDSI)	Severe wetness
WebWIMP H <sub>2</sub> O Balance	Wet Season

30 Days Ending	30 <sup>th</sup> %ile (in)	70 <sup>th</sup> %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-03-30	3.601181	5.138977	3.964567	Normal	2	3	6
2022-02-28	3.268504	6.19252	10.775591	Wet	3	2	6
2022-01-29	3.360236	4.959449	5.622047	Wet	3	1	3
Result							Wetter than Normal - 15




Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

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

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
FAIRVIEW BOWIE NAT CTR	35.9689, -87.1364	859.908	6.371	3.572	2.89	7245	89
FAIRVIEW 1.3 WNW	35.9869, -87.145	849.081	1.333	10.827	0.614	6	0
FAIRVIEW 1.4 WNW	35.9893, -87.1459	863.845	1.506	3.937	0.684	15	1
FAIRVIEW 2.9 SW	35.9487, -87.1588	846.129	1.875	13.779	0.87	674	0
FAIRVIEW 3.8 SW	35.9397, -87.1718	869.095	2.827	9.187	1.298	1	0
KINGSTON SPRINGS	36.1033, -87.1153	517.06	9.361	342.848	7.422	3334	0
DICKSON	36.075, -87.3958	779.856	16.244	80.052	8.61	78	0

Name of Site: Hargrove Road Entire Area (390 acres)  
 Date of Site Visit: 3/28 & 3/30/2022  
 Previous 7 Day Rainfall Total: 1.53 & 0.02 inches  
 Previous 48-hr Rainfall Total: 0.00 inches  
 Weather Station Norms from <http://www.atmos.washington.edu>  
 Actual Rainfall from Nashville Int Airport <http://www.weather.gov/climate>  
 Monthly Standard Deviation obtained online at NOAA Earth System Research Laboratory, Physical Sciences (<http://www.esrl.noaa.gov>)

### Calculation Based on Fairview Bowie Nature Center Actual Rainfall and Franklin Sewage Normals and Std. Deviations

#### Calculation of Normal Weather Conditions

		Long-Term Rainfall Records								
	Month	Minus one Std. Dev. (dry)	Normal (mean inches)	Plus One Std. Dev. (wet)	Actual Rainfall	Condition (dry, normal, wet)	Condition Value*	Month Weight Value	Condition Value Calculation	Std. Deviation
1st Month Prior	Feb	2.49902079	4.6	6.700979	10.78	wet	3	x 3	9	2.100979
2nd Month Prior	Jan	1.26927377	3.95	6.630726	5.61	normal	2	x2	4	2.680726
3rd Month Prior	Dec	2.58798223	5.37	8.152018	5.33	normal	2	x1	2	2.782018
								Sum=	15	

If sum is:	
6 to 9	then prior period has been drier than normal
10 to 14	then prior period has been normal
15 to 18	then prior period has been wetter than normal

Condition Value:*	
Dry=	1
Normal=	2
Wet=	3

**Record of Climatological  
Observations**  
These data are quality controlled and may not  
be identical to the original observations.  
Generated on 05/17/2022

Observation Time Temperature: 0800 Observation Time Precipitation: 0800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2021	12	01	64	39	49	0.00												
2021	12	02	66	47	51	0.18												
2021	12	03	70	48	49	0.00												
2021	12	04	72	49	58	0.00												
2021	12	05	60	48	60	0.00												
2021	12	06	68	55	55	1.25												
2021	12	07	55	24	25	0.00												
2021	12	08	43	24	30	0.00												
2021	12	09	51	30	42	0.00												
2021	12	10	60	42	56	0.14												
2021	12	11	71	56	60	0.95												
2021	12	12	61	26	30	0.00												
2021	12	13	61	26	37	0.00												
2021	12	14	59	36	42	0.00												
2021	12	15	67	42	53	0.00												
2021	12	16	66	52	57	0.00												
2021	12	17	66	50	50	1.40												
2021	12	18	62	50	62	0.70												
2021	12	19	67	36	36	0.10												
2021	12	20	45	25	28	0.00												
2021	12	21	47	28	38	0.00												
2021	12	22	49	30	33	0.00												
2021	12	23	40	26	37	0.00												
2021	12	24	60	30	54	0.00												
2021	12	25	66	54	66	0.00												
2021	12	26	72	54	57	0.00												
2021	12	27	67	57	66	0.00												
2021	12	28	67	58	61	0.03												
2021	12	29	69	54	54	0.12												
2021	12	30	63	50	52	0.46												
2021	12	31	59	49	59	0.00												
Summary			61	42		5.33		0.0										

Empty, or blank, cells indicate that a data observation was not reported.  
\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown  
"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation  
"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.  
"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.  
Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

**Record of Climatological  
Observations**  
These data are quality controlled and may not  
be identical to the original observations.  
Generated on 05/17/2022

Observation Time Temperature: 0800 Observation Time Precipitation: 0800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2022	01	01	70	59	70	0.01												
2022	01	02	75	43	45	0.90												
2022	01	03	75	25	26	0.39		2.0		2.0								
2022	01	04	30	22	23	0.00												
2022	01	05	43	23	42	0.00												
2022	01	06	53	28	29	0.00												
2022	01	07	29	12	12	0.61		6.1		6.0								
2022	01	08	35	11	35	0.00												
2022	01	09	51	11	51	0.70												
2022	01	10	52	21	26	0.70												
2022	01	11	41	21	23	0.00												
2022	01	12	43	23	40	0.00												
2022	01	13																
2022	01	14	57	28	35	0.00												
2022	01	15	51	35	36	0.01												
2022	01	16	42	32	32	0.75		2.0		2.0								
2022	01	17	32	27	30	0.25		0.1		1.0								
2022	01	18	33	25	27	0.00												
2022	01	19	45	27	43	0.12												
2022	01	20	55	21	21	1.14		0.2		0.0								
2022	01	21	23	16	20	0.00												
2022	01	22	30	11	21	0.00												
2022	01	23	35	11	27	0.00												
2022	01	24	49	26	37	0.00												
2022	01	25	58	32	32	0.00												
2022	01	26	37	16	16	0.00												
2022	01	27	34	16	24	0.00												
2022	01	28	49	24	31	0.00												
2022	01	29	40	13	15	0.03		0.7		T								
2022	01	30	40	15	32	0.00												
2022	01	31	53	27	27	0.00												
Summary			45	23		5.61		11.1										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

U.S. Department of Commerce  
National Oceanic & Atmospheric Administration  
National Environmental Satellite, Data, and Information Service  
Current Location: Elev: 860 ft. Lat: 35.9689° N Lon: -87.1364° W  
Station: FAIRVIEW BOWIE NAT CTR, TN US USC00402989

**Record of Climatological  
Observations**  
These data are quality controlled and may not  
be identical to the original observations.  
Generated on 05/17/2022

National Centers for Environmental Information  
151 Patton Avenue  
Asheville, North Carolina 28801

Observation Time Temperature: 0800 Observation Time Precipitation: 0800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2022	02	01	54	27	37	0.00												
2022	02	02	64	37	47	0.30												
2022	02	03	50	33	34	0.91												
2022	02	04	54	24	25	1.17												
2022	02	05	27	16	20	0.00												
2022	02	06	34	18	21	0.00												
2022	02	07	48	21	28	0.00												
2022	02	08	49	24	32	0.00												
2022	02	09	56	32	42	0.00												
2022	02	10	61	31	31	0.00												
2022	02	11	59	31	47	0.00												
2022	02	12	70	34	34	0.00												
2022	02	13	34	15	18	0.00												
2022	02	14	41	15	22	0.00												
2022	02	15	50	22	46	0.00												
2022	02	16	68	46	54	0.00												
2022	02	17	67	54	55	0.70												
2022	02	18	66	26	27	1.72												
2022	02	19	40	25	32	0.00												
2022	02	20	48	26	45	0.00												
2022	02	21	63	26	52	0.00												
2022	02	22	64	52	61	0.00												
2022	02	23	61	35	35	3.28												
2022	02	24	35	31	32	1.80												
2022	02	25	41	32	32	0.80												
2022	02	26	33	28	29	0.00												
2022	02	27	37	29	35	0.10												
2022	02	28	54	26	29	0.00												
Summary			51	29		10.78		0.0										

Empty, or blank, cells indicate that a data observation was not reported.  
\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown  
"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation  
"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.  
"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.  
Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.



U.S. Department of Commerce  
National Oceanic & Atmospheric Administration  
National Environmental Satellite, Data, and Information Service  
Current Location: Elev: 860 ft. Lat: 35.9689° N Lon: -87.1364° W  
Station: FAIRVIEW BOWIE NAT CTR, TN US USC00402989

**Record of Climatological  
Observations**  
These data are quality controlled and may not  
be identical to the original observations.  
Generated on 05/12/2022

National Centers for Environmental Information  
151 Patton Avenue  
Asheville, North Carolina 28801

Observation Time Temperature: 0800 Observation Time Precipitation: 0800

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth		
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2022	03	01	58	29	37	0.00												
2022	03	02	70	37	47	0.00												
2022	03	03	77	47	51	0.00												
2022	03	04	77	40	44	0.00												
2022	03	05	81	44	60	0.00												
2022	03	06	73	60	66	0.00												
2022	03	07	78	61	61	0.75												
2022	03	08	61	35	36	0.02												
2022	03	09	47	35	36	0.30												
2022	03	10	53	34	35	0.00												
2022	03	11	61	34	37	0.00												
2022	03	12	37	20	23	0.45		3.0		3.0								
2022	03	13	32	21	25	0.00												
2022	03	14	58	25	39	0.00												
2022	03	15	66	39	51	0.00												
2022	03	16	71	50	51	0.16												
2022	03	17	59	45	51	0.05												
2022	03	18	73	50	55	0.17												
2022	03	19	66	44	44	0.51												
2022	03	20	66	34	34	0.02												
2022	03	21	69	34	43	0.00												
2022	03	22	74	43	62	0.00												
2022	03	23	75	57	57	1.51												
2022	03	24	61	39	39	0.02												
2022	03	25	61	37	45	0.00												
2022	03	26	51	36	40	0.00												
2022	03	27	60	31	35	0.00												
2022	03	28	56	35	39	0.00												
2022	03	29	60	39	46	0.00												
2022	03	30	75	46	66	0.00												
2022	03	31	83	45	46	1.21												
Summary			64	40		5.17		3.0										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

APPENDIX 4:  
Hydrologic Determination  
Field Data Sheets

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Coleman Branch		Date/Time: 3/30/2022 13:25
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : D-25a
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.897962, -87.050069 To: 35.8959, -87.053133
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 17 acres	County: Williamson	
Soil Type(s) / Geology : Rockland; Baxter cherty silt loam, 20 to 30 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Coleman Branch		Date/Time: 3/30/2022 14:06
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : <b>D-31</b>
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.893371, -87.055983 To: 35.894579, -87.057982
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 28 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Coleman Branch		Date/Time: 3/30/2022 13:55
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : D-32
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.893073, -87.057003 To: 35.893608, -87.056875
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 6 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Coleman Branch		Date/Time: 3/30/2022 14:00
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : D-33
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		From: 35.892514, -87.057015 To: 35.893073, -87.057003
Precipitation this Season vs. Normal : abnormally wet   elevated   average   low   abnormally dry   unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 3.5 acres	County: Williamson	
Soil Type(s) / Geology : Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; font-size: small;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Coleman Branch		Date/Time: 3/30/2022 13:50
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-34
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		From: 35.893561, -87.054669 To: 35.893371, -87.055983
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 11.5 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Coleman Branch		Date/Time: 3/30/2022 10:54
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-35
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		From: 35.892737, -87.055264 To: 35.893324, -87.055662
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 2.7 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 10:10
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : <b>D-37</b>
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.899408, -87.049721 To: 35.899535, -87.050136
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 2.6 acres	County: Williamson	
Soil Type(s) / Geology : Mountview silt loam, shallow, 5 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe      Moderate      Slight      Absent		

### Primary Field Indicators Observed

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable)</b> = 13.75      OR      N/A

#### Justification / Notes :

No flow, macroinvertebrates, hydric soils, wetland plants in channel and water limited to small pools despite wetter than normal conditions. Residential yard and roadside ditch above site along with erosion from interior road crossing have limited infiltration and caused pools to persist (as opposed to almost all other features on site with completely forested watersheds). Historic logging impacts also evident.

## Secondary Field Indicator Evaluation

<b>A. Geomorphology</b> (Subtotal = 8 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
1. Continuous bed and bank	0	1 ✓	2	3
2. Sinuous channel	0	✓	2	3
3. In-channel structure: riffle-pool sequences	0	✓	2	3
4. Sorting of soil textures or other substrate	0	✓	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	✓	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	✓
13. At least second order channel on existing USGS or NRCS map	No = 0 ✓		Yes = 3	

<b>B. Hydrology</b> (Subtotal = 2.75 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	✓	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	

N/A  
N/A

<b>C. Biology</b> (Subtotal = 3 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in channel bed <sup>1</sup>	3	2	1 ✓	0
21. Rooted plants in the thalweg <sup>1</sup>	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. Macroinvertebrates (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	✓	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in channel bed <sup>2</sup>	0	0.5	1	1.5

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

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

Total Points = 13.75

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

### Notes :

1/3. Channel partly incised, but soil bed similar to soil profile; 3 areas with channel definition loss. 2. One minor bend, but straight within valley. 3. no riffles, pools at steps with runs between. 3. minor amount of eroded, randomly arranged gravel but no cobble. 4. 3 small headcuts. 11. no bedrock outcrops or large roots controlling erosion. 12. valley definition increases downslope. 14. no flow or evidence of seepage inputs (thalweg not saturated). 15. 3 small pools with standing water 16. 40% leaf litter 17. minor staining on leaves near pools. 18. in channel leaf packs only. 20. Fibrous roots every step except at pools. 21. shading but upland grasses, privet, and tree saplings common. 26. Filamentous algae at pools.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Inman Branch		Date/Time: 3/30/2022 10:15
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-38
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		From: 35.899535, -87.050136 To: 35.904099, -87.05739
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 86 acres	County: Williamson	
Soil Type(s) / Geology : <small>Baxter cherty silt loam, 20 to 30 percent slopes; Mountview silt loam, shallow, 5 to 12 percent slopes; Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne</small>		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae, obligate lotic snails, and fish.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 10:40
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : D-39
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.89971, -87.052126 To: 35.900213, -87.051898
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 6 acres	County: Williamson	
Soil Type(s) / Geology : Baxter cherty silt loam, 20 to 30 percent slopes; Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ OR ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 11:10
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :
Site Name/Description: Hargrove Road Property Entire Review Area		D-40
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		From: 35.902927, -87.053435 To: 35.902868, -87.053541
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 2 acres	County: Williamson	
Soil Type(s) / Geology : Bodine gravelly silt loam, 20 to 40 percent slopes; Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> = <span style="float: right;">OR ✓ N/A</span>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 11:15
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-41
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.903245, -87.054188 To: 35.903085, -87.054271
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 2 acres	County: Williamson	
Soil Type(s) / Geology : Bodine gravelly silt loam, 20 to 40 percent slopes; Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> = <span style="float: right;">OR ✓ N/A</span>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 10:54
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-42
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.901198, -87.055232 To: 35.902989, -87.055702
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 14 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/28/2022 13:45
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-43
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		From: 35.900915, -87.055029 To: 35.901198, -87.055232
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 4 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/28/2022 13:40
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-44
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.901846, -87.05742 To: 35.903318, -87.05663
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 15 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/28/2022 12:45
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-45
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		From: 35.902029, -87.057785 To: 35.902046, -87.057433
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 3 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> = 0                      OR      N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/28/2022 12:40
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-46
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.901901, -87.058277 To: 35.902029, -87.057785
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet   elevated   average   low   abnormally dry   unknown Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 1.7 acres	County: Williamson	
Soil Type(s) / Geology : Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/28/2022 13:00
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-47
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		From: 35.901433, -87.057272 To: 35.901846, -87.05742
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 5 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; font-size: small;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 11:30
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-48
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.902364, -87.05013 To: 35.904473, -87.051252
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 8 acres	County: Williamson	
Soil Type(s) / Geology : Baxter cherty silt loam, 20 to 30 percent slopes; Mountview silt loam, shallow, 5 to 12 percent slopes; Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest, roadside and residential yard		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe                      Moderate                      Slight                      Absent		

### Primary Field Indicators Observed

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable)</b> = 12.75                      OR                      N/A

#### Justification / Notes :

Historic logging ruts in middle of reach have caused some channel incision/erosion. Siltation at top of reach from interior road crossing and runoff from offsite yards and county road crossing above site. Single pool observed in otherwise dry channel. Discontinuous, erosional morphology present with no biology indicators or evidence of subsurface seepage connections.

## Secondary Field Indicator Evaluation

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

<b>B. Hydrology</b> (Subtotal = 2.25 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
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	

N/A  
N/A

<b>C. Biology</b> (Subtotal = 1 )	<b>Absent</b>	<b>Weak</b>	<b>Moderate</b>	<b>Strong</b>
20. Fibrous roots in channel bed <sup>1</sup>	3	2	1	0
21. Rooted plants in the thalweg <sup>1</sup>	3	2	✓	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. Macroinvertebrates (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in channel bed <sup>2</sup>	0	0.5	1	1.5

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

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

Total Points = 12.75

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

### Notes :

1,4. Channel partly incised but erosional with bed poorly differentiated from banks; loses definition in four locations. 2. straight down valley with one bend as valley turns. 3. no obvious riffle areas, primarily steps with runs. 4. randomly eroded cobble and some gravel. 8. some gravel accumulations at bottom of reach. 10. several small headcuts over long reach, but none exposing subsurface seepage 11. no bedrock or long term grade control roots. 12. Obvious steep-sided valley. 14. No evidence of subsurface flow connections. 15. Single pool near top of long reach. 16. 30-40% leaf litter. 17. silt at top of reach from interior access road crossing and from yards and paved road crossing above site. Minor accumulations on leaves at bottom of reach. 18. numerous leaf packs, but in-channel only. 20. fibrous roots from upland trees and herbs every step. 21. some shading but rooted upland herbs, saplings, and shrubs common.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 11:50
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-49
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.903957, -87.050219 To: 35.904473, -87.051252
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 7 acres	County: Williamson	
Soil Type(s) / Geology : Baxter cherty silt loam, 20 to 30 percent slopes; Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Inman Branch		Date/Time: 3/30/2022 11:55
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-50
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		From: 35.904473, -87.051252 To: 35.906718, -87.061326
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 193 acres	County: Williamson	
Soil Type(s) / Geology : Bodine gravelly silt loam, 20 to 40 percent slopes; Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne	Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>	
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> = <span style="float: right;">OR ✓ N/A</span>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae, obligate lotic snails, and fish.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 12:05
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-51
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.905631, -87.051309 To: 35.905457, -87.051756
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 3.8 acres	County: Williamson	
Soil Type(s) / Geology : <small>Baxter cherty silt loam, 20 to 30 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes; Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne</small>		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> = <span style="float: right;">OR ✓ N/A</span>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 12:10
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-52
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.906215, -87.051022 To: 35.905631, -87.051309
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 1.6 acres	County: Williamson	
Soil Type(s) / Geology : Baxter cherty silt loam, 20 to 30 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 12:15
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-53
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.905937, -87.052643 To: 35.905364, -87.052657
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 4.2 acres	County: Williamson	
Soil Type(s) / Geology : <small>Baxter cherty silt loam, 20 to 30 percent slopes; Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne</small>	Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>	
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> = <span style="float: right;">OR ✓ N/A</span>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 12:20
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-54
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.906243, -87.052725 To: 35.905937, -87.052643
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 2.4 acres	County: Williamson	
Soil Type(s) / Geology : Baxter cherty silt loam, 20 to 30 percent slopes; Mountview silt loam, shallow, 5 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 11:55
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-55
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.90605, -87.054396 To: 35.904947, -87.054343
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 2.9 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 11:40
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : <b>D-56</b>
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.90581, -87.056649 To: 35.904413, -87.058017
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 13 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 11:15
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : <b>D-57</b>
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.905408, -87.057901 To: 35.904976, -87.05757
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 3.2 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; font-size: small;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 11:45
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-58
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.906113, -87.056508 To: 35.90581, -87.056649
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 2.7 acres	County: Williamson	
Soil Type(s) / Geology : Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; font-size: small;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ OR ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Inman Branch		Date/Time: 3/30/2022 13:05
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-59
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.903382, -87.060034 To: 35.904476, -87.059054
Previous Rainfall (7-days) : 0.02 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 7.4 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe                      Moderate <del>Slight</del> Absent		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 11:20
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : D-60
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.90367, -87.062414 To: 35.905377, -87.066268
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 39 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 13:35
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-61
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.906115, -87.064465 To: 35.905274, -87.065346
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 5 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 12:45
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : D-62
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.904994, -87.064316 To: 35.904897, -87.064976
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 5 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> =                      OR ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 12:15
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-63
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.903711, -87.064743 To: 35.904069, -87.064468
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 4 acres		County: Williamson
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe                      Moderate <del>Slight</del> Absent		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 11:45
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-64
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.903336, -87.06287 To: 35.903424, -87.062959
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 3 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; width: 100%;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> = <span style="float: right;">OR ✓ N/A</span>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 11:05
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-65
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.903761, -87.062061 To: 35.90367, -87.062414
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 2.3 acres	County: Williamson	
Soil Type(s) / Geology : Greendale cherty silt loam, 2 to 12 percent slopes; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ OR ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 10:55
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-66
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.900943, -87.061049 To: 35.900297, -87.06658
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnorm <del>ally</del> ly wet    elevated    average    low    abnormally dry    unknown Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 18.5 acres		County: Williamson
Soil Type(s) / Geology : Rockland; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne    Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>		
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> =                      OR ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 12:15
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :
Site Name/Description: Hargrove Road Property Entire Review Area		D-67
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		From: 35.902012, -87.06243 To: 35.900118, -87.065243
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 21.5 acres	County: Williamson	
Soil Type(s) / Geology : Rockland; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :		
Severe                      Moderate <del>Slight</del> Absent		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> =                      OR ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 12:05
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-68
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.901644, -87.064493 To: 35.901259, -87.064186
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 3.5 acres	County: Williamson	
Soil Type(s) / Geology : Rockland; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>		
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination = Stream</b>
<b>Secondary Indicator Score (if applicable) =</b> <div style="float: right; text-align: right;">OR ✓ N/A</div>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 12:20
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : D-69
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.902223, -87.061487 To: 35.902012, -87.06243
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 3.5 acres	County: Williamson	
Soil Type(s) / Geology : Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.



# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 11:25
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-70
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.899336, -87.06388 To: 35.899817, -87.064302
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 59 acres	County: Williamson	
Soil Type(s) / Geology : Rockland; Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Stream
<b>Secondary Indicator Score (if applicable)</b> = <span style="float: right;">OR ✓ N/A</span>

#### Justification / Notes :

Historic logging resulted in minor erosion. Observed multiple populations of caddisfly larvae and obligate lotic snails.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 11:20
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID : D-71
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long: From: 35.899221, -87.063783 To: 35.899336, -87.06388
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 3.5 acres	County: Williamson	
Soil Type(s) / Geology : Bodine gravelly silt loam, 20 to 40 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; font-size: small;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT Arkansas Creek		Date/Time: 3/28/2022 10:50
Assessors/Affiliation: S. Samoray (1194-TN20), S. Mathes (1112-TN13) / BDY Environmental		Project ID :  D-72
Site Name/Description: Hargrove Road Property Entire Review Area		
Site Location: Hargrove Road east of its intersection with Pinewood Road, Franklin, TN		
HUC (12 digit): 051302040301 (South Harpeth River Upper)		Lat/Long:
Previous Rainfall (7-days) : 1.53 in Previous 7 Days; 0 in Previous 48 hours		From: 35.901599, -87.059436 To: 35.900943, -87.061049
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : Fairview Bowie Nature Center/The Antecedent Precipitation Tool/Franklin Sewage		
Watershed Size : 6.3 acres	County: Williamson	
Soil Type(s) / Geology : Rockland; Bodine gravelly silt loam, 20 to 40 percent slopes; Bodine gravelly silt loam, 5 to 12 percent slopes / Fort Payne		Source: <small>NRCS Web Soil Survey/USGS Fairview Geoquad</small>
Surrounding Land Use : Forest		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : <div style="display: flex; justify-content: space-around; text-align: center;"> <span>Severe</span> <span>Moderate</span> <span><del>Slight</del></span> <span>Absent</span> </div>		

### Primary Field Indicators Observed

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

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

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

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

<b>Overall Hydrologic Determination</b> = Wet Weather Conveyance
<b>Secondary Indicator Score (if applicable) =</b> _____ <b>OR</b> ✓ N/A

#### Justification / Notes :

Historic logging resulted in minor erosion. Channel completely dry despite wetter than normal conditions.

## APPENDIX 5: Photographs





3/30/2022 1:49:47 PM (-5.0 hrs) Dir=W Lat=-35.89357 Lon=-87.05467 WGS 1984

1

View of D-34 origin, facing upstream/northeast. Channels begin at scour.



3/30/2022 1:49:51 PM (-5.0 hrs) Dir=SE Lat=-35.89357 Lon=-87.05467 WGS 1984

2

View of D-34 origin, facing downstream/southwest. Channel begins at scour.



3/30/2022 1:51:11 PM (-5.0 hrs) Dir=N Lat=35.89351 Lon=-87.05481 WGS 1984

3

View of D-34 upper reach, facing upstream/northeast.



3/30/2022 1:51:19 PM (-5.0 hrs) Dir=S Lat=35.89351 Lon=-87.05481 WGS 1984

4

View of D-34 upper reach, facing downstream/southwest.





5

View of substrate within D-34 upper reach, facing down.



6

View of D-34 middle reach, facing upstream/east.



7

View of D-34 middle reach, facing downstream/west.



8

View of substrate within D-34 middle reach, facing down.





9

View of D-34 lower reach, facing upstream/east.



10

View of substrate within D-34 lower reach/end, facing down.



11

View of D-34 end, facing upstream/east.



12

View of D-34 end/D-31 origin, facing downstream/west. Stream D-31 begins at groundwater contact.





3/30/2022 2:06:05 PM (-5.0 hrs) Dir=ENE Lat=35.89343 Lon=-87.05621 WGS 1984

13

View of D-31 origin, facing upstream/east.



3/30/2022 2:06:11 PM (-5.0 hrs) Dir=SE Lat=35.89343 Lon=-87.05621 WGS 1984

14

View of substrate within D-31 origin, facing down. Algae, snails, caddisfly larvae in channel.



3/30/2022 2:07:33 PM (-5.0 hrs) Dir=ENE Lat=35.89353 Lon=-87.05667 WGS 1984

15

View of D-31 upper reach, facing upstream/east.



3/30/2022 2:07:37 PM (-5.0 hrs) Dir=S Lat=35.89353 Lon=-87.05667 WGS 1984

16

View of D-31 upper reach, facing downstream/west.





17

View of D-31 middle reach, facing upstream/southeast.



18

View of D-31 middle reach, facing downstream/northwest.



3/30/2022 2:01:08 PM (-5.0 hrs) Dir=NNE Lat=35.89439 Lon=-87.05795 WGS 1984

19

View of D-31 lower reach, facing upstream/southeast.



3/30/2022 2:01:02 PM (-5.0 hrs) Dir=N Lat=35.89439 Lon=-87.05795 WGS 1984

20

View of D-31 lower reach, facing downstream/north.





3/30/2022 2:16:18 PM (-5.0 hrs) Dir=W Lat=35.89462 Lon=-87.05799 WGS 1984

21

View of D-31 exiting site, facing upstream/south.



3/30/2022 2:16:23 PM (-5.0 hrs) Dir=S Lat=35.89462 Lon=-87.05799 WGS 1984

22

View of D-31 exiting site, facing downstream/north.



23

View of D-33 origin, facing upstream/south. No defined channel above determination point.



24

View of D-33 origin, facing downstream/north.





3/30/2022 1:49:52 PM (-5.0 hrs) Dir=WSW Lat=35.89252 Lon=-87.05702 WGS 1984

25

View of substrate and dry conditions within D-33 origin, facing down.



3/30/2022 1:51:28 PM (-5.0 hrs) Dir=SSW Lat=35.8929 Lon=-87.05707 WGS 1984

26

View of D-33 middle reach, facing upstream/south.



3/30/2022 1:51:32 PM (-5.0 hrs) Dir=WSW Lat=35.8929 Lon=-87.05707 WGS 1984

27

View of D-33 middle reach, facing downstream/north.



3/30/2022 1:51:35 PM (-5.0 hrs) Dir=WSW Lat=35.8929 Lon=-87.05707 WGS 1984

28

View of substrate within D-33 middle reach, facing down.





29

View of D-33 end/D-32 origin, facing upstream/south. Stream D-32 begins at seep below headcut.



30

View of D-33 end/D-32 origin, facing downstream/north.



31      View of substrate within D-32 origin, facing down. Pleurocerid snails and stone-building caddisfly larvae were observed.



32      View of D-32 middle reach, facing upstream/south.





33

View of D-32 middle reach, facing downstream/northeast.



34

View of D-32 end/confluence with D-31, facing upstream/south.



35

View of D-32 end/confluence with D-31, facing downstream/northeast.



36

View of D-35 origin, facing upstream/southeast. Channel begins at headcut, dry alluvial deposition observed.





37

View of D-35 middle reach, facing upstream/southeast.



38

View of D-35 middle reach, facing downstream/northwest.





3/30/2022 1:57:31 PM (-5.0 hrs) Dir=SSW Lat=99999 Lon=99999 WGS 1984

39

View of dry substrate within D-35 middle reach, facing down.



3/30/2022 2:03:04 PM (-5.0 hrs) Dir=SSW Lat=35.89326 Lon=-87.0557 WGS 1984

40

View of D-35 middle reach, facing upstream/southeast.



41

View of D-35 middle reach, facing downstream/northwest.



42

View of D-35 end, facing upstream/south.





43

View of D-35 end, facing downstream/northwest.



44

View of substrate within D-35 end, facing down.





45

View of D-36 origin, facing upstream/north northwest.



46

View of D-36 origin (moss in channel), facing downstream/south.



47

View of substrate and moss within D-36 origin, facing down.



48

View of D-36 middle reach, facing upstream/northeast.





49

View of D-36 middle reach, facing downstream/south.



50

View of D-36 lower reach, facing upstream/northeast.





51

View of D-36 lower reach, facing downstream/south.



52

View of substrate within D-36 lower reach, facing down.



53

View of D-25a origin/D-36 end, facing upstream/south. Stream D-25a begins at pool of water.



54

View of D-25a origin/D-36 end, facing downstream/south. Stream D-25a begins at pool of water.





55

View of D-25a upper reach, facing upstream/north northeast.



56

View of D-25a upper reach, facing downstream/southwest.





57

View of stone-building caddisfly larva observed within D-25a upper reach, facing down.



58

View of D-25a middle reach, facing upstream/northeast.



59

View of D-25a upper, losing reach, facing downstream/southwest.



60

View of D-25a lower reach, facing upstream/north northwest. Flow re-appears at headcut seep.





3/4/2022 3:49:39 PM (-5.0 hrs) Dir=SE Lat=35.8964 Lon=-87.05195 WGS 1984

61

View of D-25a lower reach, facing downstream/southwest.



3/4/2022 3:46:48 PM (-5.0 hrs) Dir=NNW Lat=99999 Lon=99999 WGS 1984

62

View of D-25a exiting 390-acre review area, facing upstream/north northwest.





63      View of D-25a exiting 390-acre review area (D-25a becomes D-25 in previous HD addressing 120-acre priority area), facing downstream/southeast. Dry channel downstream.



64      View of substrate within D-25a near end, facing down.



65

View of D-37 origin, facing upstream/east. Channel begin at headcut with pool, no flow.



66

View of D-37 origin, facing downstream/south.





67

View of substrate within D-37 origin, facing down.



68

View of D-37 middle reach, facing upstream/east.





3/30/2022 10:12:33 AM (-5.0 hrs) Dir= NW Lat=35.89948 Lon=-87.04998 WGS 1984

69

View of D-37 middle reach, facing downstream/northwest.



3/30/2022 10:16:39 AM (-5.0 hrs) Dir= ENE Lat=35.89955 Lon=-87.05008 WGS 1984

70

View of D-37 lower reach, facing upstream/southeast.



71

View of D-37 lower, facing downstream/northwest.



72

View of substrate within D-37 lower reach, facing down.





73

View of D-38 origin/ D-37 end, facing upstream/southeast. Stream D-38 begins at headcut.



74

View of D-38 origin, facing downstream/west northwest.





75 View of D-38 upper reach, facing upstream/southeast. Dry channel due to flow loss.



76 View of substrate within D-38 upper reach, facing down.



77      View of D-38 upper reach, facing downstream/northwest. Dry channel due to flow loss, sporadic trickle flow below.



78      View of D-38 middle reach, facing upstream/south. Flow begins at headcut seep. Sporadic trickle flow above headcut.





79

View of D-38 middle reach, facing downstream/west northwest.



80

View of substrate within D-38 middle reach. Wood- and stone-building caddisfly larvae and Pleurocerid snails observed.





81

View of D-38 lower reach, facing upstream/east southeast.



82

View of D-38 lower reach, facing downstream/west northwest.



83      View of substrate and wood-building caddisfly larva observed within D-38 lower reach, facing down.



84      View of D-38 end/confluence with D-50, facing upstream/south.





85

View of D-38 end/confluence with D-50, facing downstream/north.



86

View from D-39 origin, facing upstream/south.





87

View of D-39 origin, facing downstream/north.



88

View of dry substrate at D-39 origin, facing down.



89

View of D-39 middle reach, facing upstream/south.



90

View of D-39 middle reach, facing downstream/northeast.





91

View of substrate within D-39 middle reach, facing down.



92

View from D-39 end/confluence with D-38, facing upstream/south.





93

View of D-39 end/confluence with D-38 upper reach, facing downstream/north.



94

View of substrate within D-39 end, facing down.



95      View of D-40 origin, facing upstream/northeast. Stream begins at seep, no channel above, multiple net-building caddisfly larvae were observed.



96      View of D-40 end/confluence with D-38, facing downstream/south southeast.





97      View from D-41 origin, facing upstream/north northeast. Channel begins at trickle flow at seep under leaf litter.



98      View of D-41 origin, facing downstream/south.





99

View of substrate within D-41 origin, facing down.



100

View of D-41 middle reach, facing upstream/northeast.



101

View of D-41 middle reach, facing downstream/south.



102

View of dipteran larva and trickle flow within D-41 middle reach (stone- and net-building caddisfly larvae also observed), facing down.





103

View of D-41 end, facing upstream/north.



104

View of D-41 end/confluence with D-38, facing downstream/south southwest.





105

View from D-43 origin, facing upstream/southeast.



106

View of D-43 origin , facing downstream/west northwest.



107

View of substrate within D-43 origin, facing down.



108

View of D-43 middle reach, facing upstream/southeast.





109

View of D-43 middle reach, facing downstream/north northwest.



110

View of substrate within D- 43 middle, facing down.





111

View of D-43 lower reach, facing upstream/southeast.



112

View of D-43 lower reach, facing downstream/north northwest.



113

View of substrate within D-43 lower reach, facing down.



114

View of D-42 origin/D-43 end, facing upstream/southeast. Stream D-42 begins at small headcut seep.





115

View of D-42 origin/D-43 end, facing downstream/north.



116

View of D-42 upper reach, facing upstream/south southeast. Trickle flow above headcut.





117

View of D-42 upper reach, facing downstream/north northwest.



118

View of D-42 middle reach, facing upstream/south.



119

View of D-42 middle reach, facing downstream/north.



120

View of Pleurocerid snails and stone-building caddisfly larvae within D-42 lower reach, facing down.





121

View of D-42 end/confluence with D-38, facing upstream/east southeast.



122

View of D-42 end/confluence with D-38, facing downstream/northwest.





3/28/2022 12:42:30 PM (-5.0 hrs) Dir-S Lat=35.90199 Lon=-87.05829 WGS 1984

123

View from D-46 origin, facing upstream/southwest.



3/28/2022 12:42:39 PM (-5.0 hrs) Dir-NNE Lat=35.90199 Lon=-87.05829 WGS 1984

124

View of D-46 origin, facing downstream/northeast.



125

View of substrate within D-46 origin, facing down.



126

View of D-46 middle reach, facing upstream/southwest.





127

View of D-46 middle reach, facing downstream/northeast.



128

View of substrate within D-46 middle reach, facing down.





129

View of D-46 lower reach, facing upstream/southwest.



130

View of D-46 lower reach, facing downstream/northeast.



131

View of substrate within D-46 lower reach, facing down.



132

View of D-45 origin, facing upstream/southwest.





133

View of D-45 origin, facing downstream/northeast.



134

View of pool at D-45 origin, facing down.





135

View of small headcut seep within D-45 middle reach, facing upstream/southwest.



136

View of D-45 middle reach, facing downstream/northeast. Dry channel below headcut.



137

View of dry channel within D-45 lower reach, facing upstream/southwest.



138

View of substrate within D-45 lower reach, facing down.





139

View of D-45 end/confluence with D-44, facing downstream/north northeast.



140

View from D-47 origin, facing upstream/southeast. Strong fibrous roots in channel and road ruts above.



141

View of D-47 origin, facing downstream/northwest.



142

View of D-47 middle reach, facing upstream/southeast.





143

View of D-47 middle reach, facing downstream/west northwest.



144

View of D-47 lower reach, facing upstream/southeast.



145

View of D-47 lower, facing downstream/north.



146

View of substrate within D-47 lower reach, facing down.





147

View of D-44 origin/D-47 end, facing upstream/southeast. Stream D-44 begins at headcut/seep.



148

View of D-44 origin/D-47 end, facing downstream/northwest.



149

View of D-44 upper reach, facing upstream/southeast.



150

View of D-44 upper reach, facing downstream/west northwest.





151

View of Pleurocerid snails and multiple stone-building caddisfly larvae within D-44 upper reach, facing down.



152

View of D-44 middle reach, facing upstream/south southeast.



3/28/2022 1:03:19 PM (-5.0 hrs) Dir=NW Lat=35.90253 Lon=-87.05693 WGS 1984

153

View of D-44 middle reach, facing downstream/northeast.



3/28/2022 1:04:21 PM (-5.0 hrs) Dir=WNW Lat=35.90287 Lon=-87.05671 WGS 1984

154

View of D-44 lower reach, facing upstream/south southwest.





3/28/2022 1:04:25 PM (-5.0 hrs) Dir=NNW Lat=35.90287 Lon=-87.05671 WGS 1984

155

View of D-44 lower reach, facing downstream/northeast.



3/28/2022 1:05:58 PM (-5.0 hrs) Dir=S Lat=35.90316 Lon=-87.05668 WGS 1984

156

View of D-44 end/confluence with D-38, facing southwest.



3/28/2022 1:06:18 PM (-5.0 hrs) Dir=NNE Lat=35.90316 Lon=-87.05668 WGS 1984

157

View of D-44 end/confluence with D-38, facing downstream/north.



3/30/2022 11:31:30 AM (-5.0 hrs) Dir=SSE Lat=35.90245 Lon=-87.05015 WGS 1984

158

View of D-48 origin, facing upstream/east southeast.





159

View of D-48 origin, facing downstream/west southwest.



160

View of substrate within D-48 origin, facing down.



161

View of D-48 upper reach, facing upstream/east southeast.



162

View of D-48 upper reach, facing downstream/west northwest.





163

View of substrate within D-48 upper reach, facing down.



164

View of D-48 middle reach, facing upstream/south.



165

View of D-48 middle reach, facing downstream/north.



166

View of substrate within D-48 middle reach, facing down.





167

View of D-48 lower reach, facing upstream/south.



168

View of D-48 lower reach near end, facing downstream/north toward D-50.



169

View of substrate within D-48 lower reach, facing down.



170

View of D-49 origin, facing upstream/east.





171

View of D-49 origin, facing downstream/west northwest.



172

View of substrate within D-49 origin, facing down.



173

View of D-49 middle reach, facing upstream/east.



174

View of D-49 middle reach, facing downstream/west northwest.





175

View of substrate within D-49 end, facing down.



176

View of D-49 from end, facing upstream/southeast.



177

View of D-48 end, D-49 end, and confluence/D-50 origin, facing west.



178

View of D-48 end, D-49 end, and D-50 origin, facing upstream/south.





179

View of D-50 origin, facing downstream/north.



180

View of substrate and Pleurocerid snails and stone-building caddis at D-50 origin, facing down.



181

View of D-50 upper reach, facing upstream/east.



182

View of D-50 upper reach, facing downstream/west.





183

View of D-50 middle reach, facing upstream/northeast.



184

View of D-50 middle reach, facing downstream/southwest.



185

View of Pleurocerid snails and stone-building caddis with D-50 mid-lower reach, facing down.



186

View of D-50 lower reach, facing upstream/southeast.





187

View of D-50 lower reach, facing downstream/northwest.



188

View of D-50 exiting site, facing upstream/southeast.



189

View of D-50 exiting site, facing downstream/northwest.



190

View of D-52 origin, facing upstream/north.





191

View of D-52 origin, facing downstream/south.



192

View of substrate within D-52 origin, facing down.



193

View of D-52 middle reach, facing upstream/north.



194

View of D-52 middle reach, facing downstream/south.





3/30/2022 12:06:01 PM (-5.0 hrs) Dir= NW Lat=35.90572 Lon=-87.05128 WGS 1984

195

View of D-52 lower reach, facing upstream/northeast.



3/30/2022 12:06:05 PM (-5.0 hrs) Dir= NW Lat=35.90572 Lon=-87.05128 WGS 1984

196

View of D-52 lower reach, facing downstream/southwest.



197

View of D-52 end/D-51 origin, facing upstream/northeast. Stream D-51 begins at headcut with trickle flow.



198

View from D-51 origin/D-52 end, facing downstream/southwest.





199

View of headcut with seep within D-51 upper reach, facing upstream/northeast.



200

View of caddisfly larva within D-51 upper reach, facing down.



201

View of D-51 middle reach, facing upstream/northeast.



202

View of D-51 middle reach, facing downstream/southwest.





203

View of substrate within D-51 middle reach, facing down.



204

View of D-51 end, facing upstream/northeast.



205

View of D-51 end/confluence with D-50, facing downstream/southwest.



206

View from D-54 origin, facing upstream/northwest.





207

View of D-54 origin, facing downstream/southeast.



208

View of substrate within D-54 origin, facing down.



209

View of D-54 middle reach, facing upstream/northwest.



210

View of D-54 middle reach, facing downstream/southeast.





211

View of D-54 lower reach, facing downstream/southeast.



212

View of D-54 lower reach, facing upstream/north northwest.



213

View of D-53 origin/D-54 end, facing upstream/northwest.



214

View of D-53 origin/D-54 end, facing downstream/southeast.





3/30/2022 12:17:36 PM (-5.0 hrs) Dir=NNW Lat=35.9058 Lon=-87.05266 WGS 1984

215

View of seep under leaf litter within D-53 origin, facing down.



3/30/2022 12:16:04 PM (-5.0 hrs) Dir=SSW Lat=35.90559 Lon=-87.0525 WGS 1984

216

View of D-53 middle reach, facing upstream/northwest.



3/30/2022 12:15:38 PM (-5.0 hrs) Dir=N Lat=35.90559 Lon=-87.0525 WGS 1984

217

View of D-53 middle reach, facing downstream/southeast.



3/30/2022 12:16:19 PM (-5.0 hrs) Dir=N Lat=35.90559 Lon=-87.0525 WGS 1984

218

View of substrate within D-53 middle reach, facing down.





219

View of D-53 lower reach, facing upstream/north.



220

View of D-53 lower reach, facing downstream/southwest.



3/30/2022 12:26:51 PM (-5.0 hrs) Dir=ESE Lat=35.90552 Lon=-87.05245 WGS 1984

221

View of substrate within D-53 lower reach, facing down.



3/30/2022 12:26:40 PM (-5.0 hrs) Dir=SW Lat=35.90542 Lon=-87.05267 WGS 1984

222

View of D-53 end/confluence with D-50, facing downstream/southwest.





223

View of D-55 origin, facing upstream/north. Stream begins at seep with trickle flow.



224

View of D-55 origin, facing downstream/south.





225

View of substrate within D-55 origin, facing down.



226

View of D-55 middle reach, facing upstream/north.





227

View of D-55 middle reach, facing downstream/south.



228

View of substrate within D-55 middle, facing down.



229

View of D-55 lower reach, facing upstream/north.



230

View of D-55 lower reach, facing downstream/south.





3/30/2022 11:59:35 AM (-5.0 hrs) Dir=W Lat=35.90525 Lon=-87.05439 WGS 1984

231

View of D-55 end/confluence with D-50, facing upstream/north.



3/30/2022 11:45:41 AM (-5.0 hrs) Dir=NNW Lat=35.90613 Lon=-87.05656 WGS 1984

232

View from D-58 origin, facing upstream/northeast.



233

View of D-58 origin, facing downstream/south southwest.



234

View of D-58 middle reach, facing upstream/northeast.





235

View of D-58 middle reach, facing downstream/south southwest.



236

View of substrate within D-58 origin, facing down.





237

View of D-58 lower reach, facing upstream/northeast.



238

View of D-58 lower reach, facing downstream/south southwest.





239

View of D-58 end, facing upstream/northeast.



240

View of D-56 origin/D-58 end, facing downstream/south southwest. Stream D-56 begins at seep.





241

View of headcut within D-56 upper reach, facing upstream/northeast.



242

View of D-56 upper reach, facing downstream/southwest.





243 View of 2-lined salamander (*Desmognathus* sp. salamander also observed) within D-56 upper reach, facing down.



244 View of D-56 middle reach, facing upstream/northeast.



245

View of D-56 middle reach, facing downstream/southwest.



246

View of D-56 lower reach, facing upstream/north northeast.





247

View of D-56 lower reach, facing downstream/southwest.



248

View of D-56 end, facing upstream/north northeast.



249

View of D-56 end/confluence with D-50, facing downstream/southwest.



250

View of Pleurocerid snails and stone-building caddisfly larva within D-56 end/confluence with D-50, facing down.





251

View from D-57 origin, facing upstream/northwest.



252

View of D-57 origin, facing downstream/southeast. Stream begins at headcut, intermittent trickle flow below leaves.





253

View of D-57 middle reach, facing upstream/northwest. Trickle flow on bedrock.



254

View of D-57 middle reach, facing downstream/southeast.





255

View of substrate within D-57 middle reach, facing down.



256

View of D-57 lower reach, facing upstream/northwest.



257

View of D-57 lower reach, facing downstream/southeast. Losing reach below.



258

View of D-57 end/confluence with D-56, facing upstream/northwest.





259

View of D-59 origin, facing upstream/southwest.



260

View of D-59 origin, facing downstream/northeast.



261

View of substrate and pool within D-59 origin, facing down.



262

View of D-59 middle reach, facing upstream/southwest.





263

View of D-59 middle reach, facing downstream/northeast.



264

View of D-59 lower reach, facing upstream/southwest.



265

View of D-59 lower reach, facing downstream/northeast.



266

View of Pleurocerid snails and stone-building caddis within D-59 lower reach, facing down.





267

View of D-59 end/confluence with D-50, facing upstream/southwest.



268

View of D-59 end/confluence with D-50, facing downstream/northeast.



269

View from D-65 origin, facing upstream/northeast.



270

View of D-65 origin, facing downstream/southwest.





271

View of substrate within D-65 origin, facing down.



272

View of D-65 end, facing upstream/northeast.



273

View of D-65 end, facing downstream/southwest.



274

View of D-60 origin, facing down.





275

View of D-60 origin/D-65 end, facing upstream/northeast.



276

View of D-60 origin, facing downstream/southwest.



277

View of two species of stone-building caddisfly larvae within D-60 upper reach, facing down.



278

View of D-60 upper reach, facing upstream/northeast.





279

View of D-60 upper reach, facing downstream/southwest.



280

View of D-60 middle reach, facing upstream/east southeast.



281

View of D-60 middle reach, facing downstream/northwest.



282

View of D-60 lower reach, facing upstream/east.





3/28/2022 1:18:20 PM (-5.0 hrs) Dir=SSE Lat=35.90535 Lon=-87.06557 WGS 1984

283

View of D-60 lower reach, facing downstream/west.



3/28/2022 1:21:09 PM (-5.0 hrs) Dir=NNW Lat=35.90539 Lon=-87.06604 WGS 1984

284

View of D-60 exiting site, facing upstream/east.



285

View of D-60 exiting site, facing downstream/west.



286

View of D-61 entering site, facing upstream/northeast.





287

View of D-61 entering site, facing downstream/southwest.



288

View of D-61 middle reach, facing upstream/northeast.



289

View of D-61 middle reach, facing downstream/southwest.



290

View of D-61 end/lower reach, facing upstream/northeast.





291

View of D-61 end/confluence with D-60, facing downstream/southwest.



292

View from D-62 origin, facing upstream/east. Stream begins at seep beneath leaf litter.



293

View of D-62 origin, facing downstream/west.



294

View of substrate within D-62 origin, facing down.





295

View of D-62 middle reach, facing upstream/east.



296

View of D-62 middle reach, facing downstream/west.



297

View of D-62 lower reach/end, facing upstream/east.



298

View of Pleurocerid snails and stone-building caddis within D-62 lower reach, facing down.





299

View of D-62 end/confluence with D-60, facing downstream/west.



300

View of D-63 origin, facing upstream/southwest.



301

View of D-63 origin, facing downstream/northeast.



302

View of substrate within D-63 origin, facing down. Dry channel with soil gravel substrate.





303

View of D-63 middle reach, facing upstream/southwest.



304

View of D-63 middle reach, facing downstream/northeast.





305

View of D-63 lower reach, facing upstream/southwest.



306

View of D-63 lower reach, facing downstream/northeast.





3/28/2022 12:03:12 PM (-5.0 hrs) Dir=SSE Lat=35.90398 Lon=-87.06448 WGS 1984

307 View of substrate within D-63 lower reach, facing down. Dry channel with gravel substrate.



3/28/2022 12:02:06 PM (-5.0 hrs) Dir=WNW Lat=35.90394 Lon=-87.06428 WGS 1984

308 View of D-63 end/confluence with D-60, facing upstream/southwest.



3/28/2022 11:45:13 AM (-5.0 hrs) Dir=N Lat=35.90333 Lon=-87.06296 WGS 1984

309

View from D-64 origin, facing upstream/southeast. Stream begins at seep.



3/28/2022 11:45:22 AM (-5.0 hrs) Dir=S Lat=35.90333 Lon=-87.06296 WGS 1984

310

View of D-64 origin, facing downstream/northwest.





311

View of D-64 middle reach, facing upstream/southeast.



312

View of D-64 middle reach, facing downstream/northwest.



313 View of Pleurocerid snails, stone-buildings caddisfly larva, and planarians within D-64 middle reach, facing down.



314 View of D-64 end, facing upstream/southeast.





315

View of D-64 end/confluence with D-60, facing downstream/northwest.



316

View of D-69 origin, facing upstream/northeast.



317

View of D-69 origin, facing downstream/southwest.



318

View of substrate at D-69 origin, facing down.





319

View of D-69 middle reach, facing upstream/northeast.



320

View of D-69 middle reach, facing downstream/southwest.



321

View of D-69 lower reach, facing upstream/northeast.



322

View of D-69 lower reach, facing downstream/southwest.





323      View of D-67 origin/D-69 end, facing upstream/northeast. Stream D-67 begins at headcut with seepage at gravel-soil interface.



324      View of D-67 origin, facing downstream/southwest.



325

View of D-67 upper reach, facing upstream/northeast.



326

View of D-67 upper reach, facing downstream/southwest.





327

View of salamander (*Desmognathus* sp.) within D-67 upper reach, facing down.



328

View of D-67 middle reach, facing upstream/northeast.



329

View of D-67 middle reach, facing downstream/southwest.



330

View of D-67 lower reach, facing upstream/northeast.





3/28/2022 11:50:52 AM (-5.0 hrs) Dir=ENE Lat=35.90053 Lon=-87.06481 WGS 1984

331

View of D-67 lower reach, facing downstream/southwest.



3/28/2022 11:51:00 AM (-5.0 hrs) Dir=NE Lat=35.90053 Lon=-87.06481 WGS 1984

332

View of Pleurocerid snails and stone-building caddisfly larvae within D-67 lower reach, facing down.



3/28/2022 11:48:04 AM (-5.0 hrs) Dir=NE Lat=35.90024 Lon=-87.06526 WGS 1984

333

View of D-67 end, facing upstream/northeast.



3/28/2022 11:48:22 AM (-5.0 hrs) Dir=NE Lat=35.90024 Lon=-87.06526 WGS 1984

334

View of D-67 end/confluence with D-66, facing downstream/southwest.





335

View from D-68 origin, facing upstream/northwest. Stream begins at small headcut with seep.



336

View of D-68 origin, facing downstream/southeast.



3/28/2022 12:02:15 PM (-5.0 hrs) Dir=W Lat=35.90147 Lon=-87.06442 WGS 1984

337

View of D-68 middle reach, facing upstream/northwest.



3/28/2022 12:02:27 PM (-5.0 hrs) Dir=E Lat=35.90147 Lon=-87.06442 WGS 1984

338

View of D-68 middle reach, facing downstream/southeast.





339

View of substrate within D-68 middle reach, facing down.



340

View of D-68 end/confluence with D-67, facing upstream/northwest.



341

View of D-68 end/confluence with D-67, facing downstream/southeast.



342

View of D-72 origin, facing upstream/northeast.





343

View of D-72 origin, facing downstream/southwest.



344

View of D-72 middle reach, facing upstream/east northeast.



3/28/2022 10:53:58 AM (-5.0 hrs) Dir=WSW Lat=35.90114 Lon=-87.05992 WGS 1984

345

View of D-72 middle reach, facing downstream/southwest.



3/28/2022 10:55:41 AM (-5.0 hrs) Dir=W Lat=35.90087 Lon=-87.06082 WGS 1984

346

View of D-72 lower reach, facing upstream/northeast.





3/28/2022 10:55:38 AM (-5.0 hrs) Dir=W Lat=35.90087 Lon=-87.06082 WGS 1984

347

View of D-72 lower reach, facing downstream/southwest.



3/28/2022 10:56:26 AM (-5.0 hrs) Dir=NNE Lat=35.90084 Lon=-87.06103 WGS 1984

348

View of D-66 origin/D-72 end, facing upstream/northeast.



3/28/2022 10:56:39 AM (-5.0 hrs) Dir=SW Lat=35.90084 Lon=-87.06103 WGS 1984

349

View of D-66 origin/D-72 end, facing downstream/southwest.



3/28/2022 11:00:58 AM (-5.0 hrs) Dir=NW Lat=35.90057 Lon=-87.0619 WGS 1984

350

View of D-66 upper reach, facing upstream/northeast.





351

View of D-66 upper reach, facing downstream/southwest.



352

View of Pleurocerid snail (also observed stone- and net-building caddisfly larvae) and substrate within D-66 upper reach, facing down.



353

View of D-66 middle reach, facing upstream/northeast.



354

View of D-66 middle reach, facing downstream/southwest.





355

View of D-66 lower reach, facing upstream/southeast.



356

View of D-66 lower reach, facing downstream/west.



357

View of D-66 exiting site, facing upstream/east.



358

View of D-66 exiting site, facing downstream/west.





359

View of D-71 origin, facing upstream/southeast.



360

View of D-71 origin, facing downstream/northwest.



361

View of substrate within D-71 origin, facing down.



362

View of D-71 middle reach, facing upstream/southeast.





363

View of substrate within D-71 middle reach, facing down.



364

View of D-70 origin/D-71 end, facing upstream/southeast.



365

View of D-70 origin/D-71 end, facing downstream/northwest.



366

View of D-70 upper reach, facing upstream/southeast.





3/28/2022 11:26:13 AM (-5.0 hrs) Dir=SSW Lat=35.89951 Lon=-87.0639 WGS 1984

367

View of D-70 upper reach, facing downstream/northwest.



3/28/2022 11:26:41 AM (-5.0 hrs) Dir=SSE Lat=35.89951 Lon=-87.0639 WGS 1984

368

View of observed stone- and net-building caddisfly larvae within D-70 upper reach, facing down.



369

View of D-70 middle reach, facing upstream/southeast.



370

View of D-70 middle reach, facing downstream/northwest.





3/28/2022 11:28:39 AM (-5.0 hrs) Dir=SE Lat=35.89976 Lon=-87.06418 WGS 1984

371

View of D-70 end/lower reach, facing upstream/southeast.



3/28/2022 11:28:50 AM (-5.0 hrs) Dir=NNW Lat=35.89976 Lon=-87.06418 WGS 1984

372

View of D-70 end/confluence with D-66, facing downstream/northwest.