Appendix A

Public and Agency Comments Received on the Draft EA and TVA's Response to Comments

Appendix B

Natural Resources Field Review

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MEMORANDUM

TO: Tennessee Valley Authority

FROM: Frank Amatucci and Nick Carmean, Biologists, Nashville Office

DATE: 1/5/2021

FILE: **3609510**

RE: Summary of Environmental Features for the Silicon Ranch McKellar Solar Farm, Jackson, Madison County, Tennessee

1.0 Introduction

Barge Design Solutions, Inc. (Barge) has been retained by Silicon Ranch Corporation (Silicon Ranch) to perform an ecology survey on an approximate 934-acre proposed McKellar Solar Farm (Project Study Area), within the parcel numbers 47113 057097: 02600, 03100, 01300, 01305, 01306, and 01309 owned by the Johnson Family, as well as an expansion of an existing electric transmission utility line to the existing Jackson Energy Authority (JEA) Substation on James Lawrence Road in Madison County, TN for the purpose of identifying potential impacts to natural resources.

Prior to visiting the project study area, a resource review of available background site information was conducted using the U.S. Fish and Wildlife Service's (USFWS) National Wetland Inventory (NWI) database to determine if wetlands could be found within the area, as well as review with the Information for Planning and Consultation (IPaC) system for federally listed species. Topographic maps and the United States Geological Survey (USGS) National Hydrography Dataset (NHD) were also evaluated for potential jurisdictional waters. Additionally, major landscapes and vegetation units were identified using aerial imagery prior to surveying the study area, and again in the field before beginning field work.

Between May 11 to 14, 2020 and May 28 and 29, 2020, Barge biologists Nick Carmean and Frank Amatucci performed an onsite investigation for the McKellar Solar Farm Site. The investigation included the delineation of wetlands and watercourses, and identification of vegetation communities and habitat types that may be suitable for protected species with the state and federal agencies. The findings of this technical report are detailed below, and the following attachments are included subsequent to this report.

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- Attachment A – Figures
- Attachment B – NRCS Custom Soil Report
- Attachment C – Tables
- Attachment D – Wetland and Waterbody Data Forms
- Attachment E – Photo Summary
- Attachment F – USFWS IPaC Report

2.0 Site Description

The project study area consists of land located between James Lawrence Road and State Route 223, and additional land located south of Womack Lane and State Route 223. The site is primarily utilized for agriculture with portions of surrounding woodland in the rolling hill areas of the site, and two maintained residential areas along Womack Lane. A project Location Map depicting the area can be found in Attachment A, Figure 1. The project area has historically been utilized for agriculture and the surrounding land use consists of commercial facilities, residential homes, and fragmented woodlands. During the field investigations, cotton and corn was observed throughout the agricultural portion of the property.

The project study area is located north and south of Denmark Jackson Rd, Madison County, Jackson, Tennessee (Attachment A, Figure 1). This area falls within the Mississippi Valley Loess Plains (74) Tennessee ecoregion, and is further categorized into the Loess Plains (74b) physiographic regions of Tennessee. The project study area is within the Westover topographic quadrangle (Attachment A, Figure 2), and the project survey area is located within the HUC-12 South Fork Forked Deer River-Cub Creek (080102050305) and Johnson Creek (080102050303) Lower watersheds. These watersheds are ultimately located within the HUC-8 South Fork Forked Deer watershed (08010205), which is within the Mississippi River Basin (Attachment A, Figure 3).

3.0 Soils

Eighteen (18) soil units consisting of mostly erodible silt loams are identified on-site. Only three (3) soil units are considered hydric for Madison County, Tennessee. The Calhoun and Henry silt loams (Ca), Collins silt loam, 0 to 2 percent slopes, frequently flooded, brief duration (Cs), and Falaya silt loam (Fa) are rated as hydric for the project area, which account for 1.1-percent of the entire project study area. A Soil Map can be found within Attachment A, Figure 3, and a Custom Soil Resource Report from the NRCS can be found in Attachment B.

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4.0 Vegetation

The project area is largely utilized for agriculture and was observed to be planted with cotton and corn during the site investigations. Besides cotton and corn, some grasses and weedy vegetation were observed growing along the margins of the cropland. Additionally, there were two locations of maintained residential lawns. These grasses and weedy vegetation include foxtail grass (*Setaria pumila*), orchard grass (*Dactylus glomerata*), perennial ryegrass (*Lolium perenne*), rough cocklebur (*Xanthium strumarium*), morning glory (*Ipomoea purpurea*), red fescue (*Festuca rubra*), and common milkweed (*Asclepias syriaca*).

Native fragmented woodland was also observed in the drainage valleys and rolling hillsides of the project study area, adjacent to the leveled agricultural fields. This forest community ranges between early successional forest to secondary growth mixed hardwood forest. Dominant vegetation in the woodland portion of the project area include white ash (*Fraxinus americana*), southern red oak (*Quercus falcata*), bur oak (*Quercus macrocarpa*), slippery elm (*Ulmus rubra*), hackberry (*Celtis occidentalis*), red cedar (*Juniperus virginiana*), tulip poplar (*Liriodendron radicans*), sycamore (*Platanus occidentalis*), sweet gum (*Liquidambar straciflua*), black cherry (*Prunus serotina*), shagbark hickory (*Carya ovata*) and willow oak (*Quercus phellos*) in the tree stratum; honeysuckle (*Lonicera tartarica*), privet (*Ligustrum sinense*) and multiflora rose (*Rosa multiflora*) in the shrub/sapling stratum, and poison ivy (*Toxicodendron radicans*), Japanese honeysuckle (Lonicera japonica), jumpseed (*Polygonum virginianum*), Virginia creeper (*Parthenocissus quinquefolia*) and woodoats (*Chasmanthium latifolium*) in the herbaceous stratum.

5.0 Water Resources

5.1 Wetland Boundary Identification

Wetland determinations were conducted by Barge biologists through observing hydrophytic vegetation, hydric soils, and wetland hydrology according the U.S. Army Corps of Engineers' *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0*. Sample points were chosen based upon representative portions of the study area to confirm visual estimates of field indicators. The Atlantic and Gulf Coastal Plain Regional Wetland Determination Data Forms were completed at wetland and upland sample points (Attachment D). The boundaries of the wetlands were then marked in the field with pink flagging and coordinates were obtained with a GPS unit.

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5.2 Observed Wetlands

Eighteen (18) wetlands and pond features were observed within the project study area. Of which, thirteen (13) of the features were observed as man-made ponds, or a Palustrine Unconsolidated Bottom (PUB) feature. The remaining wetland systems were observed as either Palustrine Emergent (PEM), Palustrine Scrub-Shrub (PSS) or Palustrine Forested (PFO) wetland features. Each wetland or pond feature was verified with the positive identification of suitable hydrology, hydrophytic vegetation, and hydric soils. The locations of the delineated wetlands and ponds are provided in Figure 6 -- Existing Conditions Map (Attachment A), and Table 1 (Attachment C) details the location and acreage of each wetland, as well as a photograph of each individual feature is provided in Attachment E.

The 13 man-made pond features within the project study area were well established with vegetation along the margins of the open water. These ponds, such as WTLs-5, 11 and 18, were created adjacent to the agricultural fields and appeared to be used for irrigation or pasture land use. WTLs 14 and 17 were observed with duck boxes raised above the surface of the water and are likely utilized for duck hunting. Nearly all the delineated man-made ponds were observed with raised berms to contain the surface water and no culverts were observed to convey excess waters into adjacent streams or drainages. Oftentimes, seepages at the bases of the berm walls, or upland sheet flow, indicated likely drainage into nearby drainage channels.

The remaining five (5) wetland features were determined as semi-natural PEM, PSS and PFO ecological communities. WTLs-7, 8, 9, 10 and 12 were entirely PEM or PFO wetland within the project study area and were not fringes to pond complexes. In other instances, portions of WTLs-11, 13b and 15b had separated areas of PFO and PEM wetland. These semi-natural wetland communities were observed beyond the current limits of agricultural land use and were likely impacted during the creation of the farmland.

Nearly all the wetland and pond features were determined to be likely jurisdictional by USACE and the Tennessee Department of Environment and Conservation (TDEC) due to the presence of a surface, or sub-surface, connection to other Waters of the United States (WOTUS). However, WTLs-1, 4, 10a and 10b are potentially isolated due to a lack of connection to other WOTUS either through a stream or conveyance feature. These isolated wetlands are likely jurisdictional per TDEC but will not be jurisdictional per the USACE.

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5.3 Waterbody Identification

Perennial and intermittent streams were field verified as waters of the U.S. (WOTUS) based on the existence of biology, geomorphology (i.e. defined bed and bank, Ordinary High-Water Mark (OHWM)) and hydrology. For the purpose of this report, all ephemeral drainages were characterized by the presence of two (2) or more OHWM indicators using the *2005 USACE Regulatory Guidance Letter 05-05* and proximity to other adjoining jurisdictional features (i.e. wetlands and/or intermittent or perennial streams). Streams located within the project study area were verified and coordinates of the centerline were obtained with a GPS unit.

Additionally, all waterbody and/or non-wetland features were analyzed with TDEC's "Guidance for Making Hydrologic Determinations" to accurately determine the jurisdictional status of waters of the state. Hydrologic determinations were conducted by Nick Carmean (TN-QHP #1178-TN18) and Frank Amatucci (QHP-IT). The TDEC HD Field Data Sheets for all observed streams and wet weather conveyances are provided in Attachment D.

5.4 Observed Waterbodies

Lead Scientist Nick Carmean (TN-QHP #1178-TN12) and Frank Amatucci (QHP-IT), conducted the Hydrologic Determination (HD) site investigation in accordance with TDEC Rule 0400-40-17-.04. In addition, water features were considered regarding the Regulatory Guidance Letter No. 05-05. The site visit was conducted more than 48 hours following a significant rain event of greater than 1.0 inch. Upon commencement of the study, in the preceding 7-days 1.44-inches of rain was observed between the May 11 to 14, 2020 site visit and 1.40-inches between the May 28 and 29, 2020 site visit. In the preceding two weeks, 1.68-inches and 1.69-inches of rain were observed, respectively. The precipitation for the preceding three months is considered "normal" based on the 30-year normal, as shown in Table 4 (Attachment B).

Eighteen (18) perennial and intermittent streams (STR) jurisdictional to TDEC and the USACE were delineated within the project study area. All streams were determined as perennial or intermittent due to the presence of aquatic fauna such as amphibian larvae and/or fish other than mosquito fish (*Gambusia* spp.), visual indicators of groundwater table point sources, a presence of a defined bed and bank with an OHWM, and a TDEC HD score of greater than 19. Below are brief descriptions of the delineated streams within the project study area. A photograph of each individual feature is provided in Attachment E and Table 2 (Attachment C) details the location and length of the streams.

STRs-1 thru 6 and STRs-11 and 12 are all unnamed tributaries to Cub Creek and are within the South Fork Forked Deer River-Cub Creek lower watershed. STRs-7 thru 10 and STR-14 are unnamed tributaries to Johnson Creek and its lower watershed. The locations of the described streams are provided in Figure 6 -- Existing Conditions Map (Attachment A).

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STR-13 (Cub Creek) and the lower portion of STR-1(b) were determined to be perennial streams due to the presence of fish that were not mosquito fish. These streams were observed with minimal surface flow and stream beds of saturated sand and clay. The remaining delineated stream features (STRs-1a thru 12 and 14) were observed as intermittent with varying channel substrates. STR-1a and the lower portion of STR-3 were observed with a sand bottom, underlain with clay, and the remaining streams were observed with hard clay and silty-clay-loam substrates. All the intermittent streams were observed with a connection to the groundwater table through observable seepages, moderate to strong indicators of substrate sorting, and some were observed with a presence of amphibian larvae and adult frogs.

Forty-seven (47) wet weather conveyances (WWC) were delineated with the project study area. All WWCs were determined based on secondary indicators while conducting the HD, some of which resemble ephemeral streams and upland drainage swales. Below are brief descriptions of the delineated WWCs within the project study area. Table 3 (Attachment C) details the location and length of the drainages.

WWCs-1 thru 28 and WWCs-42 thru 47 drain within the South Fork Forked Deer River-Cub Creek lower watershed and were observed with a likely surface water connection to a delineated perennial or intermittent stream within the project study area. WWCs-29 thru 41 drain within the Johnson Creek lower watershed and were also observed with likely surface water connections with delineated stream features.

Thirty-six (36) of the 47 WWCs can be considered as ephemeral streams. These ephemeral channels were observed with a presence of a bed and bank, an OHWM and some sorting of soil textures. Nearly all the delineated ephemeral channels were observed with small to medium sized headcuts and a bottom of silty-clayey substrate with little to no vegetation in the thalweg.

The remaining 11 WWCs were considered as upland drainage swales. These drainages were observed with a lack of an OHWM and somewhat of a presence of a bed and bank. These features also lacked substrate sorting and at times contained a high presence of vegetation in the thalweg with high densities of fibrous roots in the channel. Some channels, such as WWC-44, resembled relic channels of potential stream features, that have been historically altered to create a farm pond or catch basin (WWC-46).

The locations of the described WWCs are provided in Figure 6 -- Existing Conditions Map (Attachment A). A photograph of each individual feature is provided in Attachment D and Table 2 (Attachment B) details the location and length of the streams. The TDEC Hydrologic Determination Field Data Sheets for all observed WWCs are provided in Attachment D.

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6.0 Wildlife

While most of the project area is active cropland, wildlife was observed. Identified wildlife were observed utilizing the fragmented forested portions of the site, the inspected wetland and stream ditches, the residential areas and surrounding industrial environments. Table 6.0 below details some of the observed wildlife during the field investigations. This list is a preliminary species presence list for the project study area.

TABLE 6.0: Observed Wildlife within the Project Area

Common Name	Scientific Name
Birds	
American robin	*Turdus migratorius*
Carolina chickadee	*Poecile carolinensis*
Blue jay	*Cyanocitta cristata*
Broad-winged hawk	*Buteo platypterus*
Cooper's hawk	*Accipiter cooperii*
Dark-eyed junco	*Junco hyemalis*
European starling	*Sturnus vulgaris*
Field sparrow	*Spizella pusilla*
Great blue heron	*Ardea herodias*
House finch	*Haemorhous mexicanus*
Killdeer	*Charadrius vociferus*
Red-winged black-bird	*Agelaius phoeniceus*
Eastern towhee	*Pipilo erythrophthalmus*
Northern cardinal	*Cardinalis cardinalis*
Northern mockingbird	*Mimus polyglottos*
Red-bellied woodpecker	*Melanerpes carolinus*
Tufted titmouse	*Baeolophus bicolor*
Red tailed hawk	*Buteo jamaicensis*
Wood thrush	*Hylocichla mustelina*

Common Name	Scientific Name
Mammals	
Eastern chipmunk	*Tamias striatus*
Eastern gray squirrel	*Sciurus carolinensis*
White-tailed deer	*Odocoileus virginianus*
Racoon	*Procyonidae lotor*
Opossum	*Didelphis virginiana*
Coyote	*Canis latrans*
Reptiles	
Eastern black kingsnake	*Lampropeltis nigra*
Ground skink	*Scincella lateralis*
Amphibians	
Green frog	*Lithobates clamitans*
American toad	*Anaxyrus americanus*
Gray treefrog	*Hyla versicolor*
Fish	
Green sunfish	*Lepomis cyanellus*
Minnow spp.	--
Invertebrates	
Viceroy	*Limenitis archippus*
Monarch	*Danaus plexippus*

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6.1 *Federal and State Listed Species*

Tennessee Valley Authority (TVA) provided a preliminary heritage database query for the project study area and within the surrounding area, the county, and watersheds. No state or federally listed species were observed during the May 2020 site inspection. Table 6.1 details some of the potentially present federal and state protected species for the area.

TABLE 6.1: Protected Species Potentially within the Project Area

Common Name	Species	State Status	Federal Status	Habitat Type	Habitat Present (Y/N)
Fish					
Firebelly Darter	*Etheostoma pyrrhogaster*	Need of Management		Small to medium perennial streams with a course substrate	N
Northern Madtom	*Noturus stigmosus*	Need of Management		Moderate to large streams with swift currents	N
Naked Sand Darter	*Ammocrypta beani*	Need of Management		Large perennial streams with shifting sand substrate	N
Plants					
Whorled Sunflower	*Helianthus verticillatus*	Endangered	Endangered	Roadsides, wooded edge of creeks, edges of fields, old fields, and hay fields, All in areas of Falaya silt loam Soils (SCS Soil Survey).	N

Perennial streams were encountered within the project study area. Cub creek (STR-13) and STR-1b were inspected as perennial streams. However, they were observed with little to no surface water above the saturated sandy channel bottom, not preferred by the listed fish species above. Therefore, the state listed fish species for the project area are not anticipated to be impacted with the development of the solar farm.

Approximately 0.1-percent of the project study area contains Falaya silt loam (Fa) soils. This area is located adjacent to State Route 223 near WTL-13b. No whorled sunflowers were observed in this portion of the project study area during the May 2020 visit. A presence/absence survey during the whorled sunflower flowering season (August to September) might be required to determine potential impacts to the species, or non-thereof. Currently, impacts to federally listed whorled sunflower are unlikely.

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6.2 Federally Listed Bat Species

As provided in the USFWS IPaC report (Attachment F), two (2) federally listed mammalian species are potentially present within the project study area. The USFWS commonly protects federally listed bat species, which can be present within Madison County. A preliminary list of these species that may be affected by the proposed development activities are summarized in Table 6.2 below.

TABLE 5.1: Federally Protected Species Potentially within the Project Area

Common Name	Scientific Name	Federal Status	Habitat Type	Habitat Present (Y/N)
Northern long-eared bat	*Myotis septentrionalis*	Threatened	Hibernates during winter in caves, or occasionally in abandoned mines. Summer roosting season in late spring and summer months. Females will roost on trees with exfoliating bark, and/or trees with cracks, crevices, and hollows. Will rarely roost in barns or other similar shed-like structures	Y (Roost)
Indiana bat	*Myotis sodalis*	Endangered	Hibernates during winter in caves, or occasionally in abandoned mines. Summer roosting season in late spring and summer months. Females will roost on trees with exfoliating bark and/or trees with cracks, crevices, and hollows	Y (Roost)

Suitable habitat for the Indiana bat (*Myotis sodalis*) and the northern long-eared bat (*Myotis septentrionalis*) was noted during the field inspection. A total of 27 potential bat roost trees were observed and documented within the fragmented wooded portions of the project area and are identified on the Existing conditions Map (Attachment A, Figure 6). No suitable caves or potential hibernacula sites for all the federally listed bat species were observed within the project area.

Based on the current design of the solar farm within the project study area, approximately 221-acres of the wooded area will potentially require tree removal for the development of the site. As proposed, 25 of the 27 observed potential bat roost trees will require removal. Since no hibernacula for these federally listed bat species were observed within the project study area, removal of these potential roost trees can be performed during the non-root season (November to March) with little to no impact to the species.

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Eighteen (18) wetlands, 14 perennial and intermittent streams, and 47 wet weather conveyances were identified during the field investigation of the project study area. The Existing Conditions Map (Figure 6, Attachment A) visually represents the jurisdictional boundaries of the wetlands and non-wetland waters delineated within and immediately adjacent to the project study area. Tables 1 thru 3 also summarize the current location, square footage, or linear feet, and any additional characteristic of the features. Currently, all features are under review with TDEC and the USACE.

If you have any questions or require additional information, please contact me by phone at 615-252-4406 or email at Frank.Amatucci@bragedesign.com or Nick Carmean at 615-252-4306 or Nick.Carmean@bargedesign.com. Thank you!

Sincerely,

Frank Amatucci
Biologist – Site Solutions
Barge Design Solutions, Inc.

cc: Matt Clabaugh, Barge Design Solutions, Inc.
Annie Bavis, Barge Design Solutions, Inc.
Nick Carmean, Barge Design Solutions, Inc.
Katie McKeel, Barge Design Solutions, Inc.

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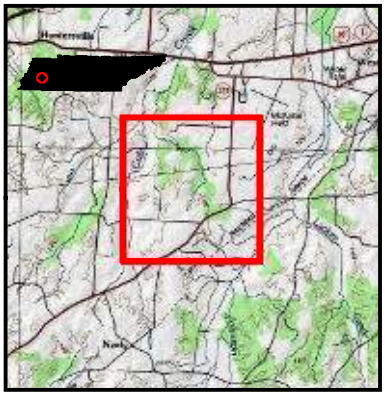
Attachment A – Figures



Proposed Electric Easement

Project Study Area

N

1 inch = 1,500 feet

0 310 620 1,240 1,860

Feet

Basemap: ESRI World Imagery
Source Data: TN ROADS

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
PROJECT LOCATION MAP

PROJ NO: 3609510

DATE: November 2020

FIGURE 1

BARGE DESIGN SOLUTIONS
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SILICON RANCH

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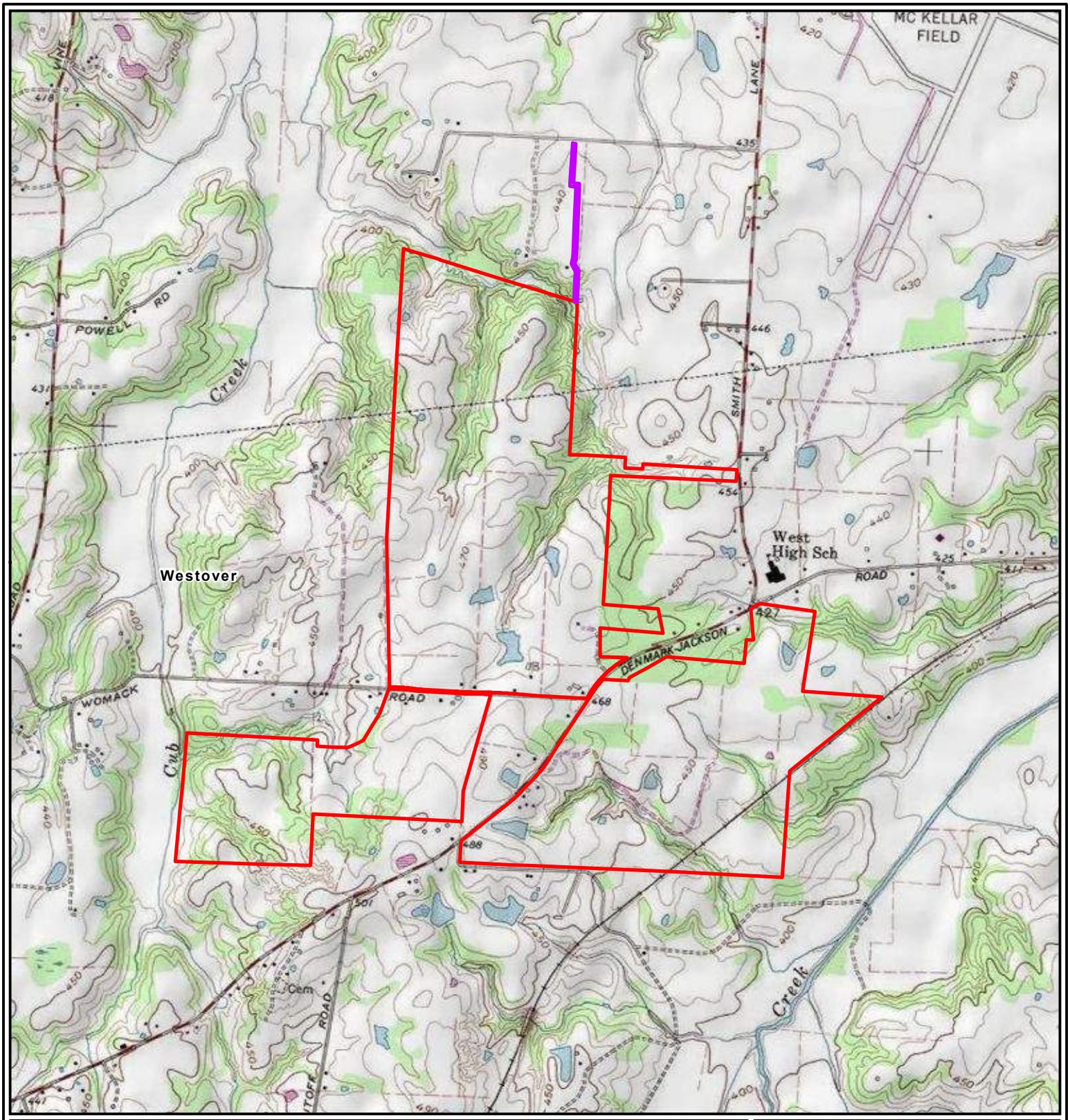

WESTOVER 7.5 MINUTE QUADRANGLE

Project Study Area
Proposed Electric Easement
USGS 24k Topo Map Boundary

N

1 inch = 2,000 feet

0 500 1,000 2,000 3,000 Feet

Basemap: ESRI USA Topo Map
Source Data: ESRI 24K Boundaries

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
USGS TOPOGRAPHIC MAP

PROJ NO: 3609510

DATE: November 2020

FIGURE 2

BARGE DESIGN SOLUTIONS
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SILICON RANCH

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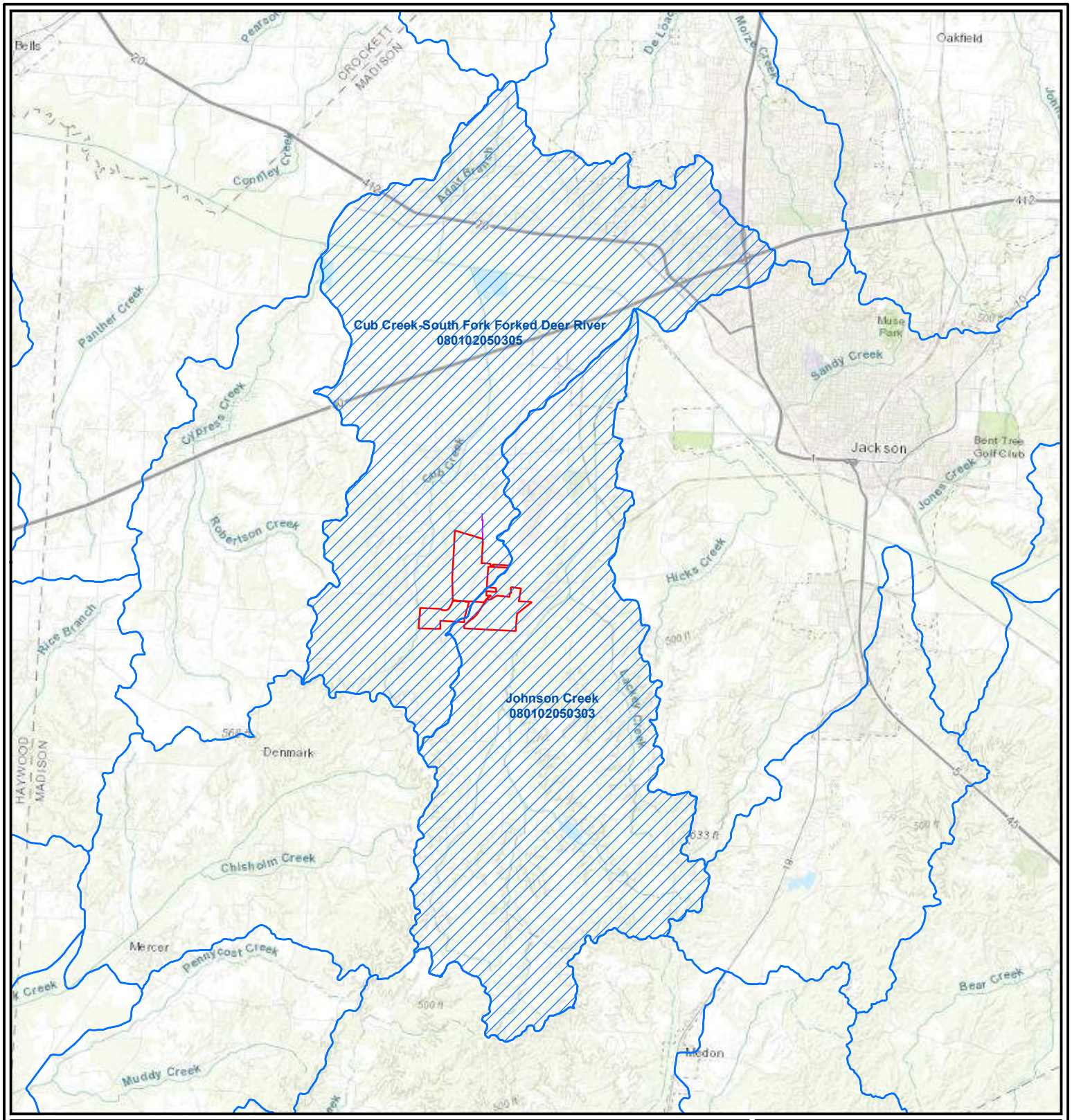

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
HUC 12 WATERSHED MAP

PROJ NO: 3609510

DATE: November 2020

FIGURE 3

BARGE DESIGN SOLUTIONS
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SILICON RANCH

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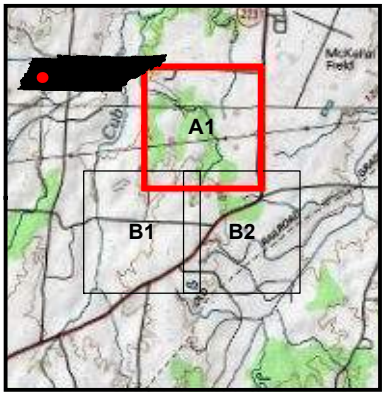

Project Soils

Soil Unit

Ca	FcB2	LoB	Soil Unit
Co	GrB	LoB3	Project Study Area
Cs	GrB3	PrC3	Proposed Electric Easement
Fa	LeC3	PrD3	
FcB	LeD	SmE	
	LeD3	SmF	
	LmE3	W	

1 inch = 800 feet

0 165 330 660 990 Feet

N

Basemap: ESRI World Imagery
Source Data: USDA Soil Survey TN113

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
PROJECT SOIL MAP

PROJ NO: 3609510

DATE: November 2020

FIGURE 4-A1

BARGE DESIGN SOLUTIONS
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SILICON RANCH

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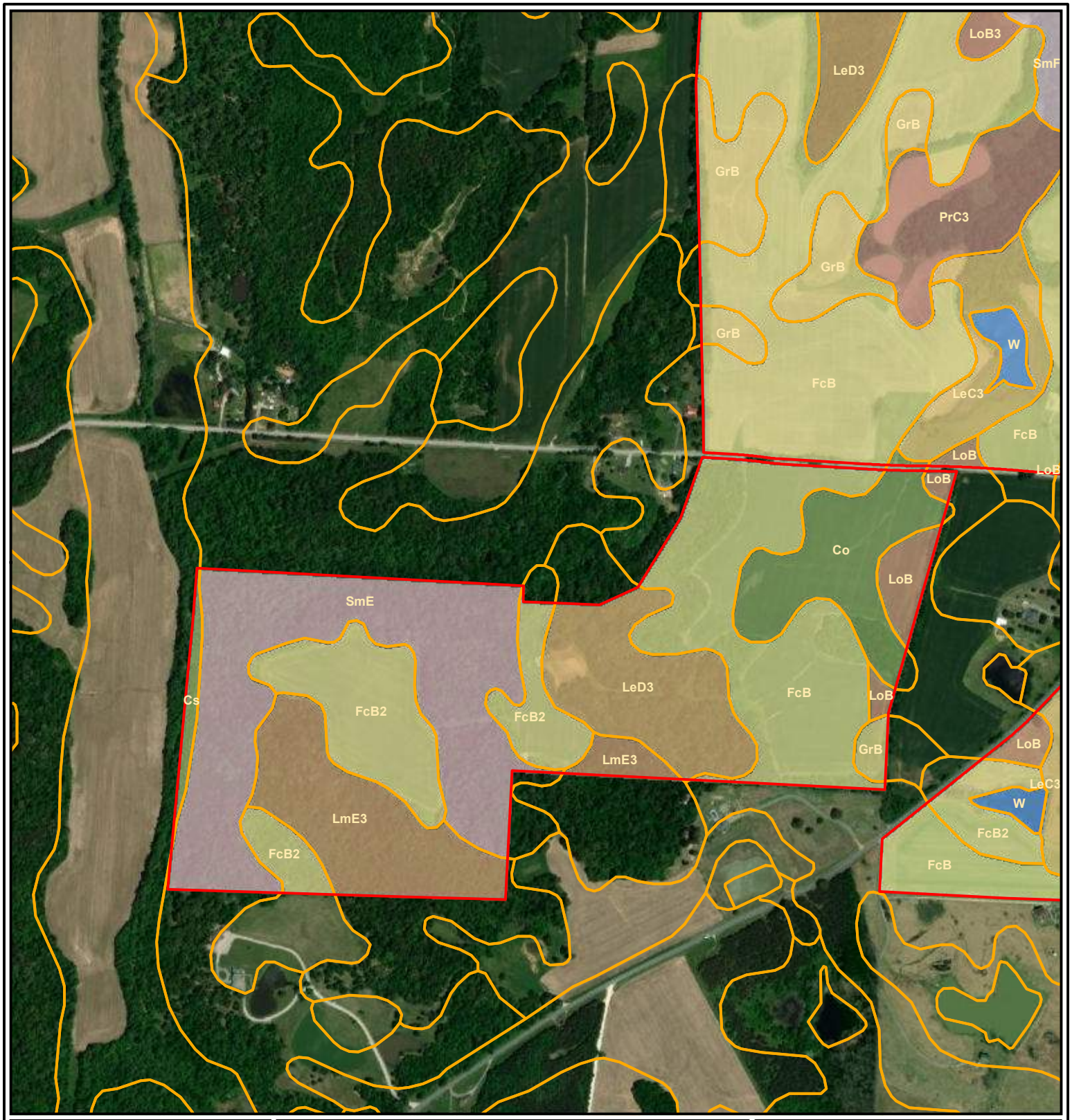

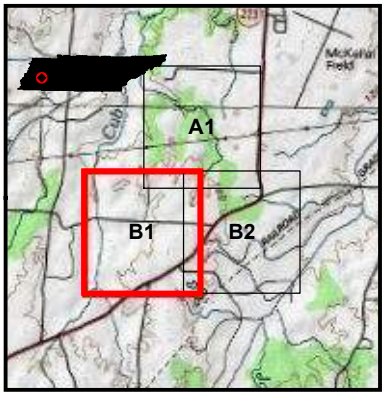

Project Soils

Soil Unit

Ca	FcB2	LoB	W
Co	GrB	LoB3	
Cs	GrB3	PrC3	
Fa	LeC3	PrD3	
FcB	LeD	SmE	
	LeD3	SmF	
	LmE3		

Soil Unit

Project Study Area

Proposed Electric Easement

N

1 inch = 800 feet

0 165 330 660 990 Feet

Basemap: ESRI World Imagery
Source Data: USDA Soil Survey TN113

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
PROJECT SOIL MAP

PROJ NO: 3609510

DATE: November 2020

FIGURE 4-B1

BARGE DESIGN SOLUTIONS
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SILICON RANCH

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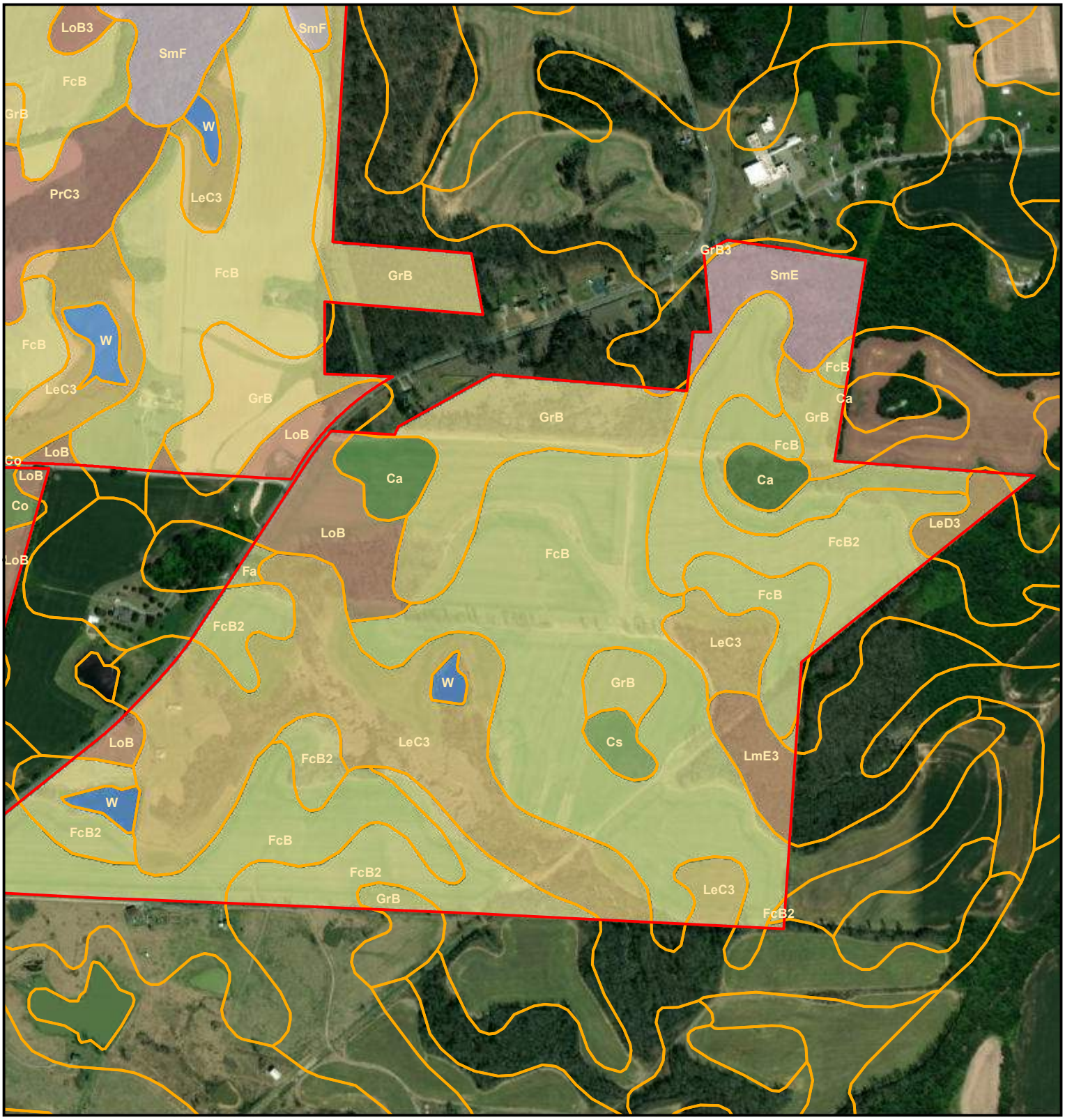
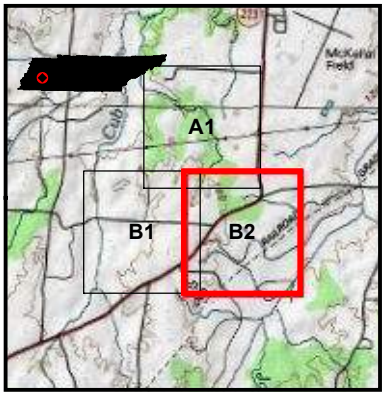




Project Soils

Soil Unit

- Ca
- Co
- Cs
- Fa
- FcB
- FcB2
- GrB
- GrB3
- LeC3
- LeD
- LeD3
- LmE3
- LoB
- LoB3
- PrC3
- PrD3
- SmE
- SmF
- W

- Soil Unit
- Project Study Area
- Proposed Electric Easement

N

1 inch = 800 feet

0 165 330 660 990 Feet

Basemap: ESRI World Imagery
Source Data: USDA Soil Survey TN113

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
PROJECT SOIL MAP

PROJ NO: 3609510

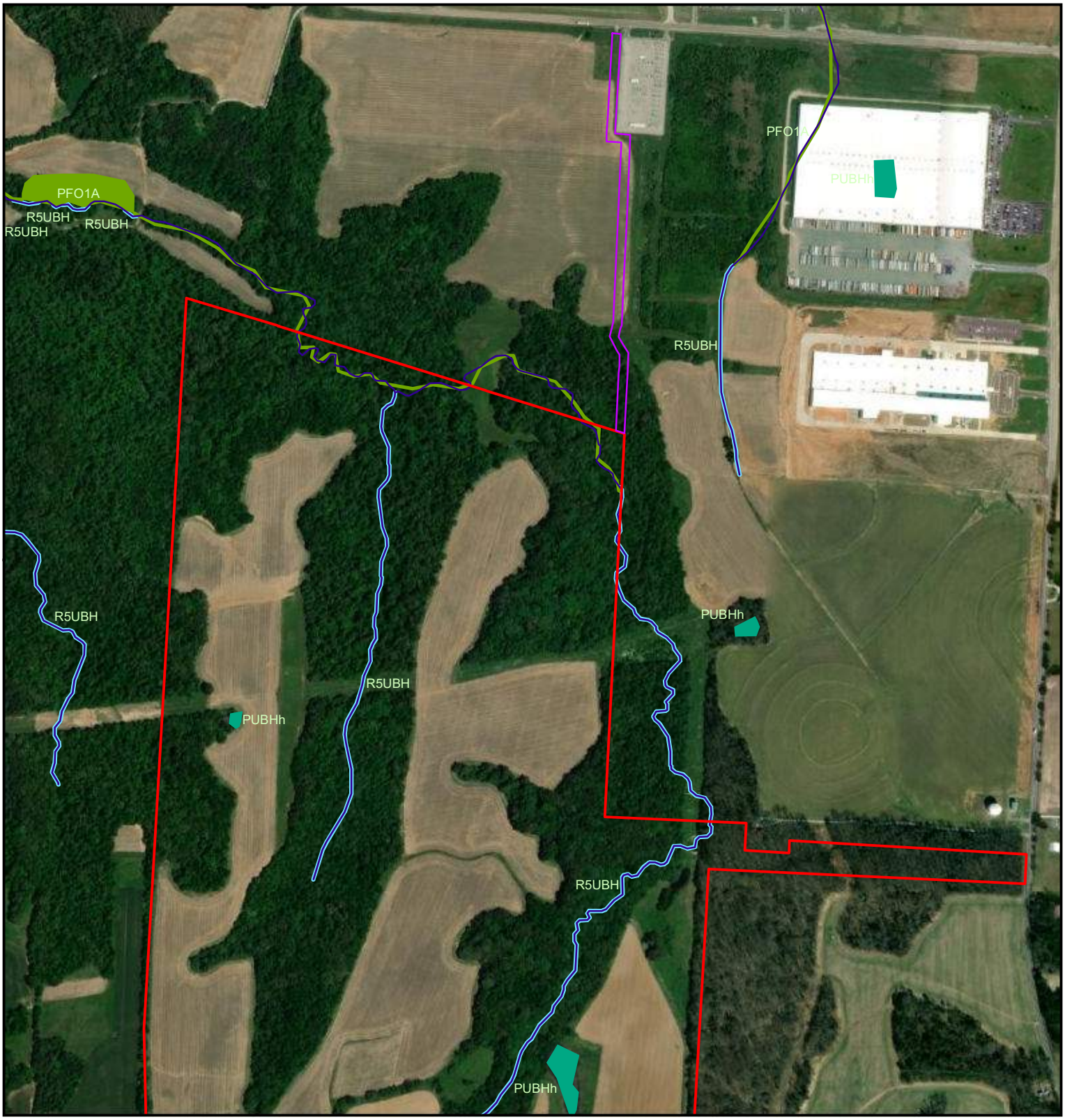
DATE: November 2020

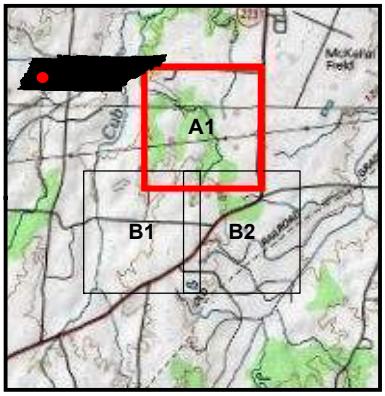
FIGURE 4-B2

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\TVA_Memo\2020-11-12_Updates\Figure4_SoilMap.mxd





NWI Wetland

Wetland Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

NHD Flowline

Feature Type

- StreamRiver

Project Study Area

Proposed Electric Easement

N

1 inch = 800 feet

0 150 300 600 900 Feet

Basemap: ESRI World Imagery
Source Data: USFWS NWI Wetland, USGS NHD Flowline

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
NATIONAL WETLANDS INVENTORY MAP

PROJ NO: 3609510

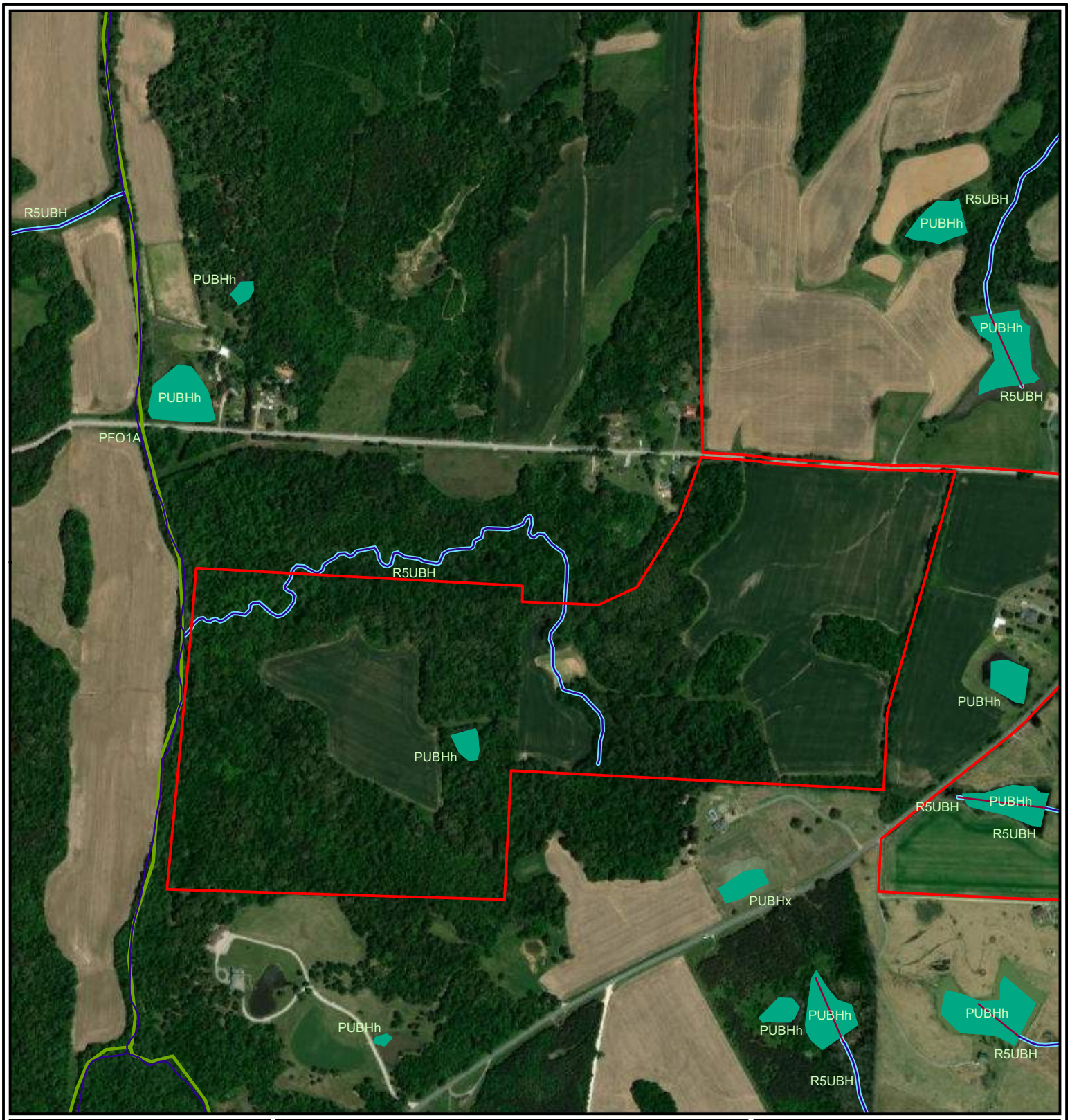
DATE: November 2020

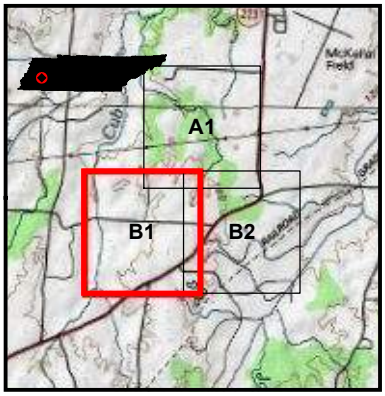
FIGURE 5-A1

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\TVA_Memo\2020-11-12_Updates\Figure5_NWI_Map.mxd





NWI Wetland

Wetland Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

NHD Flowline

Feature Type

- ArtificialPath
- StreamRiver

Project Study Area

Proposed Electric Easement

1 inch = 800 feet

0 150 300 600 900 Feet

N

Basemap: ESRI World Imagery
Source Data: USFWS NWI Wetland, USGS NHD Flowline

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
NATIONAL WETLANDS INVENTORY MAP

PROJ NO: 3609510

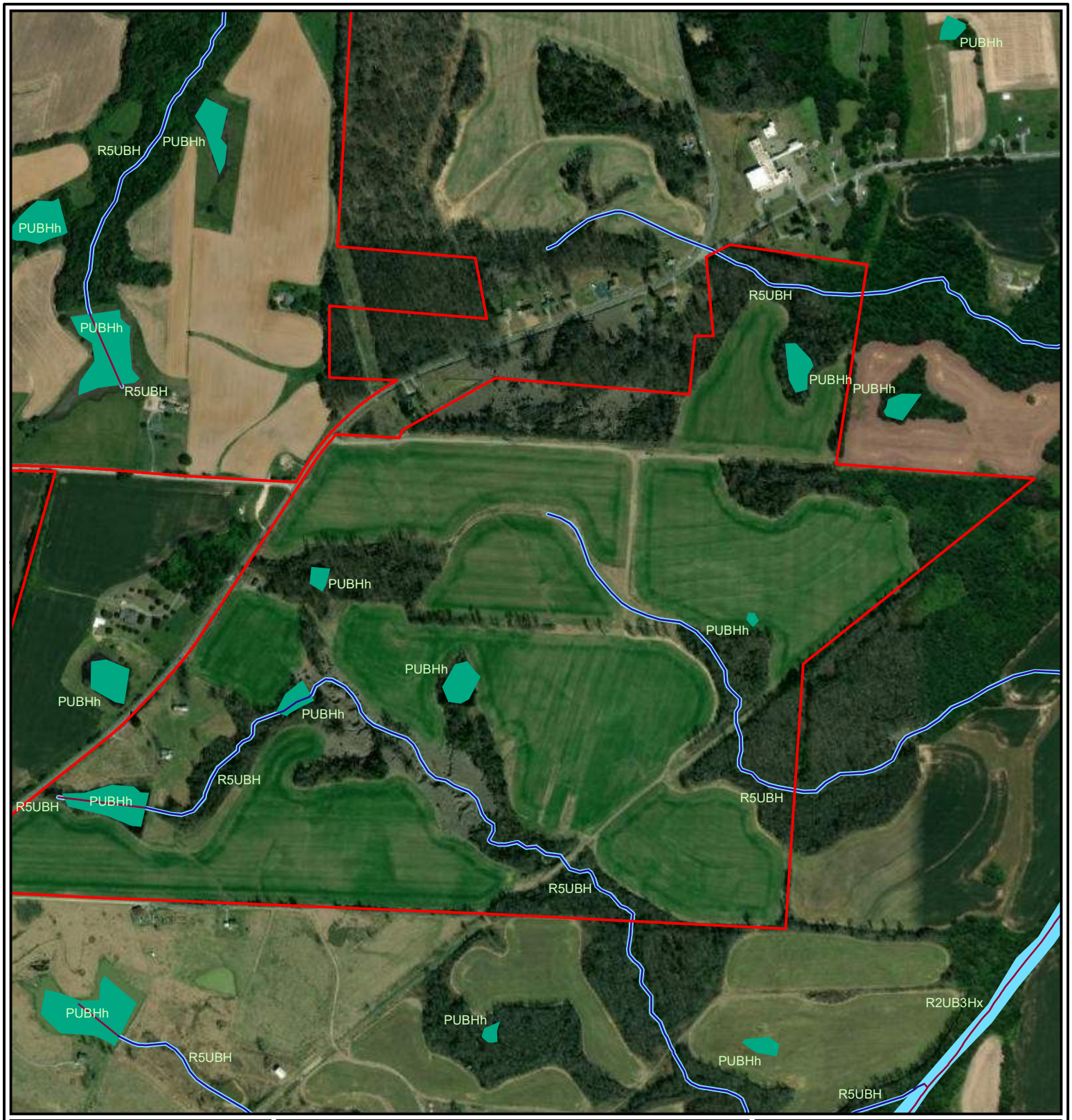
DATE: November 2020

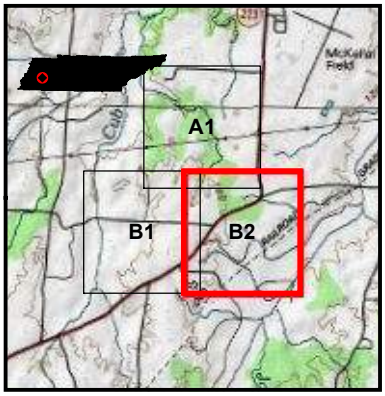
FIGURE 5-B1

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\TVA_Memo\2020-11-12_Updates\Figure5_NWI_Map.mxd





NWI Wetland

Wetland Type

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Riverine

NHD Flowline

Feature Type

- ArtificialPath
- StreamRiver

Project Study Area

Proposed Electric Easement

N

1 inch = 800 feet

0 150 300 600 900 Feet

Basemap: ESRI World Imagery
Source Data: USFWS NWI Wetland, USGS NHD Flowline

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
NATIONAL WETLANDS INVENTORY MAP

PROJ NO: 3609510

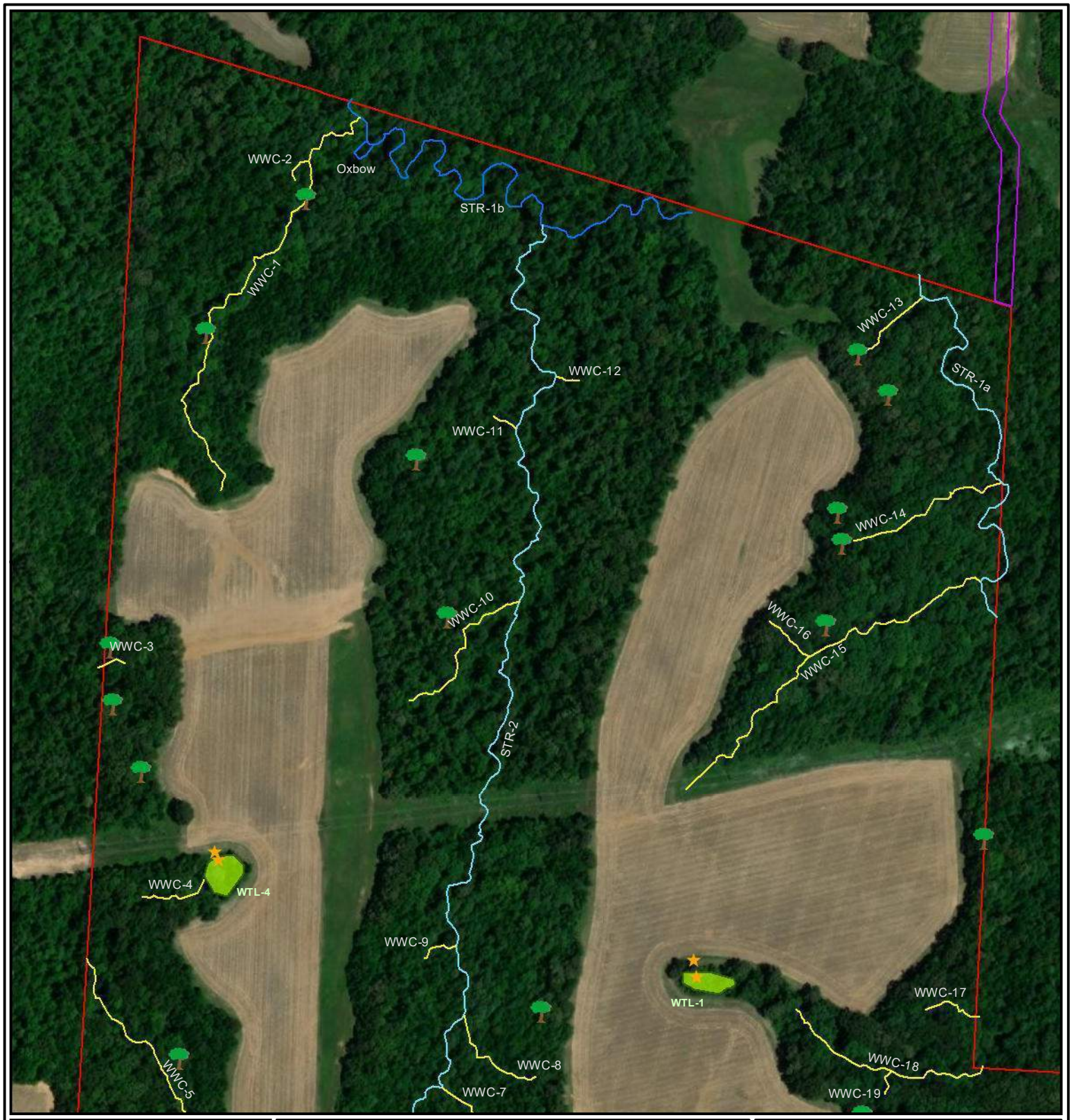
DATE: November 2020

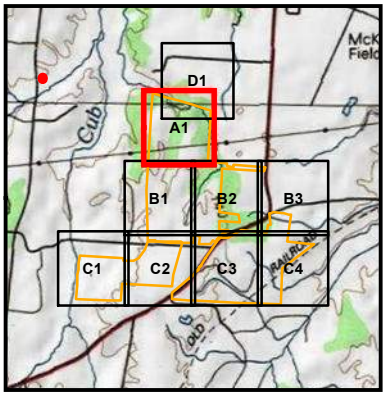
FIGURE 5-B2

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\TVA_Memo\2020-11-12_Updates\Figure5_NWI_Map.mxd





- USACE Data Point
- Intermittent Stream
- Perennial Stream
- Wet Weather Conveyance
- Delineated Wetland
- Potential Bat Roost Tree
- Project Study Area
- Proposed Electric Easement

N

1 inch = 400 feet

0 80 160 320 480 Feet

Basemap: ESRI World Imagery
Source Data:

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
EXISTING CONDITIONS MAP

PROJ NO: 3609510

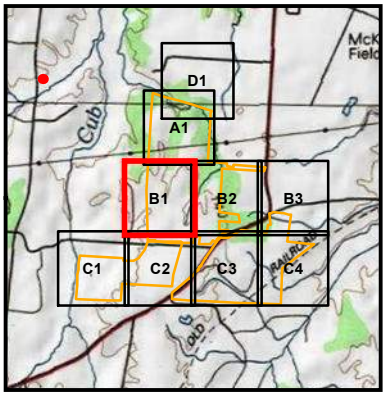
DATE: December 2020

FIGURE 6-A1

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\TVA_Memo\2020-11-12_Updates\Figure6_ResourceMap_2020-12-20.mxd



USACE Data Point

Intermittent Stream

Perennial Stream

Wet Weather Conveyance

Delineated Wetland

Potential Bat Roost Tree

Project Study Area

N

1 inch = 400 feet

0 80 160 320 480 Feet

Basemap: ESRI World Imagery
Source Data:

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
EXISTING CONDITIONS MAP

PROJ NO: 3609510

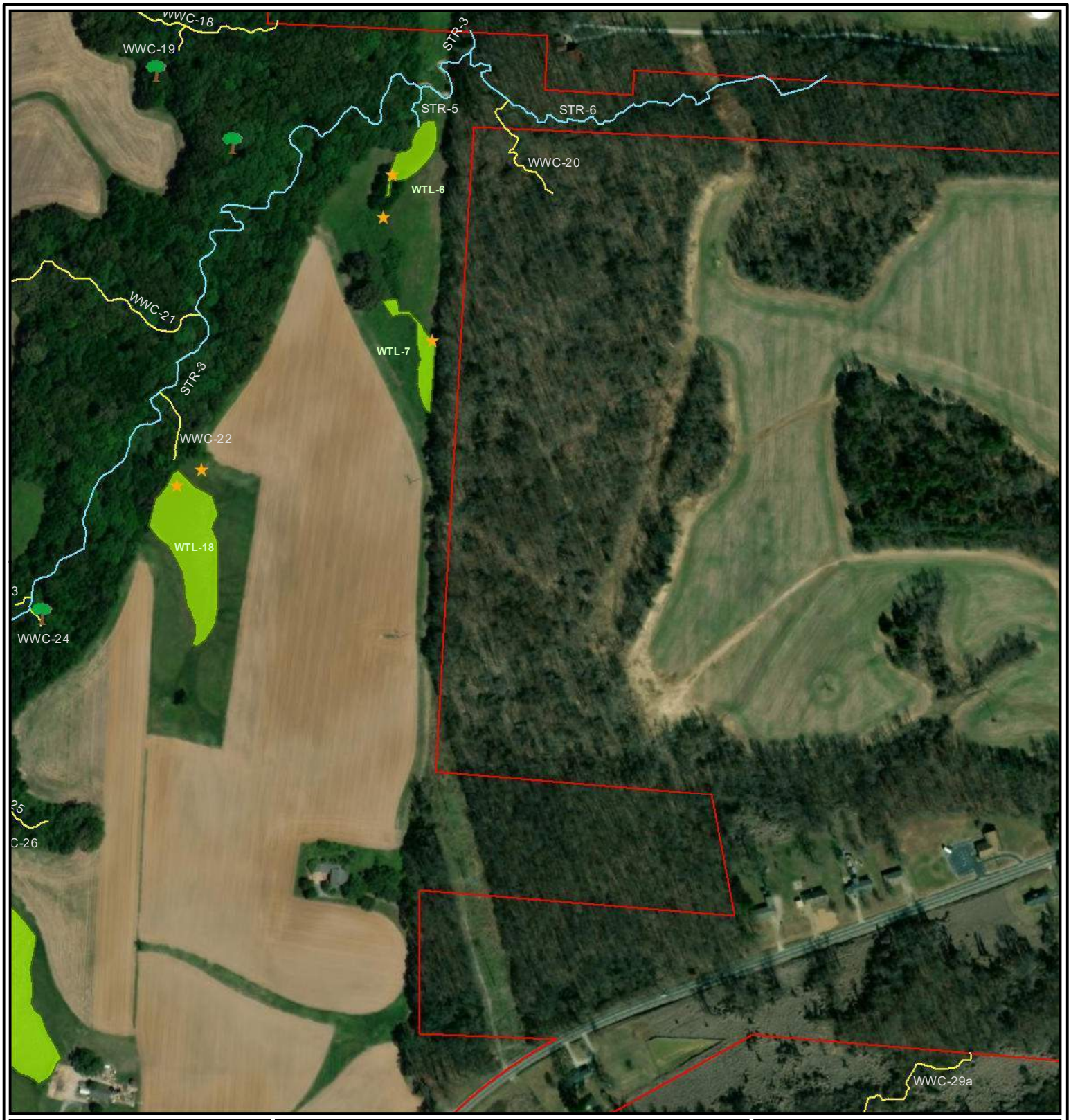
DATE: December 2020

FIGURE 6-B1

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\TVA_Memo\2020-11-12_Updates\Figure6_ResourceMap_2020-12-20.mxd



PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
EXISTING CONDITIONS MAP

PROJ NO: 3609510

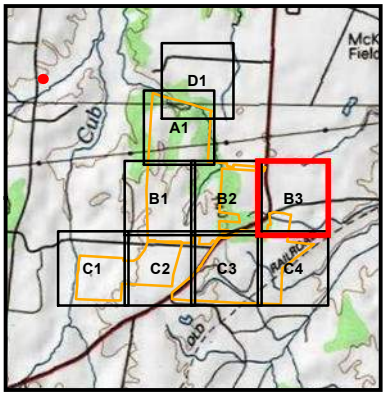
DATE: December 2020

FIGURE 6-B2

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\TVA_Memo\2020-11-12_Updates\Figure6_ResourceMap_2020-12-20.mxd



USACE Data Point

Intermittent Stream

Perennial Stream

Wet Weather Conveyance

Delineated Wetland

Project Study Area

N

1 inch = 400 feet

0 80 160 320 480

Feet

Basemap: ESRI World Imagery
Source Data:

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
EXISTING CONDITIONS MAP

PROJ NO: 3609510

DATE: December 2020

FIGURE 6-B3

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

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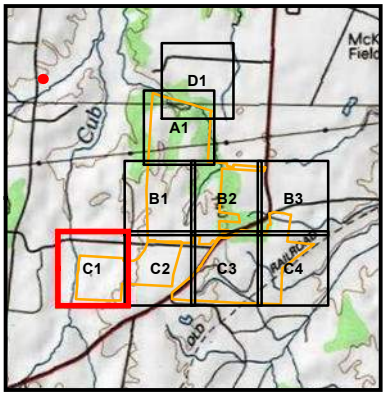


USACE Data Point
Intermittent Stream
Perennial Stream
Wet Weather Conveyance
Delineated Wetland
Potential Bat Roost Tree
Project Study Area

N

1 inch = 400 feet

0 80 160 320 480 Feet

Basemap: ESRI World Imagery
Source Data:

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
EXISTING CONDITIONS MAP

PROJ NO: 3609510

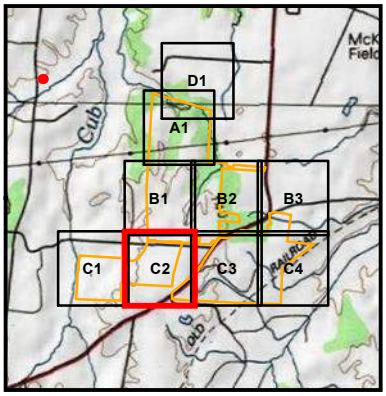
DATE: December 2020

FIGURE 6-C1

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\TVA_Memo\2020-11-12_Updates\Figure6_ResourceMap_2020-12-20.mxd



USACE Data Point

Intermittent Stream

Perennial Stream

Wet Weather Conveyance

Delineated Wetland

Potential Bat Roost Tree

Project Study Area

N

1 inch = 400 feet

0 80 160 320 480 Feet

Basemap: ESRI World Imagery
Source Data:

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
EXISTING CONDITIONS MAP

PROJ NO: 3609510

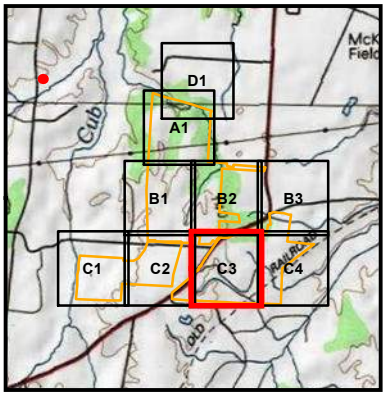
DATE: December 2020

FIGURE 6-C2

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\TVA_Memo\2020-11-12_Updates\Figure6_ResourceMap_2020-12-20.mxd



USACE Data Point
Intermittent Stream
Perennial Stream
Wet Weather Conveyance
Delineated Wetland
Potential Bat Roost Tree
Project Study Area

1 inch = 400 feet
0 80 160 320 480 Feet
N

Basemap: ESRI World Imagery
Source Data:

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
EXISTING CONDITIONS MAP

PROJ NO: 3609510
DATE: December 2020

FIGURE 6-C3

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210
SILICON RANCH

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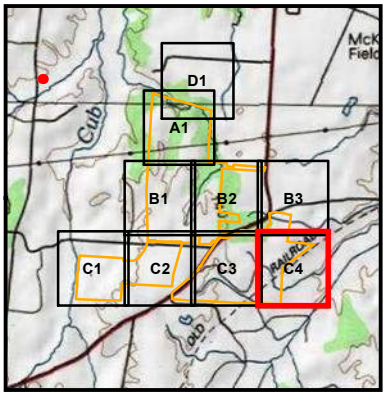

USACE Data Point

Intermittent Stream

Perennial Stream

Wet Weather Conveyance

Delineated Wetland

Potential Bat Roost Tree

Project Study Area

N

1 inch = 400 feet

0 80 160 320 480 Feet

Basemap: ESRI World Imagery
Source Data:

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
EXISTING CONDITIONS MAP

PROJ NO: 3609510

DATE: December 2020

FIGURE 6-C4

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

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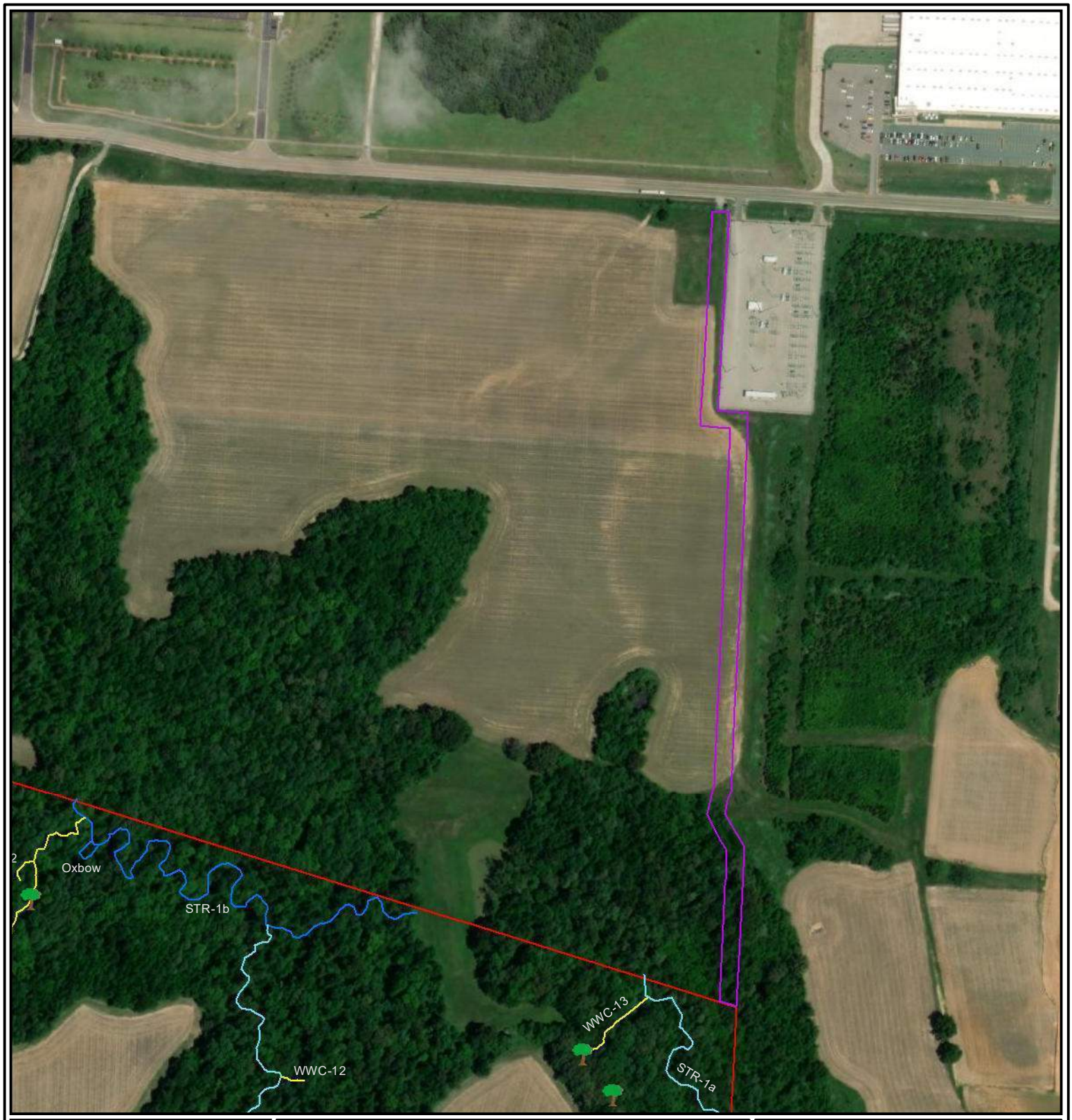
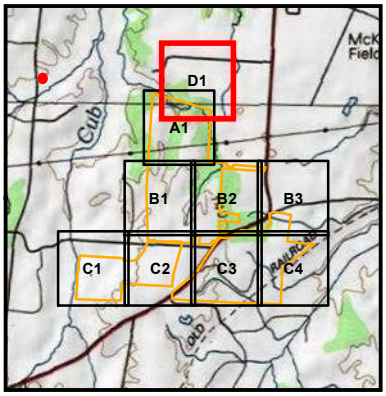




- USACE Data Point
- Intermittent Stream
- Perennial Stream
- Wet Weather Conveyance
- Delineated Wetland
- Potential Bat Roost Tree
- Project Study Area
- Proposed Electric Easement

N

1 inch = 400 feet

0 80 160 320 480 Feet

Basemap: ESRI World Imagery
Source Data:

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
EXISTING CONDITIONS MAP

PROJ NO: 3609510

DATE: December 2020

FIGURE 6-D1

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\TVA_Memo\2020-11-12_Updates\Figure6_ResourceMap_2020-12-20.mxd

615 3rd Ave S, Suite 700
Nashville, Tennessee 37210
615.254.1500 Phone
615.255.6572 Fax
bargedesign.com

Attachment B – NRCS Custom Soil Report

United States Department of Agriculture

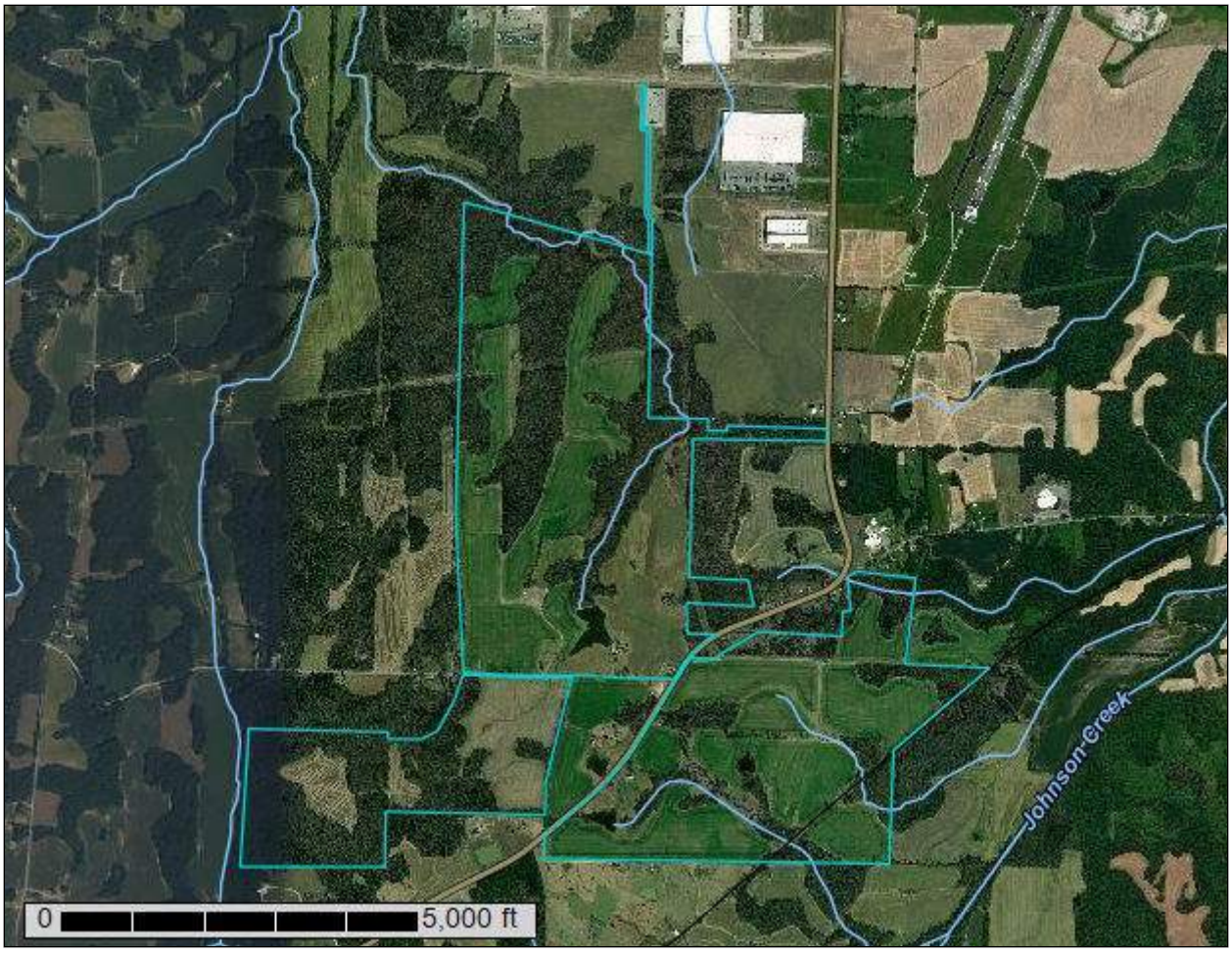
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Madison County, Tennessee

SR McKellar Solar Farm



January 5, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

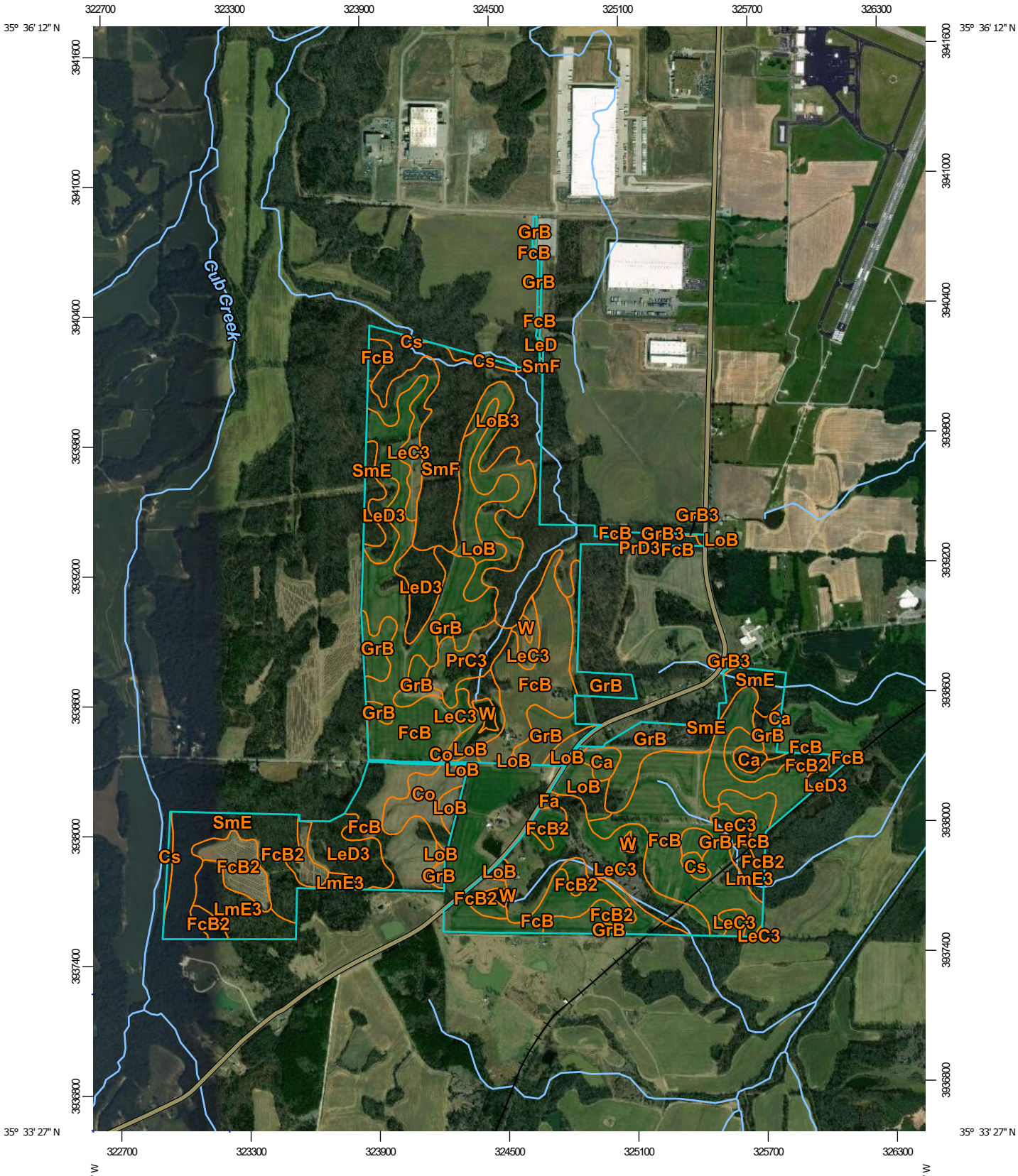
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.


88° 57' 27" W
88° 54' 54" W
35° 36' 12" N
35° 33' 27" N
322700
323300
323900
324500
325100
325700
326300
3941600
3941000
3940400
3939800
3939200
3938600
3938000
3937400
3936800
Gub Creek
GrB
FcB
Cs
LeD
SmF
LoB3
LeC3
SmE
LeD3
GrB3
PrD3
W
PrC3
Co
Fa
Ca
LmE3
FcB2
Map Scale: 1:24,900 if printed on A portrait (8.5" x 11") sheet.
N
Meters
0
350
700
1400
2100
Feet
0
1000
2000
4000
6000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

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 1:20,000.

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: Madison County, Tennessee
Survey Area Data: Version 15, May 29, 2020

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

Date(s) aerial images were photographed: Feb 10, 2016—Sep 15, 2019

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.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ca	Calhoun and Henry silt loams	8.2	0.9%
Co	Calloway silt loam, 0 to 2 percent slopes	17.2	1.8%
Cs	Collins silt loam, 0 to 2 percent slopes, frequently flooded, brief duration	8.4	0.9%
Fa	Falaya silt loam	0.8	0.1%
FcB	Feliciana silt loam, 2 to 5 percent slopes, northern phase	296.2	31.6%
FcB2	Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase	81.5	8.7%
GrB	Grenada silt loam, 2 to 5 percent slopes	76.5	8.2%
GrB3	Grenada silt loam, 2 to 5 percent slopes, severely eroded	0.4	0.0%
LeC3	Lexington silt loam, 5 to 8 percent slopes, severely eroded	98.8	10.6%
LeD	Lexington silt loam, 8 to 12 percent slopes	0.1	0.0%
LeD3	Lexington silt loam, 8 to 12 percent slopes, severely eroded	45.0	4.8%
LmE3	Lexington and Smithdale soils, 10 to 30 percent slopes, severely eroded	28.8	3.1%
LoB	Loring silt loam, 2 to 5 percent slopes	42.9	4.6%
LoB3	Loring silt loam, 2 to 5 percent slopes, severely eroded	31.0	3.3%
PrC3	Providence silt loam, 5 to 8 percent slopes, severely eroded	17.6	1.9%
PrD3	Providence silt loam, 8 to 12 percent slopes, severely eroded	2.5	0.3%
SmE	Smithdale soils, 10 to 20 percent slopes	63.3	6.8%
SmF	Smithdale soils, 20 to 30 percent slopes	111.5	11.9%
W	Water	6.1	0.7%
Totals for Area of Interest		**936.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas

shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Madison County, Tennessee

Ca—Calhoun and Henry silt loams

Map Unit Setting

National map unit symbol: m16h
Elevation: 10 to 620 feet
Mean annual precipitation: 47 to 62 inches
Mean annual air temperature: 49 to 70 degrees F
Frost-free period: 197 to 211 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Calhoun and similar soils: 51 percent
Henry and similar soils: 49 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Calhoun

Setting

Landform: Depressions on stream terraces
Landform position (three-dimensional): Tread
Parent material: Loess

Typical profile

H1 - 0 to 19 inches: silt loam
H2 - 19 to 50 inches: silty clay loam
H3 - 50 to 72 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very high (about 12.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Description of Henry

Setting

Landform: Stream terraces
Landform position (three-dimensional): Tread
Parent material: Loess

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 19 inches: silt loam

H3 - 19 to 50 inches: silt loam
H4 - 50 to 72 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 18 to 37 inches to fragipan
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Hydric soil rating: Yes

Co—Calloway silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t239
Elevation: 200 to 520 feet
Mean annual precipitation: 51 to 56 inches
Mean annual air temperature: 47 to 71 degrees F
Frost-free period: 195 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Calloway and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Calloway

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loess

Typical profile

Ap - 0 to 7 inches: silt loam
Bw - 7 to 19 inches: silt loam
Eg - 19 to 27 inches: silt loam
Btx - 27 to 62 inches: silt loam
C - 62 to 80 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 15 to 30 inches to fragipan
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 7 to 21 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: D
Hydric soil rating: No

Cs—Collins silt loam, 0 to 2 percent slopes, frequently flooded, brief duration

Map Unit Setting

National map unit symbol: 2t23k
Elevation: 160 to 570 feet
Mean annual precipitation: 50 to 53 inches
Mean annual air temperature: 47 to 71 degrees F
Frost-free period: 193 to 242 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Collins and similar soils: 87 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Collins

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-silty alluvium derived from sedimentary rock

Typical profile

Ap - 0 to 8 inches: silt loam
C - 8 to 28 inches: silt loam
Cg - 28 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches

Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 24 to 60 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: None
Available water capacity: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Ecological site: F134XY019AL - Northern Moderately Wet Alluvial Flat - PROVISIONAL
Hydric soil rating: No

Minor Components

Falaya

Percent of map unit: 8 percent
Landform: Flood plains
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

Fa—Falaya silt loam

Map Unit Setting

National map unit symbol: m16r
Elevation: 250 to 450 feet
Mean annual precipitation: 47 to 62 inches
Mean annual air temperature: 49 to 70 degrees F
Frost-free period: 197 to 211 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Falaya and similar soils: 91 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Falaya

Setting

Landform: Flood plains
Landform position (three-dimensional): Talf
Parent material: Silty alluvium

Typical profile

H1 - 0 to 45 inches: silt loam

H2 - 45 to 72 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 in/hr)
Depth to water table: About 12 to 24 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Available water capacity: Very high (about 12.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Hydric soil rating: No

Minor Components

Waverly

Percent of map unit: 8 percent
Landform: Flood plains
Landform position (three-dimensional): Talf
Hydric soil rating: Yes

FcB—Feliciana silt loam, 2 to 5 percent slopes, northern phase

Map Unit Setting

National map unit symbol: 2y71f
Elevation: 300 to 540 feet
Mean annual precipitation: 49 to 53 inches
Mean annual air temperature: 46 to 72 degrees F
Frost-free period: 190 to 245 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Feliciana, northern phase, and similar soils: 94 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Feliciana, Northern Phase

Setting

Landform: Divides
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-silty noncalcareous loess

Typical profile

Ap - 0 to 8 inches: silt loam
Bt1 - 8 to 25 inches: silty clay loam
Bt2 - 25 to 80 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F134XY006AL - Northern Loess Sideslope - PROVISIONAL
Hydric soil rating: No

FcB2—Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase

Map Unit Setting

National map unit symbol: 2y71v
Elevation: 300 to 540 feet
Mean annual precipitation: 50 to 55 inches
Mean annual air temperature: 46 to 72 degrees F
Frost-free period: 190 to 245 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Feliciana, northern phase, and similar soils: 94 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Feliciana, Northern Phase

Setting

Landform: Divides
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-silty noncalcareous loess

Typical profile

Ap - 0 to 6 inches: silt loam

Bt1 - 6 to 25 inches: silty clay loam
Bt2 - 25 to 41 inches: silt loam
Bt3 - 41 to 60 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 11.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Ecological site: F134XY006AL - Northern Loess Sideslope - PROVISIONAL
Hydric soil rating: No

GrB—Grenada silt loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2v7sf
Elevation: 260 to 480 feet
Mean annual precipitation: 51 to 55 inches
Mean annual air temperature: 46 to 71 degrees F
Frost-free period: 193 to 207 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Grenada and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grenada

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Noncalcareous loess

Typical profile

Ap - 0 to 7 inches: silt loam
Bw - 7 to 23 inches: silt loam
Eg - 23 to 26 inches: silt loam
Btx - 26 to 60 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 18 to 33 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 16 to 29 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C/D
Hydric soil rating: No

GrB3—Grenada silt loam, 2 to 5 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 2v7sg
Elevation: 260 to 480 feet
Mean annual precipitation: 45 to 61 inches
Mean annual air temperature: 50 to 70 degrees F
Frost-free period: 206 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Grenada and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grenada

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit, footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Fine-silty noncalcareous loess

Typical profile

Ap - 0 to 5 inches: silt loam
Bw - 5 to 14 inches: silt loam
E - 14 to 18 inches: silt loam
Btx - 18 to 79 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 10 to 20 inches to fragipan
Drainage class: Moderately well drained

Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 8 to 17 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Hydric soil rating: No

LeC3—Lexington silt loam, 5 to 8 percent slopes, severely eroded

Map Unit Setting
National map unit symbol: m171
Elevation: 300 to 650 feet
Mean annual precipitation: 47 to 62 inches
Mean annual air temperature: 49 to 70 degrees F
Frost-free period: 197 to 211 days
Farmland classification: Not prime farmland

Map Unit Composition
Lexington and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lexington

Setting
Landform: Hillslopes
Landform position (three-dimensional): Side slope
Parent material: Loess over loamy marine deposits

Typical profile
H1 - 0 to 6 inches: silt loam
H2 - 6 to 30 inches: silty clay loam
H3 - 30 to 45 inches: sandy loam
H4 - 45 to 72 inches: sandy loam

Properties and qualities
Slope: 5 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Hydric soil rating: No

LeD—Lexington silt loam, 8 to 12 percent slopes

Map Unit Setting

National map unit symbol: m172
Elevation: 300 to 650 feet
Mean annual precipitation: 47 to 62 inches
Mean annual air temperature: 49 to 70 degrees F
Frost-free period: 197 to 211 days
Farmland classification: Not prime farmland

Map Unit Composition

Lexington and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lexington

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Parent material: Loess over loamy marine deposits

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 30 inches: silty clay loam
H3 - 30 to 45 inches: sandy loam
H4 - 45 to 72 inches: sandy loam

Properties and qualities

Slope: 8 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Hydric soil rating: No

LeD3—Lexington silt loam, 8 to 12 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: m173
Elevation: 300 to 650 feet
Mean annual precipitation: 47 to 62 inches
Mean annual air temperature: 49 to 70 degrees F
Frost-free period: 197 to 211 days
Farmland classification: Not prime farmland

Map Unit Composition

Lexington and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lexington

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Parent material: Loess over loamy marine deposits

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 30 inches: silty clay loam
H3 - 30 to 45 inches: sandy loam
H4 - 45 to 72 inches: sandy loam

Properties and qualities

Slope: 8 to 12 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

LmE3—Lexington and Smithdale soils, 10 to 30 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: m176
Elevation: 300 to 650 feet
Mean annual precipitation: 47 to 62 inches
Mean annual air temperature: 49 to 70 degrees F
Frost-free period: 197 to 211 days
Farmland classification: Not prime farmland

Map Unit Composition

Lexington and similar soils: 51 percent
Smithdale and similar soils: 49 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lexington

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Parent material: Loess over loamy marine deposits

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 24 inches: silty clay loam
H3 - 24 to 42 inches: sandy loam
H4 - 42 to 72 inches: sandy loam

Properties and qualities

Slope: 10 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Smithdale

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope

Parent material: Loamy marine deposits

Typical profile

H1 - 0 to 4 inches: silt loam
H2 - 4 to 72 inches: sandy clay loam

Properties and qualities

Slope: 15 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

LoB—Loring silt loam, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2v7sn
Elevation: 260 to 410 feet
Mean annual precipitation: 35 to 63 inches
Mean annual air temperature: 47 to 71 degrees F
Frost-free period: 189 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Loring and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loring

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loess

Typical profile

Ap - 0 to 5 inches: silt loam
Bt - 5 to 30 inches: silt loam
Btx - 30 to 48 inches: silt loam

C - 48 to 79 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 26 to 35 inches to fragipan
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 21 to 27 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

LoB3—Loring silt loam, 2 to 5 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 2wn67
Elevation: 280 to 460 feet
Mean annual precipitation: 50 to 55 inches
Mean annual air temperature: 47 to 71 degrees F
Frost-free period: 192 to 228 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Loring and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Loring

Setting

Landform: Loess hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loess

Typical profile

Ap - 0 to 6 inches: silt loam
Bt - 6 to 24 inches: silt loam
Btx - 24 to 48 inches: silt loam
C - 48 to 80 inches: silt loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: 10 to 35 inches to fragipan

Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 10 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.1 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C/D
Hydric soil rating: No

PrC3—Providence silt loam, 5 to 8 percent slopes, severely eroded

Map Unit Setting
National map unit symbol: 2vxxq
Elevation: 100 to 640 feet
Mean annual precipitation: 52 to 69 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 215 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition
Providence and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Providence

Setting
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess over loamy marine deposits

Typical profile
Ap - 0 to 4 inches: silt loam
Bt1 - 4 to 20 inches: silty clay loam
Btx1 - 20 to 29 inches: silt loam
Btx2 - 29 to 37 inches: silt loam
2Btx1 - 37 to 57 inches: loam
2C - 57 to 65 inches: sandy loam

Properties and qualities
Slope: 5 to 8 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 14 to 26 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C/D
Hydric soil rating: No

PrD3—Providence silt loam, 8 to 12 percent slopes, severely eroded

Map Unit Setting

National map unit symbol: 2vxxr
Elevation: 100 to 640 feet
Mean annual precipitation: 52 to 69 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 215 to 270 days
Farmland classification: Not prime farmland

Map Unit Composition

Providence and similar soils: 90 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Providence

Setting

Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess over loamy marine deposits

Typical profile

Ap - 0 to 4 inches: silt loam
Bt1 - 4 to 20 inches: silty clay loam
Btx1 - 20 to 29 inches: silt loam
Btx2 - 29 to 37 inches: silt loam
2Btx1 - 37 to 57 inches: loam
2C - 57 to 65 inches: sandy loam

Properties and qualities

Slope: 8 to 12 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Drainage class: Moderately well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 14 to 26 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 3.8 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C/D
Hydric soil rating: No

SmE—Smithdale soils, 10 to 20 percent slopes

Map Unit Setting
National map unit symbol: m17m
Elevation: 330 to 640 feet
Mean annual precipitation: 47 to 62 inches
Mean annual air temperature: 49 to 70 degrees F
Frost-free period: 197 to 211 days
Farmland classification: Not prime farmland

Map Unit Composition
Smithdale and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Smithdale

Setting
Landform: Hillslopes
Landform position (three-dimensional): Side slope
Parent material: Loamy marine deposits

Typical profile
H1 - 0 to 21 inches: fine sandy loam
H2 - 21 to 72 inches: sandy clay loam

Properties and qualities
Slope: 10 to 20 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B
Hydric soil rating: No

SmF—Smithdale soils, 20 to 30 percent slopes

Map Unit Setting

National map unit symbol: m17n
Elevation: 310 to 660 feet
Mean annual precipitation: 47 to 62 inches
Mean annual air temperature: 49 to 70 degrees F
Frost-free period: 197 to 211 days
Farmland classification: Not prime farmland

Map Unit Composition

Smithdale and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Smithdale

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Parent material: Loamy marine deposits

Typical profile

H1 - 0 to 21 inches: fine sandy loam
H2 - 21 to 72 inches: sandy clay loam

Properties and qualities

Slope: 20 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

W—Water

Map Unit Composition

Water: 100 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

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Attachment C – Tables

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Table 1 – Wetlands within the Project Study Area

Waterbody I.D.	Description	Location Within Project Boundaries	Estimated Amount of Aquatic Resource in Project Area	State Jurisdictional Status	Federal Jurisdictional Status
WTL-1	PUB/PFO	35.583483, -88.93762	0.17 acres	Yes	No
WTL-2	PUB/PSS	35.578007, -88.941498	0.24 acres	Yes	Yes
WTL-3	PUB/PFO	35.580677, -88.941885	0.14 acres	Yes	Yes
WTL-4	PUB/PFO	35.584331, -88.942489	0.23 acres	Yes	No
WTL-5	PUB/PEM	35.573502, -88.938856	4.82 acres	Yes	Yes
WTL-6	PUB	35.581577, -88.933489	0.33 acres	Yes	Yes
WTL-7	PEM	35.580223, -88.933034	0.30 acres	Yes	Yes
WTL-8	PFO	35.573715, -88.929624	0.13 acres	Yes	Yes
WTL-9	PEM	35.573546, -88.928759	0.07 acres	Yes	Yes
WTL-10a	PFO	35.572893, -88.924407	0.77 acres	Yes	No
WTL-10b	PSS	35.572946, -88.922710	0.15 acres	Yes	No
WTL-11	PUB/PEM/ PFO	35.567561, -88.937808	2.33 acres	Yes	Yes

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Table 1 – Wetlands within the Project Study Area

Waterbody I.D.	Description	Location Within Project Boundaries	Estimated Amount of Aquatic Resource in Project Area	State Jurisdictional Status	Federal Jurisdictional Status
WTL-12	PFO	35.571299, -88.931484	0.56 acres	Yes	Yes
WTL-13a	PUB	35.571336, -88.932812	0.28 acres	Yes	Yes
WTL-13b	PFO	35.571309, -88.933891	0.10 acres	Yes	Yes
WTL-14	PUB/PFO	35.568217, -88.948143	0.71 acres	Yes	Yes
WTL-15a	PUB	35.575327, -88.923528	0.75 acres	Yes	Yes
WTL-15b	PFO	35.575365, -88.923077	0.01 acres	Yes	Yes
WTL-16	PUB	35.569387, -88.930268	0.93 acres	Yes	Yes
WTL-17	PUB	35.568176, -88.952005	0.18 acres	Yes	Yes
WTL-18	PUB	35.578954, -88.935568	1.41 acres	Yes	Yes

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Table 2 – Stream Features within the Project Study Area

Waterbody I.D.	Description	Location Within Project Boundaries	Estimated Amount of Aquatic Resource in Project Area	State Jurisdictional Status	Federal Jurisdictional Status
STR-1a	Intermittent	Start: 35.586534, -88.934682 End: 35.589341, -88.935589	1,538 LF	Yes	Yes
STR-1b	Perennial	Start: 35.589804, -88.937895 End: 35.590656, -88.941362	2,109 LF	Yes	Yes
STR-2	Intermittent	Start: 35.578562, -88.941103 End: 35.589662, -88.939401	4,926 LF	Yes	Yes
STR-3	Intermittent	Start: 35.575904, -88.937756 End: 35.582792, -88.932740	3,984 LF	Yes	Yes
STR-4	Intermittent	Start: 35.576854, -88.93914 End: 35.577124, -88.937550	538 LF	Yes	Yes
STR-5	Intermittent	Start: 35.581982, -88.933229 End: 35.582306, -88.933225	141 LF	Yes	Yes
STR-6	Intermittent	Start: 35.582510, -88.929128 End: 35.582628, -88.932726	1461 LF	Yes	Yes
STR-7a	Intermittent	Start: 35.569198, -88.933163	2,891 LF	Yes	Yes
STR-7b	Intermittent	End: 35.565672, -88.926511	630 LF	Yes	Yes
STR-8	Intermittent	Start: 35.568972, -88.930254 End: 35.567923, -88.930265	407 LF	Yes	Yes
STR-9	Intermittent	Start: 35.571266, -88.932719 End: 35.569058, -88.932107	1,082 LF	Yes	Yes
STR-10	Intermittent	Start: 35.569058, -88.932107 End: 35.571266, -88.932719	1,004 LF	Yes	Yes

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Table 2 – Stream Features within the Project Study Area

Waterbody I.D.	Description	Location Within Project Boundaries	Estimated Amount of Aquatic Resource in Project Area	State Jurisdictional Status	Federal Jurisdictional Status
STR-11a	Intermittent	Start: 35.569660, -88.946250	425 LF	Yes	Yes
STR-11b	Intermittent	End: 35.569760, -88.953794	1,265 LF	Yes	Yes
STR-12	Intermittent	Start: 35.566078, -88.950334 End: 35.567606, -88.954010	1,640 LF	Yes	Yes
STR-13 (Cub Creek)	Perennial	Start: 35.568957, -88.953954 End: 35.565459, -88.954209	1,347 LF	Yes	Yes
STR-14	Intermittent	Start: 35.568891, -88.924463 End: 35.567831, -88.923249	757 LF	Yes	Yes

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Table 3 – WWC Features within the Project Study Area

Waterbody I.D.	Description	Location Within Project Boundaries	Estimated Amount of Aquatic Resource in Project Area	State Jurisdictional Status	Federal Jurisdictional Status
WWC-1	Wet Weather Conveyance / Ephemeral Stream	Start: 35.587388, -88.942571 End: 35.590504, -88.941280	1,523 LF	No	No[1]
WWC-2	Wet Weather Conveyance / Ephemeral Stream	Start: 35.589969, -88.941915 End: 35.590135, -88.941785	90 LF	No	No[1]
WWC-3	Wet Weather Conveyance / Drainage Swale	Start: 35.585932, -88.943489 End: 35.585892, -88.943761	91 LF	No	No
WWC-4	Wet Weather Conveyance / Ephemeral Stream	Start: 35.584171, -88.942627 End: 35.584011, -88.943244	227 LF	No	No[1]
WWC-5	Wet Weather Conveyance / Ephemeral Stream	Start: 35.582112, -88.942602 End: 35.583487, -88.943785	683 LF	No	No[1]
WWC-6	Wet Weather Conveyance / Drainage Swale	Start: 35.580866, -88.941912 End: 35.581130, -88.941317	210 LF	No	No
WWC-7	Wet Weather Conveyance / Ephemeral Stream	Start: 35.582167, -88.939636 End: 35.582516, -88.940156	223 LF	No	No[1]
WWC-8	Wet Weather Conveyance / Ephemeral Stream	Start: 35.582628, -88.939212 End: 35.583117, -88.939953	343 LF	No	No[1]
WWC-9	Wet Weather Conveyance / Ephemeral Stream	Start: 35.583579, -88.94038 End: 35.583674, -88.940054	127 LF	No	No[1]
WWC-10	Wet Weather Conveyance / Ephemeral Stream	Start: 35.585695, -88.940607 End: 35.586550, -88.939519	536 LF	No	No[1]
WWC-11	Wet Weather Conveyance / Ephemeral Stream	Start: 35.588074, -88.939844 End: 35.587965, -88.939607	84 LF	No	No[1]
WWC-12	Wet Weather Conveyance / Drainage Swale	Start: 35.588389, -88.938984 End: 35.588414, -88.939218	73 LF	No	No

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Table 3 – WWC Features within the Project Study Area

Waterbody I.D.	Description	Location Within Project Boundaries	Estimated Amount of Aquatic Resource in Project Area	State Jurisdictional Status	Federal Jurisdictional Status
WWC-13	Wet Weather Conveyance / Drainage Swale	Start: 35.588708, -88.936154 End: 35.589162, -88.935526	266 LF	No	No
WWC-14	Wet Weather Conveyance / Ephemeral Stream	Start: 35.587129, -88.936162 End: 35.587645, -88.934679	538 LF	No	No[1]
WWC-15	Wet Weather Conveyance / Ephemeral Stream	Start: 35.585038, -88.937778 End: 35.586823, -88.934870	1,252 LF	No	No[1]
WWC-16	Wet Weather Conveyance / Drainage Swale	Start: 35.586450, -88.936987 End: 35.586164, -88.936572	166 LF	No	No
WWC-17	Wet Weather Conveyance / Ephemeral Stream	Start: 35.583269, -88.935269 End: 35.583226, -88.934747	192 LF	No	No[1]
WWC-18	Wet Weather Conveyance / Ephemeral Stream	Start: 35.583246, -88.936602 End: 35.582821, -88.934693	690 LF	No	No[1]
WWC-19	Wet Weather Conveyance / Ephemeral Stream	Start: 35.582562, -88.935677 End: 35.582758, -88.935621	86 LF	No	No[1]
WWC-20	Wet Weather Conveyance / Ephemeral Stream	Start: 35.581468, -88.931855 End: 35.582222, -88.932339	430 LF	No	No[1]
WWC-21	Wet Weather Conveyance / Ephemeral Stream	Start: 35.580611, -88.937583 End: 35.580371, -88.935379	810 LF	No	No[1]
WWC-22	Wet Weather Conveyance / Ephemeral Stream	Start: 35.579171, -88.935602 End: 35.579729, -88.935773	229 LF	No	No[1]
WWC-23	Wet Weather Conveyance / Drainage Swale	Start: 35.577932, -88.937162 End: 35.577996, -88.937002	61 LF	No	No
WWC-24	Wet Weather Conveyance / Drainage Swale	Start: 35.577765, -88.936904 End: 35.577899, -88.937011	62 LF	No	No

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Table 3 – WWC Features within the Project Study Area

Waterbody I.D.	Description	Location Within Project Boundaries	Estimated Amount of Aquatic Resource in Project Area	State Jurisdictional Status	Federal Jurisdictional Status
WWC-25	Wet Weather Conveyance / Ephemeral Stream	Start: 35.576147, -88.936769 End: 35.576613, -88.937709	385 LF	No	No[1]
WWC-26	Wet Weather Conveyance / Ephemeral Stream	Start: 35.575855, -88.937317 End: 35.575897, -88.937751	154 LF	No	No[1]
WWC-27	Wet Weather Conveyance / Ephemeral Stream	Start: 35.575828, -88.937341 End: 35.575904, -88.937756	136 LF	No	No[1]
WWC-28	Wet Weather Conveyance / Ephemeral Stream	Start: 35.576618, -88.939543 End: 35.576854, -88.93914	153 LF	No	No1
WWC-29	Wet Weather Conveyance / Ephemeral Stream	Start: 35.573684, -88.928672 End: 35.57666, -88.92499	1,047 LF	No	No[1]
WWC-30	Wet Weather Conveyance / Drainage Swale	Start: 35.568716, -88.946061 End: 35.569011, -88.945999	305 LF	No	No[1]
WWC-31	Wet Weather Conveyance / Ephemeral Stream	Start: 35.572558, -88.920780 End: 35.572349, -88.919986	272 LF	No	No[1]
WWC-32	Wet Weather Conveyance / Ephemeral Stream	Start: 35.572929, -88.919547 End: 35.572379, -88.920053	343 LF	No	No[1]
WWC-33	Wet Weather Conveyance / Ephemeral Stream	Start: 35.572409, -88.920971 End: 35.572423, -88.920549	153 LF	No	No[1]
WWC-34	Wet Weather Conveyance / Ephemeral Stream	Start: 35.570200, -88.925107 End: 35.569010, -88.924585	539 LF	No	No[1]
WWC-35	Wet Weather Conveyance / Ephemeral Stream	Start: 35.569582, -88.924234 End: 35.569231, -88.924573	172 LF	No	No[1]
WWC-36	Wet Weather Conveyance / Drainage Swale	Start:35.566924, -88.928111 End: 35.566671, -88.928083	98 LF	No	No

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Table 3 – WWC Features within the Project Study Area

Waterbody I.D.	Description	Location Within Project Boundaries	Estimated Amount of Aquatic Resource in Project Area	State Jurisdictional Status	Federal Jurisdictional Status
WWC-37	Wet Weather Conveyance / Ephemeral Stream	Start: 35.567009, -88.928544 End: 35.566841, -88.928596	69 LF	No	No[1]
WWC-38	Wet Weather Conveyance / Ephemeral Stream	Start: 35.568981, -88.929969 End: 35.568842, -88.930276	105 LF	No	No[1]
WWC-39	Wet Weather Conveyance / Ephemeral Stream	Start: 35.567241, -88.936162 End: 35.569198, -88.933163	928 LF	No	No[1]
WWC-40	Wet Weather Conveyance / Ephemeral Stream	Start: 35.569429, -88.935412 End: 35.568654, -88.934225	467 LF	No	No[1]
WWC-41	Wet Weather Conveyance / Ephemeral Stream	Start: 35.571343, -88.933593 End: 35.571404, -88.933361	76 LF	No	No[1]
WWC-42	Wet Weather Conveyance / Ephemeral Stream	Start: 35.570202, -88.945179 End: 35.570442, -88.94578	237 LF	No	No[1]
WWC-43	Wet Weather Conveyance / Drainage Swale	Start: 35.569999, -88.946070 End: 35.570157, -88.946163	64 LF	No	No
WWC-44	Wet Weather Conveyance / Drainage Swale	Start: 35.569392, -88.948632 End: 35.570767, -88.949218	637 LF	No	No
WWC-45	Wet Weather Conveyance / Ephemeral Stream	Start: 35.570099, -88.950035 End: 35.570641, -88.950594	284 LF	No	No[1]
WWC-46	Wet Weather Conveyance / Drainage Swale	Start: 35.568035, -88.945390 End: 35.569061, -88.946052	509 LF	No	No
WWC-47	Wet Weather Conveyance / Drainage Swale	Start: 35.568716, -88.946061 End: 35.569011, -88.945999	125 LF	No	No

1: Federal jurisdiction status determined by the new revised Navigable Waters Protection Rule: Definition of "Waters of the United States", Federal Register April 21, 2020 (approved June 22,2020).

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Table 4 – Calculation of Normal Weather Conditions - May Visit

Station: JACKSON MCKELLAR SIPES AIRPORT, TN NOAA

		Long-term Rainfall Records							
	Month	Minus One Std. Dev. (DRY)	Normal (Mean inches)	Plus One Std. Dev. (WET)	Actual Rainfall	Condition (dry, wet, normal)	Condition value	Month weight value	Product of previous two columns
1st Month Prior*	April	2.578066296	4.86	7.141933704	5.15	Normal	2	3	6
2nd Month Prior*	March	2.673451755	4.75	6.826548245	9.56	Wet	3	2	6
3rd Month Prior*	February	1.886184753	4.17	6.453815247	5.95	Normal	2	1	2
								Sum =	14

Note:

If sum is:	
6-9	Then period has been drier than normal
10-14	Then period has been normal
15-18	Then period has been wetter than normal

Condition Value

Dry	1
Normal	2
Wet	3

Conclusions:

Overall, the prior 3 months are considered "normal" for precipitation.

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Attachment D – Wetland and Waterbody Data Forms

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: STR-1a	Date/Time: 05/11/2020 12:30
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.586534, -88.934682 End: 35.589341, -88.935589
Previous Rainfall (7-days) : 1.44 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Residential homes, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [✓] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[✓]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[✓]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 32.5

Justification / Notes :

Delineated middle portion of NHD Flowline feature (STR-1b & STR-3) . Since the stream contiunes off-site it was undetermined if it is one contiguous feature. The channel was entirely composed of saturated sand, and no aquatic organisms were observed. This section of STR-1 is impacted at a man-made catch basin (just outside the project area), where it looses its bed and bank.

Waterbody Name: STR-1a

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 20.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	✓ 3
2. Sinuous channel	0	1	2	✓ 3
3. In-channel structure: riffle-pool sequences	0	1	✓ 2	3
4. Sorting of soil textures or other substrate	0	1	2	✓ 3
5. Active/relic floodplain	0	1	✓ 2	3
6. Depositional bars or benches	0	1	✓ 2	3
7. Braided channel	✓ 0	1	2	3
8. Recent alluvial deposits	0	0.5	1	✓ 1.5
9. Natural levees	✓ 0	1	2	3
10. Headcuts	0	✓ 1	2	3
11. Grade controls	✓ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✓ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ☐		Yes = 3 ✓	

B. **Hydrology** (Subtotal = 5.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	✓ 1	2	3
15. Water in channel and >48 hours since sig. rain	0	✓ 1	2	3
16. Leaf litter in channel (January – September)	✓ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	✓ 1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✓ 1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✓		Yes = 1.5 ☐	

C. **Biology** (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	✓ 3	2	1	0
21. Rooted plants in channel [1]	✓ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✓ 0	0.5	1	1.5
23. Bivalves/mussels	✓ 0	1	2	3
24. Amphibians	✓ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✓ 0	1	2	3
26. Filamentous algae; periphyton	✓ 0	1	2	3
27. Iron oxidizing bacteria/fungus	0	✓ 0.5	1	1.5
28.Wetland plants in channel [2]	0	✓ 0.5	1	2

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

Total Points = 32.5

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

Notes :

Stream bed is entirely lined with loose saturated sandy substrate, which also acted as recent alluvial deposits

No aquatic organisms were observed, since the sandy substrate was probed to a depth of 6 to 12 inches.

Little to no surface water observed, but the presence of saturation/ground water was present throughout.

Some small to medium headcuts and 2 grade control (root) structures observed.

Depositional bars were formed of compacted sand and gravel mixture.

FACW vegetation in small portions of the channel were observed with siltated leaves and branches.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: STR-1b	Date/Time: 05/11/2020 13:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.589804, -88.937895 End: 35.590656, -88.941362
Previous Rainfall (7-days) : 1.44 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes; Collins silt loam, 0 to 2 percent slopes, frequently flooded Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Residential homes, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [✓] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[✓]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[✓]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [✓]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [✓]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) =

Justification / Notes :

Stream was observed with multiple groundwater seepages along the delineated portion of the reach.

The channel originates at the catch basin stormwater culvert and has confluences with STR-2 and WWC-1.

Unknown minnow species were obsered in multiple pools within the delineated portion of the stream, as well as amphibians.

STR-1 is a blue line feature in USGS mapping.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-2 (Unnamed Tributary to Cub Creek)	Date/Time: 5/29/20 08:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.578562, -88.941103
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.589662, -88.939401
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, severely eroded, and Simthdale soils	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 33.0

Justification / Notes :

The channel feature drains the surrounding area overland sheet flow and surface waters from connecting WWC's

The Stream continues north into STR-1b

See notes below for additional justification.

The groundwater connection stream indicator was observed.

Waterbody Name: STR-2

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 19.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	✔ 3
2. Sinuous channel	0	1	✔ 2	3
3. In-channel structure: riffle-pool sequences	0	1	2	✔ 3
4. Sorting of soil textures or other substrate	0	1	✔ 2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	0	1	✔ 2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	0.5	✔ 1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	0	✔ 0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	✔

B. **Hydrology** (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	✔ 1	2	3
15. Water in channel and >48 hours since sig. rain	0	✔ 1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✔ 1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	✔

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 33.0

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

Notes :

The stream has a defined bed and bank with moderate amount of sinuosity and riffle/pool sequences.

The upper portion of the reach has FAC/FACW vegetation in the channel, but then become absent for the remainder.

Ground water seepages were observed in the middle and lower portions of the reach.

Moderate amounts of sorting, benching and riffle/pool sequences were observed

Some amphibian larvae were observed in pools of the stream.

Some flowing water was observed during delineation survey

A few large headcuts and small/medium sized head cuts are present

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-3 (Unnamed Tributary to Cub Creek)	Date/Time: 5/29/20 12:15
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.575904, -88.937756
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.582792, -88.932740
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, Providence silt loam, Smithdale soils	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 29.5

Justification / Notes :

The stream feature drains the surrounding area overland sheet flow and the excess surface waters from adjacent conveyances

STR-3 is likely part of STR-1, but goes outside of the property limits to confirm

See notes below for additional justification.

The groundwater connection stream indicator was observed.

Waterbody Name: STR-3

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 17.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	✔ 3
2. Sinuous channel	0	1	✔ 2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1	✔ 2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	0	1 ✔	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	0	✔ 0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3 ✔	

B. **Hydrology** (Subtotal = 5.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1 ✔	2	3
15. Water in channel and >48 hours since sig. rain	0	✔ 1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✔ 1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 29.5

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

Notes :

Strong presence of bed and bank along the incised channel, with good amounts of sorting of channel substrates.

Moderate amounts of wrack lines observed along the reach.

A few large to small headcuts were observed

No leaf litter in the channel, little to no FAC/FACW vegetation in the thalwag, with some fibrous roots in the channel

Amphibian larvae were observed sparsely in remnant pools.

Multiple groundwater seepages observed at the toe of slope for the banks of the stream

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-4 (Unnamed Tributary to Cub Creek)	Date/Time: 5/29/20 11:25
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.576854, -88.93914
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.577124, -88.937550
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Providence silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 26.0

Justification / Notes :

The stream feature drains the surrounding area overland sheet flow and the excess surface waters from WWC-28

the drainage feature conveys surface waters into STR-3

See notes below for additional justification.

The groundwater connection stream indicator was observed.

Waterbody Name: STR-4

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 13.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	✔ 3
2. Sinuous channel	0	1	✔ 2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1	✔ 2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	0	✔ 1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 7.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	✔ 2	3
15. Water in channel and >48 hours since sig. rain	0	1 ✔	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	✔ 0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5 ✔	

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 26.0

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

Notes :

strong presence of bed and bank,with indicators of an OHWM, and moderate amounts of sorting of channel substrates.

little amounts of wrack lines observed along the reach.

4 medium sized headcuts were observed

No leaf litter in the channel, no vegetation in the thalwag, with little fibrous roots in the channel

Amphibian larvae observed in some small pools within the channel

multiple ground water seepages observed along the edge of slope of the channel.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-5 (Unnamed Tributary to Cub Creek)	Date/Time: 5/29/20 13:15
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.581982, -88.933229
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.582306, -88.933225
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 23.5

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow and the excess surface waters from WTL-6

The drainage feature conveys surface waters into STR-3

See notes below for additional justification.

Groundwater seepages from WTL-6 pond berm wall observed

Waterbody Name: STR-5

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 9.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2 ✔	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	0	0.5 ✔	1	1.5
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1	2 ✔	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 7.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1 ✔	2	3
15. Water in channel and >48 hours since sig. rain	0	1 ✔	2	3
16. Leaf litter in channel (January – September)	1.5 ✔	1	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✔	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5 ✔	

C. **Biology** (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2 ✔	1	0
21. Rooted plants in the thalweg [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	1	2	3
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0	1 ✔	2	3
27. Iron oxidizing bacteria/fungus	0	0.5 ✔	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1 ✔	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 23.5

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

Notes :

Moderate/strong presence of bed and bank,with an OHWM, and some of sorting of channel substrates (Clay).

Little amounts of wrack lines observed along the reach.

1 large headcut was observed at the start of the reach

No leaf litter in the channel, some FAC/FACW vegetation in the thalwag, with some fibrous roots in the channel

No aquatic fauna observed

Hydric soils were observed in the portion closest to WTL-6

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-6 (Unnamed Tributary to Cub Creek)	Date/Time: 5/29/20 13:35
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.582510, -88.929128
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.582628, -88.932726
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes; Providence silt loam, 8 to 12 percent slopes, severely erod	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 27.0

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow, point source of water unknown since it starts off-site

The drainage feature conveys surface waters into STR-3

See notes below for additional justification.

Groundwater seepages observed along the channel

Waterbody Name: STR-6

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 12.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2 ✔	3
2. Sinuous channel	0	1	2 ✔	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1	2 ✔	3
5. Active/relic floodplain	0	0.5	1 ✔	1.5
6. Depositional bars or benches	0	1	2 ✔	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1 ✔	2	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5 ✔	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 8.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	2 ✔	3
15. Water in channel and >48 hours since sig. rain	0	1 ✔	2	3
16. Leaf litter in channel (January – September)	1.5 ✔	1	0.5	0
17. Sediment on plants or on debris	0	0.5	1 ✔	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✔	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5 ✔	

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 27.0

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

Notes :

Moderate/strong presence of bed and bank,with an OHWM, and some of sorting of channel substrates (Clay).

Some wrack lines observed along the reach.

1-2 small headcuts were observed

No leaf litter in the channel, some FAC/FACW vegetation in the thalwag, with some fibrous roots in the channel

Amphiban larvae and adult frogs observed in pools along the channel.

Hydric soils were observed nearly throughout

Multiple ground water seepages observed throughout.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-7 (Unnamed Tributary to Johnson Creek)	Date/Time: 5/28/20 10:30
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.569198, -88.933163
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.565672, -88.926511
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities, Residential homes	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 30.5

Justification / Notes :

The stream orginates from multiple drainages from agricultural farm ponds within the project limits.

Excess surface water flows southeast beyond the project limits. The stream is culverted under a historic railroad bed.

groundwater seeps present in certain areas, a primary stream indicator observed.

See notes below for additional justification.

Waterbody Name: STR-7

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 18.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2 ✔	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1	2 ✔	3
4. Sorting of soil textures or other substrate	0	1	2 ✔	3
5. Active/relic floodplain	0	0.5	✔	1.5
6. Depositional bars or benches	0	1	✔	3
7. Braided channel	✔	1	2	3
8. Recent alluvial deposits	0	0.5	✔	1.5
9. Natural levees	✔	1	2	3
10. Headcuts	0	✔	2	3
11. Grade controls	✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3 ✔	

B. **Hydrology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1 ✔	2	3
15. Water in channel and >48 hours since sig. rain	0	✔	2	3
16. Leaf litter in channel (January – September)	✔	1	0.5	0
17. Sediment on plants or on debris	0	✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✔	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5 ✔	

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 30.5

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

Notes :

Strong bed and bank throughout the feature, as well as good sorting, weak sinosity and presence of sand bars.

A thick sand layer of recent alluvial deposits was present mostly throughout, underlain by hydric soils.

Minimal vegetation observed in the thalwag with some fibrous roots.

3-4 small headcuts observed.

Amphibian larvae and adult frogs observed in remnant pools along the channel.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-8 (Unnamed Tributary to Johnson Creek)	Date/Time: 5/28/20 10:45
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.568972, -88.930254
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.567923, -88.930265
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities, Residential homes	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 23.5

Justification / Notes :

The stream orginates from drainage from WTL-16 and a confluence with WWC-38.

Excess surface water flows south into STR-7. The area appears to be impacted with kudzu and agricultural practices

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: STR-8

Secondary Field Indicator Evaluation

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

B. **Hydrology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	✔ 1	2	3
15. Water in channel and >48 hours since sig. rain	0	✔ 1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5 ✔	

C. **Biology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3 ✔	2	1	0
21. Rooted plants in the thalweg [1]	✔ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	0	✔ 0.5	1	1.5
28.Wetland plants in channel bed [2]	✔ 0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 23.5

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

Notes :

moderate bed and bank throughout the feature, as well as good sorting, weak sinosity and presence of gravel bars.

A groundwater seep starts the stream feature and hydric soils were observed.

No vegetation observed in the thalwag with some fibrous roots.

2-3 small headcuts observed.

Little to no sinuosity observed and appears to somewhat channelized.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-9 (Unnamed Tributary to Johnson Creek)	Date/Time: 5/28/20 11:05
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.571266, -88.932719
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.569058, -88.932107
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities, Residential homes	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 24.0

Justification / Notes :

The stream orginates from drainage from WTL-13a.

Excess surface water flows south into STR-7. The area appears to be impacted with kudzu and agricultural practices

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: STR-9

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 13.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	✔ 3
2. Sinuous channel	0	1	✔ 2	3
3. In-channel structure: riffle-pool sequences	0	1	✔ 2	3
4. Sorting of soil textures or other substrate	0	1	✔ 2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	0	1	✔ 2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	✔ 0	0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	✔ 2	3
15. Water in channel and >48 hours since sig. rain	0	✔ 1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	✔ 3	2	1	0
21. Rooted plants in the thalweg [1]	✔ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	✔ 0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 24.0

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

Notes :

Strong bed and bank throughout the feature, as well as moderate sorting, weak sinosity and presence of benching.

The feature starts at a headcut from drainage of WTL-13a.

No vegetation observed in the thalwag and no fibrous roots.

2-3 small headcuts observed and 1 medium.

No aquatic fauna observed

Surface water was observed in some of the pools for the feature.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-10 (Unnamed Tributary to Johnson Creek)	Date/Time: 5/28/20 08:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.569058, -88.932107 End: 35.571266, -88.932719
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ✔ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 10 to 20 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities, Residential homes	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ✔ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 29.0

Justification / Notes :

The stream orginates at a culvert outfall adjacent to State Route 223, and has confluences with WWC-29 and WWC-30.

Surface water flows west beyond the project limits.

No primary stream indicators observed. See notes below for additional justification.

Waterbody Name: STR-10

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 19.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	✔ 3
2. Sinuous channel	0	1	✔ 2	3
3. In-channel structure: riffle-pool sequences	0	1	✔ 2	3
4. Sorting of soil textures or other substrate	0	1	2	✔ 3
5. Active/relic floodplain	0	0.5	✔ 1	1.5
6. Depositional bars or benches	0	1	✔ 2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	0.5	✔ 1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	✔

B. **Hydrology** (Subtotal = 3.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	✔ 1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	✔ 0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✔ 1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5	✔

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 29.0

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

Notes :

Strong bed and bank throughout the feature, as well as good sorting, moderate sinosity and presence of gravel bars.

Wrack lines were observed mostly throughout the delineated reach, and recent alluvial deposits.

No vegetation observed in the thalwag, as well as an absence of fiberous roots.

1-2 small headcuts observed.

Amphibian larvae and adult frogs observed in remnant pools along the channel.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-11	Date/Time: 5/28/20 15:30
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: South of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.56966, -88.94625
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.56976, -88.953794
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 10 to 20 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 34.5

Justification / Notes :

The channel feature drains the surrounding are overland sheet flow

The Stream continues on and off site until its confluence with STR-13 (Cub Creek)

See notes below for additional justification.

The groundwater connection stream indicator was observed.

Waterbody Name: STR-11

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 19.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	✔ 3
2. Sinuous channel	0	1	2	✔ 3
3. In-channel structure: riffle-pool sequences	0	1	✔ 2	3
4. Sorting of soil textures or other substrate	0	1	2	✔ 3
5. Active/relic floodplain	0	0.5	✔ 1	1.5
6. Depositional bars or benches	0	1	✔ 2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	0.5	✔ 1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	✔

B. **Hydrology** (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	✔ 2	3
15. Water in channel and >48 hours since sig. rain	0	1	✔ 2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	✔ 1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1	✔ 1.5
19. Hydric soils in channel bed or sides of channel	No = 0	✔	Yes = 1.5	

C. **Biology** (Subtotal = 8.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	✔ 3	2	1	0
21. Rooted plants in the thalweg [1]	✔ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	0	0.5	✔ 1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	0	✔ 0.5	1	1.5
28.Wetland plants in channel bed [2]	0	✔ 0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 34.5

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

Notes :

The stream has a strong bed and bank, with high sinuosity, riffle/pool sequences, and substrate sorting

The sandy bottom was saturated and at time acted like quick sand.

little to no vegetation observed throughout the thalwag, as well as fibrous roots.

Amphibian larvae and adult frogs observed in surface water pools.

multiple groundwater seepages observed along the channel edge of the stream.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-12	Date/Time: 5/28/20 16:30
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: South of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.566078, -88.950334 End: 35.567606, -88.954010
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 10 to 20 percent slopes, Lexington and Smithdale soils, 10 to 30 percent slopes, Source: NRCS	
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 25.0

Justification / Notes :

The channel feature drains the surrounding are overland sheet flow

The Stream off site at the confluence with STR-13 (Cub Creek)

See notes below for additional justification.

The groundwater connection stream indicator was observed.

Waterbody Name: STR-12

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 13.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	0	1	✔ 2	3
3. In-channel structure: riffle-pool sequences	0	1	✔ 2	3
4. Sorting of soil textures or other substrate	0	1	✔ 2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	0	✔ 1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	0	✔ 0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 7.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	✔ 2	3
15. Water in channel and >48 hours since sig. rain	0	1	✔ 2	3
16. Leaf litter in channel (January – September)	1.5	✔ 1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✔ 1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5 ✔	

C. **Biology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	✔ 1	0
21. Rooted plants in the thalweg [1]	3	✔ 2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	0	✔ 0.5	1	1.5
28.Wetland plants in channel bed [2]	0	✔ 0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 25.0

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

Notes :

The stream has a defined bed and bank, but is lost in middle portion of the reach, which becomes dominated with FAC/FACW vegetation. Some fibrous roots were also observed in the channel too.

Ground water seepages were observed in the lower and upper portions of the reach.

Moderate amounts of sorting, benching and riffle/pool sequences were obsered

No aquatic fauna were observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-13	Date/Time: 5/28/20 16:40
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: South of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.568957, -88.953854 End: 35.565459, -88.954209
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Collins silt loam, 0 to 2 percent slopes, frequently flooded, brief duration	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) =

Justification / Notes :

The Feature is Cub Creek

Blunt-nose Minnow, Sunfish Spp. and Creek Chubs were observed along the channel

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: STR-14 (Unnamed Tributary to Johnson Creek)	Date/Time: 5/28/20 12:50
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.568891, -88.924463
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.567831, -88.923249
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington and Smithdale soils, 10 to 30 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = STREAM

Secondary Indicator Score (if applicable) = 27.5

Justification / Notes :

The stream orginates at the culvert crossing of WWC-34

The area appears to be impacted by the culvert under the historic railroad bed and agricultural practices

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: STR-9

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 16.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2 ✔	3
2. Sinuous channel	0	1	2 ✔	3
3. In-channel structure: riffle-pool sequences	0	1	2 ✔	3
4. Sorting of soil textures or other substrate	0	1	2 ✔	3
5. Active/relic floodplain	0	0.5	1 ✔	1.5
6. Depositional bars or benches	0	1	2 ✔	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1 ✔	2	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3 ✔	

B. **Hydrology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1 ✔	2	3
15. Water in channel and >48 hours since sig. rain	0	1 ✔	2	3
16. Leaf litter in channel (January – September)	1.5 ✔	1	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1 ✔	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2 ✔	1	0
21. Rooted plants in the thalweg [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	1	2	3
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0	0.5	1 ✔	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel bed [2]	0 ✔	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 27.5

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

Notes :

Strong bed and bank throughout the feature, as well as good sorting, moderate sinosity and presence of benching.

Surface water was observed in some of the pools for the feature.

No vegetation observed in the thalwag, with little fibrous roots.

2-3 small headcuts observed

Many amphibian larvae and adult frogs observed in the remnant pools of the channel

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-1	Date/Time: 05/11/2020 14:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.587388, -88.942571 End: 35.590504, -88.941280
Previous Rainfall (7-days) : 1.44 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]

Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

Severe [ ] Moderate [✓] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 15.75

Justification / Notes :

The channel feature drains the surrounding upland sheetflow and runoff from the adjacent agricultural field.

No primary stream indicators observed. The drainage feature conveys water in to the western portion of STR-1b.

See notes below for additional justification.

Waterbody Name: WWC-1

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 9.75)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✓ 2	3
2. Sinuous channel	0	1	✓ 2	3
3. In-channel structure: riffle-pool sequences	0	✓ 1	2	3
4. Sorting of soil textures or other substrate	0	✓ 1	2	3
5. Active/relic floodplain	0	✓ 1	2	3
6. Depositional bars or benches	0	✓ 1	2	3
7. Braided channel	✓ 0	1	2	3
8. Recent alluvial deposits	0	✓ 0.5	1	1.5
9. Natural levees	✓ 0	1	2	3
10. Headcuts	0	1	✓ 2	3
11. Grade controls	✓ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✓ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✓		Yes = 3	

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✓ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✓ 0	1	2	3
16. Leaf litter in channel (January – September)	1.5	✓ 1	0.5	0
17. Sediment on plants or on debris	0	✓ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✓ 1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✓		Yes = 1.5	

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

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

Total Points = 15.75

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

Notes :

Bed and Bank morphology is lost intermittently at the upstream portions of the channel, as well as the central portion.

No surface water, hydric soils, or ground water seepages were encountered throughout the delineated reach.

No aquatic fauna were observed.

5 small headcuts were observed along the delineated reach, and a few wrack lines along the bank were observed.

Fibrous roots were observed nearly throughout the delineated reach.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-2	Date/Time: 05/11/2020 15:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.589969, -88.941915 End: 35.590135, -88.941785
Previous Rainfall (7-days) : 1.44 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet ☐ wet ☐ average ✔ dry ☐ drought ☐ unknown ☐

Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y ✔ or N ☐ (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

Severe ☐ Moderate ✔ Slight ☐ Absent ☐

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	☐	WWC ☐
2. Defined bed and bank absent, dominated by upland vegetation / grass	☐	WWC ☐
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	☐	WWC ☐
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	☐	WWC ☐
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✔	Stream ☐
6. Presence of fish (except *Gambusia*)	✔	Stream ☐
7. Presence of naturally occurring ground water table connection	✔	Stream ☐
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 13.25

Justification / Notes :

The channel feature drains the surrounding upland sheetflow. The drainage feature conveys water into WWC-1, which ulimately drains into easter portion of STR-1b. No primary stream indicators observed. See notes below for additional justification.

Waterbody Name: WWC-2

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 7.75)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	0 ✔	1	2	3
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0 ✔	0.5	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1 ✔	2	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	1 ✔	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✔	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✔		Yes = 1.5	

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

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

Total Points = 13.25

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

Notes :

Bed and Bank morphology present, but lacks an Ordinary High Water Mark within the delineated reach.

No surface water, hydric soils, or ground water seepages were encountered throughout the delineated reach.

No aquatic fauna were observed.

2 small headcuts were observed along the delineated reach, and a few wrack lines along the bank were observed.

Fibrous roots were observed nearly throughout the delineated reach, as well as some FACU vegetation.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-3	Date/Time: 05/12/2020 14:15
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.585932, -88.943489 End: 35.585892, -88.943761
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 10 to 20 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [ ] Slight [✓] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 8.5

Justification / Notes :

The channel feature drain upland sheet flow and surface waters from the adjacent agricultural field.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-3

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✓	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	1	2	3
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	✓	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✓	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✓		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	1	2	3
16. Leaf litter in channel (January – September)	1.5	✓	0.5	0
17. Sediment on plants or on debris	0	✓	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✓	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✓		Yes = 1.5	

C. **Biology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2	✓	0
21. Rooted plants in channel [1]	3	2	✓	0
22. Crayfish in stream (exclude in floodplain)	0	0.5	1	1.5
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel [2]	0	✓	1	2

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

Total Points = 8.5

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

Notes :

The bed and bank of the drainage channel is infrequent with little to no sorting of substrate.

No surface water or hydric soils encountered throughout the delineated reach.

Wrack lines were observed in portions of the reach. No aquatic fauna were observed.

2 small headcuts observed

FACU/FAC vegetation observed in the thalwag, as well as fibrous roots in the channel.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-4	Date/Time: 05/12/2020 14:30
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.584171, -88.942627 End: 35.584011, -88.943244
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 10 to 20 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [✓] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 12.5

Justification / Notes :

The channel feature drain the excess surface water from WTL-4 and shortly dissipates out into overland sheet flow

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-4

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✓ 2	3
2. Sinuous channel	0	✓ 1	2	3
3. In-channel structure: riffle-pool sequences	0	✓ 1	2	3
4. Sorting of soil textures or other substrate	0	✓ 1	2	3
5. Active/relic floodplain	✓ 0	1	2	3
6. Depositional bars or benches	✓ 0	1	2	3
7. Braided channel	✓ 0	1	2	3
8. Recent alluvial deposits	0	✓ 0.5	1	1.5
9. Natural levees	✓ 0	1	2	3
10. Headcuts	0	✓ 1	2	3
11. Grade controls	✓ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✓ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✓		Yes = 3	

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✓ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✓ 0	1	2	3
16. Leaf litter in channel (January – September)	✓ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✓ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✓ 0.5	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✓		Yes = 1.5	

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

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

Total Points = 12.5

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

Notes :

The bed and bank of the drainage channel is moderate, until it dissipates into overland sheet flow.

No surface water or hydric soils encountered throughout the delineated reach.

Wrack lines were observed in some portions of the reach. No aquatic fauna were observed.

2 small headcuts observed

some FACU/FAC vegetation observed in the thalwag, as well as fibrous roots in the channel.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-5	Date/Time: 05/12/2020 14:45
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.582112, -88.942602 End: 35.583487, -88.943785
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 10 to 20 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [ ] Slight [✓] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 16.0

Justification / Notes :

The channel feature drains the surrounding overland sheet flow and runoff from the adjacent agricultural field.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-5

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 9.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2 ✓	3
2. Sinuous channel	0	1 ✓	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✓	2	3
4. Sorting of soil textures or other substrate	0	✓	2	3
5. Active/relic floodplain	✓	1	2	3
6. Depositional bars or benches	✓	1	2	3
7. Braided channel	✓	1	2	3
8. Recent alluvial deposits	0	✓	1	1.5
9. Natural levees	✓	1	2	3
10. Headcuts	0	✓	2	3
11. Grade controls	✓	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✓	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✓		Yes = 3	

B. **Hydrology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✓	1	2	3
15. Water in channel and >48 hours since sig. rain	0	✓	2	3
16. Leaf litter in channel (January – September)	✓	1	0.5	0
17. Sediment on plants or on debris	✓	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✓	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✓		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2	✓	0
21. Rooted plants in channel [1]	✓	2	1	0
22. Crayfish in stream (exclude in floodplain)	✓	0.5	1	1.5
23. Bivalves/mussels	✓	1	2	3
24. Amphibians	✓	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✓	1	2	3
26. Filamentous algae; periphyton	✓	1	2	3
27. Iron oxidizing bacteria/fungus	✓	0.5	1	1.5
28.Wetland plants in channel [2]	✓	0.5	1	2

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

Total Points = 16.0

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

Notes :

The bed and bank of the drainage channel is present throughout most of the reach with no floodplain.

Surface water in some pools observed, but no hydric soils encountered throughout the delineated reach.

Wrack lines were observed throughout the reach. No aquatic fauna were observed.

3 small headcuts observed

no vegetation observed in the channel, but many fibrous roots were encountered throughout the reach.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-6	Date/Time: 05/12/2020 13:30
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.580866, -88.941912 End: 35.581130, -88.941317
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [ ] Slight [✓] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 12.75

Justification / Notes :

The channel feature drains excess surface waters from WTL-3, which then ultimately dissipates into upland sheet flow.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-6

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 3.75)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✔	2	3
2. Sinuous channel	0 ✔	1	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	✔	1	2	3
5. Active/relic floodplain	0 ✔	1	2	3
6. Depositional bars or benches	✔	1	2	3
7. Braided channel	✔	1	2	3
8. Recent alluvial deposits	✔	0.5	1	1.5
9. Natural levees	✔	1	2	3
10. Headcuts	0	✔	2	3
11. Grade controls	✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5 ✔	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 3.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	✔	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	✔	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 stream bed or sides of channel	No = 0 ✔		Yes = 1.5	

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

[1] Focus is on the presence of upland plants. [2] 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 :

The bed and bank of the drainage channel is infrequent. 1 seasonal groundwater seepage observed.

Little surface water and no hydric soils encountered throughout the delineated reach.

No aquatic fauna were observed.

no sorting observed with upland soils encroaching into drainage channel.

FACU/FAC vegetation observed in the thalwag, as well as many fibrous roots in the channel.

1 small headcut observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-7	Date/Time: 5/29/20 08:20
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.582167, -88.939636
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.582516, -88.940156
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 17.5

Justification / Notes :

The channel feature drains the surrounding area overland sheet flow and potential surface runoff from the agricultural field.

the drainage feature conveys surface waters into STR-2

See notes below for additional justification.

The groundwater connection stream indicator was observed.

Waterbody Name: WWC-7

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 10.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2 ✔	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	0	0.5 ✔	1	1.5
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1	2 ✔	3
11. Grade controls	0	0.5 ✔	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5 ✔	1	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1 ✔	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	1 ✔	0
21. Rooted plants in the thalweg [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	1	2	3
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5 ✔	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 17.5

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

Notes :

Moderate/strong presence of bed and bank with a presence of an OHWM, and some sorting of channel substrates.

Moderate amounts of wrack lines observed along the reach.

4 small sized headcuts and 1 grade control (roots) were observed

Some sediment on patches of FACW vegetation in the thalwag were present too.

No aquatic fauna observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-8	Date/Time: 05/12/2020 11:10
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.582628, -88.939212 End: 35.583117, -88.939953
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [✓] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 14.5

Justification / Notes :

The channel feature drains the surrounding upland sheetflow and the runoff from the adjacent agricultural field into STR-2

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-8

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0 ✔	1	2	3
5. Active/relic floodplain	0 ✔	1	2	3
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1	2 ✔	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5 ✔	1	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1 ✔	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2 ✔	1	0
21. Rooted plants in channel [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	0.5	1	1.5
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel [2]	0 ✔	0.5	1	2

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

Total Points = 14.5

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

Notes :

The bed and bank of the drainage channel is intermittent with moderate amounts of wrack lines.

No surface water, hydric soils, or ground water seepages were encountered throughout the delineated reach.

No aquatic fauna were observed.

Very weak sorting observed with little recent alluvial deposition along the channel.

No vegetation observed in the thalwag, but some fibrous roots were identified.

3 small/moderate headcuts observed

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-9	Date/Time: 5/29/20 08:45
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.583579, -88.94038
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.583674,-88.940054
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 13.0

Justification / Notes :

The channel feature drains the surrounding area overland sheet flow and potential surface runoff from the agricultural field.

the drainage feature conveys surface waters into STR-2

See notes below for additional justification.

The groundwater connection stream indicator was observed.

Waterbody Name: WWC-9

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	0	✔ 1	2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	✔ 0	0.5	1	1.5
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✔ 1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 13.0

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

Notes :

Moderate presence of bed and bank with a presence of an OHWM, and little sorting of channel substrates.

Moderate amounts of wrack lines observed along the reach.

2 small sized headcuts were observed

Some sediment on patches of FAC vegetation in the thalwag were present too.

No aquatic fauna observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-10	Date/Time: 05/12/2020 14:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.585695, -88.940607 End: 35.586550, -88.939519
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [ ] Slight [✓] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 15.75

Justification / Notes :

The channel feature drain upland sheet flow and surface waters from the adjacent agricultural field.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-10

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 8.25)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	0	✔ 1	2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	0	✔ 1	2	3
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	0	✔ 0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✔ 1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	✔ 2	1	0
21. Rooted plants in channel [1]	3	✔ 2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	0.5	1	1.5
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel [2]	0	✔ 0.5	1	2

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

Total Points = 15.75

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

Notes :

The bed and bank of the drainage channel is semi-infrequent until after a headcut, which it becomes stronger.

No surface water or hydric soils encountered throughout the delineated reach.

Wrack lines varied between upper and lower portions of the reach. No aquatic fauna were observed.

minimal sorting observed with upland soils encroaching into drainage channel.

FACU/FAC vegetation observed in the thalwag, as well as some fibrous roots in the channel.

approximately 7 small headcuts observed and 2 grade controls.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-11	Date/Time: 5/29/20 09:15
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.588074, -88.939844
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.587965, -88.939607
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 13.0

Justification / Notes :

The channel feature drains the surrounding area overland sheet flow and potential surface runoff from the agricultural field.

the drainage feature conveys surface waters into STR-2

See notes below for additional justification.

The groundwater connection stream indicator was observed.

Waterbody Name: WWC-11

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	✔ 0	1	2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	✔ 0	0.5	1	1.5
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✔ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	✔ 0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✔ 1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	✔ 1	0
21. Rooted plants in the thalweg [1]	✔ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	✔ 0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 13.0

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

Notes :

Moderate presence of bed and bank,with a presence of an OHWM, and little sorting of channel substrates.

Moderate amounts of wrack lines observed along the reach.

1 small and 1 medium sized headcuts were observed

No vegetation present within the thalwag, fibrous roots were present.

No aquatic fauna observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-12	Date/Time: 5/29/20 09:20
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.588389, -88.938984
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.588414, -88.939218
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 8.5

Justification / Notes :

The channel feature drains the surrounding area overland sheet flow and potential surface runoff from the agricultural field.

the drainage feature conveys surface waters into STR-2

See notes below for additional justification.

The groundwater connection stream indicator was observed.

Waterbody Name: WWC-12

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✔ 1	2	3
2. Sinuous channel	✔ 0	1	2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	✔ 0	0.5	1	1.5
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✔ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 1.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	✔ 0.5	0
17. Sediment on plants or on debris	✔ 0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 8.5

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

Notes :

weak presence of bed and bank,with no OHWM, and little sorting of channel substrates.

little amounts of wrack lines observed along the reach.

1 small sized headcut was observed

Leaf litter and vegetation, as well as fibrous roots, dominate the thalwag of the drainage feature.

No aquatic fauna observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-13	Date/Time: 5/29/20 15:30
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.588708, -88.936154
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.589162, -88.935526
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 12.5

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow

The drainage feature conveys surface waters into STR-1a

See notes below for additional justification.

Waterbody Name: WWC-13

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✔ 1	2	3
2. Sinuous channel	0 ✔	1	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	1.5	✔ 1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2 ✔	1	0
21. Rooted plants in the thalweg [1]	3	✔ 2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	✔ 0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 12.5

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

Notes :

weak presence of bed and bank,with no indicators of an OHWM, and some of sorting of channel substrates.

Some wrack lines observed along the reach.

3 small headcuts were observed

Minimal leaf litter in the channel, little FACU/FAC vegetation in the thalwag, with some fibrous roots in the channel

No aquatic fauna observed

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-14	Date/Time: 5/29/20 15:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.587129, -88.936162
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.587645, -88.934679
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 18.0

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow

The drainage feature conveys surface waters into STR-1a

See notes below for additional justification.

Waterbody Name: WWC-14

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 9.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	0	✔ 1	2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	0	✔ 1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✔ 1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	✔ 2	1	0
21. Rooted plants in the thalweg [1]	✔ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	✔ 0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 18.0

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

Notes :

moderate presence of bed and bank,with an OHWM, and some of sorting of channel substrates.

many wrack lines observed along the reach.

3 small headcuts were observed

No leaf litter in the channel, no FACU/FAC vegetation in the thalwag, with some fibrous roots in the channel

No aquatic fauna observed

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-15	Date/Time: 05/12/2020 08:15
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.585038, -88.937778 End: 35.586823, -88.934870
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: [✓] or [N] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [✓] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 15.75

Justification / Notes :

The channel feature drains the surrounding upland sheetflow and the runoff from the adjacent agricultural field into STR-1a, and has a confluence with WWC-16. No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-15

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 9.25)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✓ 2	3
2. Sinuous channel	0	✓ 1	2	3
3. In-channel structure: riffle-pool sequences	0	✓ 1	2	3
4. Sorting of soil textures or other substrate	0	1	✓ 2	3
5. Active/relic floodplain	0	✓ 1	2	3
6. Depositional bars or benches	✓ 0	1	2	3
7. Braided channel	✓ 0	1	2	3
8. Recent alluvial deposits	0	✓ 0.5	1	1.5
9. Natural levees	✓ 0	1	2	3
10. Headcuts	0	1	✓ 2	3
11. Grade controls	✓ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✓ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✓		Yes = 3	

B. **Hydrology** (Subtotal = 3.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✓ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	0	✓ 1	2	3
16. Leaf litter in channel (January – September)	✓ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✓ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✓ 1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✓		Yes = 1.5	

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

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

Total Points = 15.75

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

Notes :

Bed and Bank morphology strengthens after the confluence of WWC-16, but lacks an Ordinary High Water Mark within the delineated reach. Some pooling of surface water observed, but no hydric soils, or ground water seepages were encountered throughout the delineated reach. No aquatic fauna were observed.

5 medium headcuts were observed along the delineated reach, and some wrack lines along the bank were observed.

Fibrous roots were observed nearly throughout the delineated reach, as well as some FAC/FACU vegetation in the thalwag at the upstream of the confluence with WWC-16.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-16	Date/Time: 05/12/2020 08:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.586450, -88.936987 End: 35.586164, -88.936572
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]

Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

Severe [ ] Moderate [✓] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 10.25

Justification / Notes :

The channel feature drains the surrounding upland sheetflow and the runoff from the adjacent agricultural field into WWC-15, which ultimately drains into STR-1a. No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-16

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 5.75)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✓	2	3
2. Sinuous channel	0 ✓	1	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 ✓	1	2	3
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	✓	2	3
11. Grade controls	0 ✓	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✓	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✓		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✓	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✓	1	2	3
16. Leaf litter in channel (January – September)	1.5	✓	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 stream bed or sides of channel	No = 0 ✓		Yes = 1.5	

C. **Biology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2	1 ✓	0
21. Rooted plants in channel [1]	3	2 ✓	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✓	0.5	1	1.5
23. Bivalves/mussels	0 ✓	1	2	3
24. Amphibians	0 ✓	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✓	1	2	3
26. Filamentous algae; periphyton	0 ✓	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✓	0.5	1	1.5
28.Wetland plants in channel [2]	0	0.5 ✓	1	2

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

Total Points = 10.25

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

Notes :

Bed and Bank morphology semi-present, and lacks an Ordinary High Water Mark within the delineated reach.

No surface water, hydric soils, or ground water seepages were encountered throughout the delineated reach.

No aquatic fauna were observed.

1 medium headcut was observed along the delineated reach, and a few wrack lines along the bank were observed.

Fibrous roots were observed nearly throughout the delineated reach, as well as some FACU vegetation in the thalwag.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-17	Date/Time: 05/12/2020 08:35
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.583269, -88.935296 End: 35.583226, -88.934747
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✔] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✔] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [✔] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✔]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✔]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✔]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 13.25

Justification / Notes :

The channel feature drains the surrounding upland sheetflow and the runoff to the outside of the project site

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-17

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 7.25)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✓ 2	3
2. Sinuous channel	✓ 0	1	2	3
3. In-channel structure: riffle-pool sequences	0	✓ 1	2	3
4. Sorting of soil textures or other substrate	0	✓ 1	2	3
5. Active/relic floodplain	✓ 0	1	2	3
6. Depositional bars or benches	✓ 0	1	2	3
7. Braided channel	✓ 0	1	2	3
8. Recent alluvial deposits	0	✓ 0.5	1	1.5
9. Natural levees	✓ 0	1	2	3
10. Headcuts	0	✓ 1	2	3
11. Grade controls	✓ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✓ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✓		Yes = 3	

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✓ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✓ 0	1	2	3
16. Leaf litter in channel (January – September)	1.5	✓ 1	0.5	0
17. Sediment on plants or on debris	0	✓ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✓ 1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✓		Yes = 1.5	

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

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

Total Points = 13.25

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

Notes :

Bed and Bank morphology present throughout most of the observed channel, but lacks an Ordinary High Water Mark.

No surface water, hydric soils, or ground water seepages were encountered throughout the delineated reach.

No aquatic fauna were observed.

3 small headcuts were observed along the delineated reach, and a few wrack lines along the bank were observed.

Fibrous roots were observed intermittently throughout the delineated reach, as well as a few sections of

FAC/FACU vegetation in the thalwag.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-18	Date/Time: 05/12/2020 09:40
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.583246, -88.936602 End: 35.582821, -88.934693
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: [✓] or [N] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [✓] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 9.5

Justification / Notes :

The channel feature drains the surrounding upland sheetflow and the runoff to the outside of the project site, and potentially the excess surface water from WTL-1. No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-18

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 8.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	0 ✔	1	2	3
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1 ✔	2	3
11. Grade controls	0	0.5 ✔	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 1.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	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 stream bed or sides of channel	No = 0 ✔		Yes = 1.5	

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

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

Total Points = 13.0

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

Notes :

Bed and Bank morphology observed intermittently and lacks an Ordinary High Water Mark.

No surface water, hydric soils, or ground water seepages were encountered throughout the delineated reach.

No aquatic fauna were observed.

2-3 small grade controls and 1 small headcut were observed along the delineated reach, and

a few wrack lines along the bank were observed. Fibrous roots were observed in the upper portion of the reach,

as well as a few sections of FAC/FACU vegetation and non-aquatic moss growing in the thalwag.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-19	Date/Time: 5/29/20 14:10
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.582562, -88.935677
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.582758, -88.935621
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 15.0

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow

The drainage feature conveys surface waters into WWC-18

See notes below for additional justification.

Waterbody Name: WWC-19

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	0 ✔	0.5	1	1.5
6. Depositional bars or benches	0	1 ✔	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1	2 ✔	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

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

C. **Biology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2 ✔	1	0
21. Rooted plants in the thalweg [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	1	2	3
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel bed [2]	0 ✔	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 15.0

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

Notes :

moderate presence of bed and bank,with no OHWM, and some of sorting of channel substrates.

little amounts of wrack lines observed along the reach.

2 medium headcuts were observed

No leaf litter in the channel, no FACU/FAC vegetation in the thalwag, with some fibrous roots in the channel

No aquatic fauna observed

The feature resembles a erosional drainage path

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-20	Date/Time: 5/29/20 13:45
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.581468, -88.931855
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.582222, -88.932339
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 17.5

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow

The drainage feature conveys surface waters into STR-6 and ultimately into STR-3

See notes below for additional justification.

Waterbody Name: WWC-20

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 10.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔	3
2. Sinuous channel	0	1	✔	3
3. In-channel structure: riffle-pool sequences	0	✔	2	3
4. Sorting of soil textures or other substrate	0	1	✔	3
5. Active/relic floodplain	0	✔	1	1.5
6. Depositional bars or benches	0	✔	2	3
7. Braided channel	✔	1	2	3
8. Recent alluvial deposits	0	✔	1	1.5
9. Natural levees	✔	1	2	3
10. Headcuts	✔	1	2	3
11. Grade controls	✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔	1	2	3
15. Water in channel and >48 hours since sig. rain	✔	1	2	3
16. Leaf litter in channel (January – September)	✔	1	0.5	0
17. Sediment on plants or on debris	✔	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 17.5

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

Notes :

Moderate presence of bed and bank,with an OHWM, and sorting of channel substrates

Some wrack lines observed along the reach.

No headcuts or grade controls observed

No leaf litter in the channel, no vegetation in the thalwag, but some fibrous roots in the channel observed

No aquatic fauna observed

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-21	Date/Time: 05/12/2020 10:15
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.580611, -88.937583 End: 35.580371, -88.935379
Previous Rainfall (7-days) : 1.13 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet ☐ wet ☐ average ✔ dry ☐ drought ☐ unknown

Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y ✔ or N ☐ (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

Severe ☐ Moderate ✔ Slight ☐ Absent ☐

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	☐	WWC ☐
2. Defined bed and bank absent, dominated by upland vegetation / grass	☐	WWC ☐
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	☐	WWC ☐
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	☐	WWC ☐
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✔	Stream ☐
6. Presence of fish (except *Gambusia*)	✔	Stream ☐
7. Presence of naturally occurring ground water table connection	✔	Stream ☐
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 17.5

Justification / Notes :

The channel feature drains the surrounding upland sheetflow and the runoff from the adjacent agricultural field into STR-3

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-21

Secondary Field Indicator Evaluation

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

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	✔ 2	1	0
21. Rooted plants in channel [1]	✔ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	0.5	1	1.5
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel [2]	✔ 0	0.5	1	2

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

Total Points = 17.5

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

Notes :

drainage feature starts at a headcut in the ag field. 6 small/medium and 1 large headcut observed throughout the reach.

No surface water, hydric soils, or ground water seepages were encountered throughout the delineated reach.

No aquatic fauna were observed.

Minimal-moderate sorting observed with very little recent alluvial deposition along the channel.

No vegetation observed in the thalwag, but some fibrous roots were identified.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-22	Date/Time: 5/29/20 12:45
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.579171, -88.935602
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.579729, -88.935773
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 20 to 30 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 14.5

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow and the excess surface waters from WTL-18

The drainage feature conveys surface waters into STR-3

See notes below for additional justification.

Feature appears to be man-made channelized to divert the excess water down to STR-3

Waterbody Name: WWC-22

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✔ 1	2	3
2. Sinuous channel	0	✔ 1	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✔ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	✔ 1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5 ✔	

C. **Biology** (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	✔ 1	0
21. Rooted plants in the thalweg [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	✔ 1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 14.5

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

Notes :

Minimal presence of bed and bank,with no OHWM, and some of sorting of channel substrates.

little amounts of wrack lines observed along the reach.

2 small headcuts were observed

Some leaf litter in the channel, FAC/FACW vegetation in the thalwag, with some fibrous roots in the channel

No aquatic fauna observed

Hydric soils were observed in the portion closest to WTL-18

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-23	Date/Time: 5/29/20 12:30
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.577932, -88.937162
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.577996, -88.937002
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Providence silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 11.5

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow

The drainage feature conveys surface waters into STR-3

See notes below for additional justification.

Waterbody Name: WWC-23

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✔ 1	2	3
2. Sinuous channel	0 ✔	1	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0 ✔	1	2	3
5. Active/relic floodplain	✔ 0	0.5	1	1.5
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✔ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	✔ 0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	✔ 2	1	0
21. Rooted plants in the thalweg [1]	✔ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	✔ 0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 11.5

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

Notes :

Minimal presence of bed and bank,with no OHWM, and some of sorting of channel substrates.

little amounts of wrack lines observed along the reach.

2 medium headcut were observed

No leaf litter in the channel, no FACU/FAC vegetation in the thalwag, with some fibrous roots in the channel

No aquatic fauna observed

The feature resembles a erosional drainage path

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-24	Date/Time: 5/29/20 12:25
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.577765, -88.936904
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.577899, -88.937011
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Providence silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 11.5

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow

The drainage feature conveys surface waters into STR-3

See notes below for additional justification.

Waterbody Name: WWC-24

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✔ 1	2	3
2. Sinuous channel	0 ✔	1	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0 ✔	1	2	3
5. Active/relic floodplain	✔ 0	0.5	1	1.5
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✔ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	✔ 0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	✔ 2	1	0
21. Rooted plants in the thalweg [1]	✔ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	✔ 0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 11.5

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

Notes :

Minimal presence of bed and bank,with no OHWM, and some of sorting of channel substrates.

little amounts of wrack lines observed along the reach.

2 medium headcut were observed

No leaf litter in the channel, no FACU/FAC vegetation in the thalwag, with some fibrous roots in the channel

No aquatic fauna observed

The feature resembles a erosional drainage path

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-25	Date/Time: 05/13/2020 09:45
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.576147, -88.936769 End: 35.576613, -88.937709
Previous Rainfall (7-days) : 0.76 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]

Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

Severe [ ] Moderate [ ] Slight [✓] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 15.5

Justification / Notes :

The channel feature drains the surrounding overland sheet flow and runoff from the adjacent agricultural field.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-25

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	0 ✔	1	2	3
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1 ✔	2	3
11. Grade controls	0	0.5 ✔	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	1 ✔	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✔	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2 ✔	1	0
21. Rooted plants in channel [1]	3	2 ✔	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	0.5	1	1.5
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel [2]	0	0.5	1 ✔	2

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

Total Points = 15.5

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

Notes :

The bed and bank of the drainage channel is intermittent, with occasional spots of loss.

No surface water and hydric soils encountered throughout the delineated reach.

Wrack lines were observed intermittently throughout the reach. No aquatic fauna were observed.

2 small headcuts and 1 grade control observed

Some FACU/FAC vegetation observed in the loss of channel areas of the drainage, as well as intermittent portions of fibrous roots in the channel.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-26	Date/Time: 5/29/20 11:50
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.575855, -88.937317
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.575897, -88.937751
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 15.5

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow and the excess surface waters from WTL-5

the drainage feature conveys surface waters into STR-3

See notes below for additional justification.

Waterbody Name: WWC-26

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	0	✔ 1	2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✔ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	✔ 1	0
21. Rooted plants in the thalweg [1]	3	✔ 2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	✔ 0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 15.5

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

Notes :

moderate presence of bed and bank,with indicators of an OHWM, and some of sorting of channel substrates.

little amounts of wrack lines observed along the reach.

1 very large headcut/cascade was observed

No leaf litter in the channel, little to no FACU/FAC vegetation in the thalwag, with some fibrous roots in the channel

No aquatic fauna observed

Water potentially originates from excess waters of WTL-5 that go into overland sheet flow in the agricultural field

and are then diverted into the man-made channel of WWC-26 and WWC-27.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-27	Date/Time: 5/29/20 11:55
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.575828, -88.937341
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.575904, -88.937756
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 15.5

Justification / Notes :

The Channel feature drains the surrounding area overland sheet flow and the excess surface waters from WTL-5

the drainage feature conveys surface waters into STR-3, identical to WWC-26

See notes below for additional justification.

Waterbody Name: WWC-27

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	0	✔ 1	2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✔ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	✔ 1	0
21. Rooted plants in the thalweg [1]	3	✔ 2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	✔ 0	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 15.5

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

Notes :

moderate presence of bed and bank,with indicators of an OHWM, and some of sorting of channel substrates.

little amounts of wrack lines observed along the reach.

1 very large headcut/cascade was observed

No leaf litter in the channel, little to no FACU/FAC vegetation in the thalwag, with some fibrous roots in the channel

No aquatic fauna observed

Water potentially originates from excess waters of WTL-5 that go into overland sheet flow in the agricultural field

and are then diverted into the man-made channel of WWC-26 and WWC-27.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-28	Date/Time: 5/29/20 11:15
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: Between James Lawrence Road and Womack Lane in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.576618, -88.939543
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.576854, -88.93914
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Soil UnitProvidence silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 13.5

Justification / Notes :

The channel feature drains the surrounding area overland sheet flow and potential surface runoff from the agricultural field.

the drainage feature conveys surface waters into STR-4 and ultimately STR-3

See notes below for additional justification.

The groundwater connection stream indicator was observed.

Waterbody Name: WWC-28

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 7.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	✔ 0	1	2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	✔ 0	0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✔ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	✔ 1	0
21. Rooted plants in the thalweg [1]	3	✔ 2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	✔ 0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 13.5

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

Notes :

moderate presence of bed and bank,with indicators of an OHWM, and little sorting of channel substrates.

little amounts of wrack lines observed along the reach.

2 small sized headcut was observed

No leaf litter in the channel, but some FACU/FAC vegetation in the thalwag with some sediment on the leaves

No aquatic fauna observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-29	Date/Time: 05/13/2020 12:45
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: East of State Route 223 in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050303	Lat/Long: Start: 35.573684, -88.928672 End: 35.57666, -88.92499
Previous Rainfall (7-days) : 0.76 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]

Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Grenada silt loam, 2 to 5 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

Severe [ ] Moderate [✓] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 17.25

Justification / Notes :

The channel feature drains the excess surface water from WTL-8 and WTL-9, as well as the surrounding sheet flow.

The drainage enters and leaves the Project limits 3 times (WWC-29a, 29b & 29c).

No primary stream indicators observed. See notes below for additional justification.

Waterbody Name: WWC-29

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 7.75)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	0	1	✔ 2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	0	✔ 1	2	3
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	✔ 1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0		Yes = 1.5 ✔	

C. **Biology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2	✔ 1	0
21. Rooted plants in channel [1]	3	✔ 2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	0.5	1	1.5
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	0	✔ 1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel [2]	0	0.5	✔ 1	2

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

Total Points = 17.25

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

Notes :

The bed and bank of the drainage channel is intermittent, with occasional spots of loss.

No surface water, but hydric soils were encountered throughout the delineated reach.

Wrack lines were observed throughout the reach. No aquatic fauna were observed.

2 small headcuts observed

Some FACU/FAC vegetation observed in the loss of channel areas of the drainage, as well as intermittent portions of fibrous roots in the channel.

Substrate sorting was localized after scour pools only

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-30	Date/Time: 5/28/20 09:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.568716, -88.946061
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.569011, -88.945999
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 10 to 20 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities, Residential homes	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 14.5

Justification / Notes :

The channel feature drains the excess surface water from WTL-15, as well as the surrounding upland sheet flow.

Surface water flows north into STR-10.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-30

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	0	0.5 ✔	1	1.5
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0 ✔	0.5	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1 ✔	2	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5 ✔	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0	1 ✔	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	1 ✔	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✔	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5 ✔	

C. **Biology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	1 ✔	0
21. Rooted plants in the thalweg [1]	3	2	1 ✔	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	1	2	3
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5 ✔	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 14.5

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

Notes :

Bed and bank is intermittent between areas of ground water seepages, with little substrate sorting

Ground water likely originates from WTL-15.

FAC/FACW vegetation observed in the thalwag, as well as a presence of of fiberous roots along the channel.

1-2 small headcuts observed.

Some wrack lines observed along the channel too.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-31	Date/Time: 5/28/20 14:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.572558, -88.920780
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.572349, -88.919986
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 8 to 12 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 15.5

Justification / Notes :

The channel feature conveys the surrounding upland sheet flow and agricultural field drainage to a culvert.

The culvert is under an historic railroad bed

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-31

Secondary Field Indicator Evaluation

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

B. **Hydrology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	✔ 1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	✔ 1	0
21. Rooted plants in the thalweg [1]	3	2	✔ 1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	✔ 0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 15.5

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

Notes :

Bed and bank is moderate with a slight presence of an OHWM, with slight presence of benching.

All surface water drains into a culvert, which continues off site

FACU/FAC vegetation observed in the thalwag,and a moderate presence of of fibrous roots were observed.

The drainage feature starts at a medium sized headcut.

Some wrack lines observed along the channel.

Some sorting observed

No aquatic fauna observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-32	Date/Time: 5/28/20 14:10
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.572929, -88.919547
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.572379, -88.920053
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 8 to 12 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 14.5

Justification / Notes :

The channel feature conveys the surrounding upland sheet flow and agricultural field drainage into WWC-31.

The culvert is under an historic railroad bed

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-32

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	0	1	✔ 2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	✔ 0	0.5	1	1.5
6. Depositional bars or benches	0	✔ 1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✔ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5	✔ 1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	✔ 1	0
21. Rooted plants in the thalweg [1]	3	2	✔ 1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	✔ 0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 14.5

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

Notes :

Bed and bank is moderate, with slight presence of benching and a moderate sinosity.

All surface water drains into WWC-31 and a culvert, which continues off site

FACU/FAC vegetation observed in the thalwag,and a moderate presence of of fibrous roots were observed.

The drainage feature starts at a small sized headcut.

Some wrack lines observed along the channel.

Some sorting observed

No aquatic fauna observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-33	Date/Time: 5/28/20 14:12
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.572409, -88.920971 End: 35.572423, -88.920549
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 8 to 12 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 11.5

Justification / Notes :

The channel feature conveys the surrounding upland sheet flow and agricultural field drainage into WWC-31.

The culvert is under an historic railroad bed

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-33

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 7.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	0 ✔	0.5	1	1.5
6. Depositional bars or benches	0	1 ✔	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1 ✔	2	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5 ✔	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	1 ✔	0.5	0
17. Sediment on plants or on debris	0	0.5	1 ✔	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✔	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	1 ✔	0
21. Rooted plants in the thalweg [1]	3	2	1 ✔	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	1	2	3
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5 ✔	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 11.5

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

Notes :

Bed and bank is semi-moderate to week, with slight presence of benching and a sinuosity.

All surface water drains into WWC-31 and a culvert, which continues off site

FACU/FAC vegetation observed in the thalwag,and a moderate presence of of fibrous roots were observed.

The drainage feature starts at a small sized headcut.

Some wrack lines observed along the channel.

Some sorting observed

No aquatic fauna observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-34	Date/Time: 5/28/20 12:30
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.570200, -88.925107
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.569010, -88.924585
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 18.0

Justification / Notes :

The channel feature conveys the surrounding upland sheet flow and agricultural field drainage into STR-14

The drainage is culverted under an historic railroad bed

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-34

Secondary Field Indicator Evaluation

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

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	1 ✔	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1 ✔	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	1 ✔	0
21. Rooted plants in the thalweg [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	1	2	3
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel bed [2]	0 ✔	0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 18.0

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

Notes :

Bed and bank is moderate/strong with a lack of an OHWM.

All surface water drains into STR-14, and little to no surface water was observed along the feature.

No vegetation observed in the thalwag, but a moderate presence of of fibrous roots along the channel was observed.

2 small headcuts observed.

A small amount of wrack lines observed along the channel.

Some sorting observed

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-35	Date/Time: 5/28/20 12:40
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.569582, -88.924234 End: 35.569231, -88.924573
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ☑ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 13.5

Justification / Notes :

The channel feature conveys the surrounding upland sheet flow and agricultural field drainage into WWC-34

The drainage is culverted under an historic railroad bed

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-35

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0 ✔	1	2	3
5. Active/relic floodplain	0 ✔	0.5	1	1.5
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1 ✔	2	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5 ✔	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	1 ✔	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✔	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	1 ✔	0
21. Rooted plants in the thalweg [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	1	2	3
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	1 ✔	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 13.5

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

Notes :

Bed and bank is week/moderate with a slight presence of an OHWM.

All surface water drains into STR-14 ultimately, and little to no surface water was observed along the feature.

FACW vegetation observed in the thalwag,and a moderate presence of of fibrous roots were observed.

2 small headcuts observed.

Some wrack lines observed along the channel.

Some sorting observed

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-36	Date/Time: 5/28/20 10:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start:35.566924, -88.928111
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.566671,-88.928083
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 12.5

Justification / Notes :

The channel feature drains conveys the surrounding upland sheet flow into STR-7.

A raised grassy roadway (historically a railroad) is located nearby

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-36

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0 ✔	1	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	0 ✔	0.5	1	1.5
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1	2 ✔	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	1 ✔	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✔	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 12.5

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

Notes :

Bed and bank is moaderate to week with a lack of a OHWM.

All surface water likely drains into STR-7, and one plunge pool (after a headcut) had 1" of water.

FAC/FACU vegetation observed in the thalwag, as well as a presence of of fiberous roots along the channel.

2 moderate headcuts observed.

Some wrack lines observed along the channel too.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-37	Date/Time: 5/28/20 10:10
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.567009, -88.928544 End: 35.566841, -88.928596
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 17.5

Justification / Notes :

The channel feature conveys the surrounding upland sheet flow into STR-7.

The area is heavily dominated with kudzu and appears to been disturbed by agricultural activity.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-37

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 9.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2 ✔	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1	2 ✔	3
5. Active/relic floodplain	0 ✔	0.5	1	1.5
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1	2 ✔	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 3.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5 ✔	1	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1 ✔	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 17.5

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

Notes :

Bed and bank is semi-strong with a presence of an OHWM and a presnece of sorting along the channel.

All surface water likely drains into STR-7, but no surface water was observed along the feature.

FAC/FACW vegetation observed in the thalwag, as well as a presence of of fiberous roots along the channel.

3 small headcuts observed.

A moderate amounts of wrack lines observed along the channel too.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-38	Date/Time: 5/28/20 10:47
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.568981, -88.929969 End: 35.568842, -88.930276
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 13.5

Justification / Notes :

The channel feature conveys the surrounding upland sheet flow and potential overflow from WTL-16 into STR-8.

The area is heavily dominated with kudzu and appears to been disturbed by agricultural activity.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-38

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 6.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	0 ✔	1	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	✔ 0	0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	✔ 0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	1.5	✔ 1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

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

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 13.5

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

Notes :

Bed and bank is moderate with a lack of an OHWM and a presence of little sorting along the channel.

All surface water likely drains into STR-8, but no surface water was observed along the feature.

Little to no vegetation observed in the thalwag, with some presence of of fiberous roots along the channel.

2 small headcuts observed.

A small amounts of wrack lines observed along the channel too.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-39	Date/Time: 5/28/20 11:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID :
Site Name/Description: Silicon Ranch McKellar / Solar Farm	#3609510
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.567241, -88.936162
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.569198, -88.933163
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 17.5

Justification / Notes :

The channel feature conveys the surrounding upland sheet flow and potential overflow from WTL-111 into STR-7.

The area is heavily dominated with kudzu and appears to been disturbed by agricultural activity.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-39

Secondary Field Indicator Evaluation

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

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	✔ 1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	✔ 1	0
21. Rooted plants in the thalweg [1]	3	✔ 2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5	✔ 1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 17.5

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

Notes :

Bed and bank is moderate with a lack of an OHWM and intermittent loss of bed and bank.

All surface water likely drains into STR-7, and little to no surface water was observed along the feature.

FACW/FAC/FACU vegetation observed in the thalwag, with a presence of of fibrous roots along the channel.

2 small headcuts observed.

A small amounts of wrack lines observed along the channel.

Some sorting observed

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-40	Date/Time: 5/28/20 11:15
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: East of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050303	Lat/Long: Start: 35.569429, -88.935412
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	End: 35.568654, -88.934225
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ☑ low ☐ abnormally dry ☐ unknown Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☑ Slight ☐ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 15.5

Justification / Notes :

The channel feature conveys the surrounding upland sheet flow and agricultural field drainage intp STR-7

The area is heavily dominated with kudzu and appears to been disturbed by agricultural activity.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-40

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	✔ 0	1	2	3
3. In-channel structure: riffle-pool sequences	0	✔ 1	2	3
4. Sorting of soil textures or other substrate	0	✔ 1	2	3
5. Active/relic floodplain	0	✔ 0.5	1	1.5
6. Depositional bars or benches	0	✔ 1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	✔ 0.5	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	✔ 1	2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	✔ 0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0	✔ 0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	✔ 1	0
21. Rooted plants in the thalweg [1]	✔ 3	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	1	2	3
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	✔ 0.5	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 15.5

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

Notes :

Bed and bank is moderate with a lack of an OHWM.

All surface water likely drains into STR-7, and little to no surface water was observed along the feature.

FAC/FACU vegetation observed in the thalwag, with a presence of of fibrous roots along the channel.

2 small headcuts observed.

A small amount of wrack lines observed along the channel.

Some sorting observed

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-41	Date/Time: 05/14/2020 08:00
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: East of State Route 223 in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050303	Lat/Long: Start: 35.571343, -88.933593 End: 35.571404, -88.933361
Previous Rainfall (7-days) : 0.78 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Lexington silt loam, 5 to 8 percent slopes, severely eroded Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [✓] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 12.5

Justification / Notes :

The channel feature connects WTL-13a and WTL-13b together.

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-41

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✔	2	3
2. Sinuous channel	0	✔	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0 ✔	1	2	3
5. Active/relic floodplain	0 ✔	1	2	3
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0 ✔	1	2	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5 ✔	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 3.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	✔	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 stream bed or sides of channel	No = 0		Yes = 1.5 ✔	

C. **Biology** (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2	✔	0
21. Rooted plants in channel [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	0.5	1	1.5
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel [2]	0	0.5	✔	2

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

Total Points = 12.5

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

Notes :

The bed and bank of the drainage channel is weak with frequent loss of channel.

No surface water, but hydric soils were encountered throughout the delineated reach.

Wrack lines were observed sparsely along the reach. No aquatic fauna were observed.

Some FACU/FAC vegetation observed in the loss of channel areas of the drainage, as well as intermittent portions of fibrous roots in the channel.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-42	Date/Time: 05/14/2020 10:30
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: East of State Route 223 in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.570202, -88.945179 End: 35.570442, -88.94578
Previous Rainfall (7-days) : 0.78 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✔] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✔] or N [ ] (circle) Number :

Soil Type(s) / Geology : Lexington silt loam, 8 to 12 percent slopes, severely eroded Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [ ] Slight [✔] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✔]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✔]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✔]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 19.0

Justification / Notes :

The channel feature drains the surrounding are overland sheet flow and has a likely confluence with STR-11

No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-42

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 10.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	✔ 2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1	✔ 2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	✔ 0	1	2	3
6. Depositional bars or benches	✔ 0	1	2	3
7. Braided channel	✔ 0	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	✔ 0	1	2	3
10. Headcuts	0	1	✔ 2	3
11. Grade controls	✔ 0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	✔ 1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✔ 0	1	2	3
15. Water in channel and >48 hours since sig. rain	✔ 0	1	2	3
16. Leaf litter in channel (January – September)	✔ 1.5	1	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✔	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0		Yes = 1.5 ✔	

C. **Biology** (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	✔ 2	1	0
21. Rooted plants in channel [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	✔ 0	0.5	1	1.5
23. Bivalves/mussels	✔ 0	1	2	3
24. Amphibians	✔ 0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✔ 0	1	2	3
26. Filamentous algae; periphyton	✔ 0	1	2	3
27. Iron oxidizing bacteria/fungus	✔ 0	0.5	1	1.5
28.Wetland plants in channel [2]	✔ 0	0.5	1	2

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

Total Points = 19.0

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

Notes :

The bed and bank of the drainage channel becomes more defined after a large headcut.

No surface water, but hydric soils were encountered throughout lower half of the delineated reach.

Wrack lines were observed sparsely along the reach. No aquatic fauna were observed.

Little to no vegetation observed in the upper and lower portions of the reach. some fibrous roots observed.

2 small headcuts and 1 large headcut observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-43	Date/Time: 05/14/2020 10:35
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: East of State Route 223 in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.569999, -88.946070 End: 35.570157, -88.946163
Previous Rainfall (7-days) : 0.78 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet ☐ wet ☐ average ✔ dry ☐ drought ☐ unknown ☐

Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y ✔ or N ☐ (circle) Number :

Soil Type(s) / Geology : Lexington silt loam, 8 to 12 percent slopes, severely eroded Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :

Severe ☐ Moderate ✔ Slight ☐ Absent ☐

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	☐	WWC ☐
2. Defined bed and bank absent, dominated by upland vegetation / grass	☐	WWC ☐
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	☐	WWC ☐
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	☐	WWC ☐
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	✔	Stream ☐
6. Presence of fish (except *Gambusia*)	✔	Stream ☐
7. Presence of naturally occurring ground water table connection	✔	Stream ☐
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 7.5

Justification / Notes :

The channel feature drains the surrounding are overland sheet flow and the adjacent agricultureal field.

All surface water in WWC-43 drains into STR-11a. No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-43

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✓	2	3
2. Sinuous channel	0	✓	2	3
3. In-channel structure: riffle-pool sequences	✓	1	2	3
4. Sorting of soil textures or other substrate	0	✓	2	3
5. Active/relic floodplain	✓	1	2	3
6. Depositional bars or benches	✓	1	2	3
7. Braided channel	✓	1	2	3
8. Recent alluvial deposits	✓	0.5	1	1.5
9. Natural levees	✓	1	2	3
10. Headcuts	0	1	✓	3
11. Grade controls	✓	0.5	1	1.5
12. Natural valley or drainageway	0	✓	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✓		Yes = 3	

B. **Hydrology** (Subtotal = 1.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	✓	1	2	3
15. Water in channel and >48 hours since sig. rain	✓	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	✓	0
17. Sediment on plants or on debris	0	✓	1	1.5
18. Organic debris lines or piles (wrack lines)	✓	0.5	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✓		Yes = 1.5	

C. **Biology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2	✓	0
21. Rooted plants in channel [1]	3	2	✓	0
22. Crayfish in stream (exclude in floodplain)	✓	0.5	1	1.5
23. Bivalves/mussels	✓	1	2	3
24. Amphibians	✓	0.5	1	1.5
25. Macrobenthos (record type & abundance)	✓	1	2	3
26. Filamentous algae; periphyton	✓	1	2	3
27. Iron oxidizing bacteria/fungus	✓	0.5	1	1.5
28.Wetland plants in channel [2]	0	✓	1	2

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

Total Points = 7.5

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

Notes :

The channel is within an eroded area with little to no defined bed and bank.

No surface water and no hydric soils were encountered throughout the delineated reach.

Wrack lines were observed sparsely along the reach. No aquatic fauna were observed.

The channel was lined with leaf litter and FACU/FAC vegetation. Moderate amounts of Fibrous roots also observed.

2-3 small/moderate headcuts start the feature.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC-44	Date/Time: 5/28/20 14:45
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc)	Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar / Solar Farm	
Site Location: South of State Route 223 in Jackson, TN	
HUC (12 digit): 080102050305	Lat/Long: Start: 35.569392, -88.948632 End: 35.570767, -88.949218
Previous Rainfall (7-days) : 1.14 inches (CoCoRaHS TN-MD-29)	
Precipitation this Season vs. Normal : abnormally wet ☐ elevated ☐ average ✔ low ☐ abnormally dry ☐ unknown ☐ Source of recent & seasonal precip data :	
Watershed Size : N/A	County: Madison Co.
Soil Type(s) / Geology : Smithdale soils, 10 to 20 percent slopes	Source: NRCS
Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities	
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe ☐ Moderate ☐ Slight ✔ Absent ☐	

Primary Field Indicators Observed

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

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

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

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

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 6.0

Justification / Notes :

The channel feature drains the surrounding are overland sheet flow and has a likely confluence with STR-11

Feature is likely a relic channel prior to the creation of man-made pond WTL-14

See notes below for additional justification.

No primary stream indicators observed.

Waterbody Name: WWC-44

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 5.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0 ✔	1	2	3
5. Active/relic floodplain	0 ✔	0.5	1	1.5
6. Depositional bars or benches	0	1 ✔	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0 ✔	0.5	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1 ✔	2	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 0.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5	0 ✔
17. Sediment on plants or on debris	0 ✔	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)	0 ✔	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 1.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed [1]	3	2	1	0 ✔
21. Rooted plants in the thalweg [1]	3	2	1 ✔	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	1	2	3
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel bed [2]	0	0.5 ✔	1	1.5

[1] Focus is on the presence of terrestrial plants.

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

Total Points = 6.0

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

Notes :

The drainage feature resembles a relic stream bed, but is now dominated with leaf litter and vegetation

A true bed and bank were weak, with little benching.

FACU/FAC vegetation observed throughout the thalwag and drainage vallley

The drainage feature starts at a small sized headcut.

No aquatic fauna observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-45	Date/Time: 05/14/2020 11:45
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: East of State Route 223 in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.570099, -88.950035 End: 35.570641, -88.950594
Previous Rainfall (7-days) : 0.78 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✓] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✓] or N [ ] (circle) Number :

Soil Type(s) / Geology : Smithdale soils, 10 to 20 percent slopes Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [ ] Moderate [ ] Slight [✓] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✓]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✓]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✓]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 14.5

Justification / Notes :

The channel feature drains the surrounding area overland sheet flow and the adjacent agricultureal field.

All surface water in WWC-45 drains out into overland sheet flow at its northern limit. No primary stream indicators observed.

See notes below for additional justification.

Waterbody Name: WWC-45

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 8.0)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✔	2	3
2. Sinuous channel	0	1 ✔	2	3
3. In-channel structure: riffle-pool sequences	0	1 ✔	2	3
4. Sorting of soil textures or other substrate	0	1 ✔	2	3
5. Active/relic floodplain	0 ✔	1	2	3
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0	0.5 ✔	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0	1 ✔	2	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1 ✔	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.5)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	1 ✔	0.5	0
17. Sediment on plants or on debris	0	0.5 ✔	1	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5	1 ✔	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2 ✔	1	0
21. Rooted plants in channel [1]	3 ✔	2	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	0.5	1	1.5
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel [2]	0 ✔	0.5	1	2

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

Total Points = 14.5

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

Notes :

The channel is within an eroded area with a intermittent bed and bank, at which the downstream portion dissipates out into overland sheet flow. some sorting observed and riffle/pool sequence was nearly absent.

Wrack lines were observed along the reach.

The channel had FACU/FAC vegetation in the thalwag, with intermediate amounts of Fibrous roots also observed.

4 small/moderate headcuts start the feature.

No surface water and no hydric soils were encountered throughout the delineated reach.

No aquatic fauna were observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-46	Date/Time: 05/14/2020 13:15
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: East of State Route 223 in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.568035, -88.945390 End: 35.569061, -88.946052
Previous Rainfall (7-days) : 0.78 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✔] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✔] or N [ ] (circle) Number :

Soil Type(s) / Geology : Lexington silt loam, 8 to 12 percent slopes, severely eroded Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [✔] Moderate [ ] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✔]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✔]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✔]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) = 13.5

Justification / Notes :

The drainage feature flows into a catch basin, where water that possibly once flowed now become stagnant.

Bed form diversity and an OHWM were lacking in the feature.

Excess surface water from the catch basin flows into STR-11a.

See notes below for additional justification.

Waterbody Name: WWC-46

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1 ✓	2	3
2. Sinuous channel	0	1 ✓	2	3
3. In-channel structure: riffle-pool sequences	0 ✓	1	2	3
4. Sorting of soil textures or other substrate	0 ✓	1	2	3
5. Active/relic floodplain	0 ✓	1	2	3
6. Depositional bars or benches	0 ✓	1	2	3
7. Braided channel	0 ✓	1	2	3
8. Recent alluvial deposits	0 ✓	0.5	1	1.5
9. Natural levees	0 ✓	1	2	3
10. Headcuts	0 ✓	1	2	3
11. Grade controls	0 ✓	0.5	1	1.5
12. Natural valley or drainageway	0	0.5 ✓	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3 ✓	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✓	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✓	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5 ✓	0
17. Sediment on plants or on debris	0	0.5	1 ✓	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✓	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✓		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2 ✓	1	0
21. Rooted plants in channel [1]	3	2 ✓	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✓	0.5	1	1.5
23. Bivalves/mussels	0 ✓	1	2	3
24. Amphibians	0 ✓	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✓	1	2	3
26. Filamentous algae; periphyton	0 ✓	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✓	0.5	1	1.5
28.Wetland plants in channel [2]	0	0.5	1 ✓	2

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

Total Points = 13.5

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

Notes :

Channel potential altered with the addition of catch basin, weakening stream and drainage features.

No wetland soils or hydrology observed in catch basin and swale areas.

Little to no defined bed and bank or ohwm, little to no wrack lines.

Fibrous roots present in channel, leaf litter present, no hydric soils (bright orange), fac vegetation in thalwag

No aquatic fauna were observed.

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.4

County: Madison Co.	Named Waterbody: WWC-47	Date/Time: 05/14/2020 13:20
Assessors/Affiliation: F. Amatucci & N. Carmean (Barge Design Solutions, Inc		Project ID : #3609510
Site Name/Description: Silicon Ranch McKellar		
Site Location: East of State Route 223 in Jackson, TN		
USGS quad: Westover	HUC (12 digit): 080102050305	Lat/Long: Start: 35.568716, -88.946061 End: 35.569011, -88.945999
Previous Rainfall (7-days) : 0.78 inches (CoCoRaHS TN-MD-29)		

Precipitation this Season vs. Normal : very wet [ ] wet [ ] average [✔] dry [ ] drought [ ] unknown [ ]
Source of recent & seasonal precip data :

Watershed Size : N/A

Photos: Y [✔] or N [ ] (circle) Number :

Soil Type(s) / Geology : Lexington silt loam, 8 to 12 percent slopes, severely eroded Source: NRCS

Surrounding Land Use : Woodland, Agricultural Fields, Commercial utilities/facilities

Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :
Severe [✔] Moderate [ ] Slight [ ] Absent [ ]

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	[ ]	WWC [ ]
2. Defined bed and bank absent, dominated by upland vegetation / grass	[ ]	WWC [ ]
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	[ ]	WWC [ ]
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	[ ]	WWC [ ]
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	[✔]	Stream [ ]
6. Presence of fish (except *Gambusia*)	[✔]	Stream [ ]
7. Presence of naturally occurring ground water table connection	[✔]	Stream [ ]
8. Flowing water in channel and 7 days since last precipitation 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 STOP; absent directly contradictory evidence, determination is complete.

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 1.4*

Overall Hydrologic Determination = WWC

Secondary Indicator Score (if applicable) =

Justification / Notes :

The drainage feature flows into a catch basin, where water that possibly once flowed now become stagnant.

Bed form diversity and an OHWM were lacking in the feature.

Excess surface water from the catch basin flows into STR-11a.

See notes below for additional justification.

Waterbody Name: WWC-47

Secondary Field Indicator Evaluation

A. **Geomorphology** (Subtotal = 3.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	✔	2	3
2. Sinuous channel	0 ✔	1	2	3
3. In-channel structure: riffle-pool sequences	0 ✔	1	2	3
4. Sorting of soil textures or other substrate	0 ✔	1	2	3
5. Active/relic floodplain	0 ✔	1	2	3
6. Depositional bars or benches	0 ✔	1	2	3
7. Braided channel	0 ✔	1	2	3
8. Recent alluvial deposits	0 ✔	0.5	1	1.5
9. Natural levees	0 ✔	1	2	3
10. Headcuts	0 ✔	1	2	3
11. Grade controls	0 ✔	0.5	1	1.5
12. Natural valley or drainageway	0	0.5 ✔	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0 ✔		Yes = 3	

B. **Hydrology** (Subtotal = 2.0)	Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel	0 ✔	1	2	3
15. Water in channel and >48 hours since sig. rain	0 ✔	1	2	3
16. Leaf litter in channel (January – September)	1.5	1	0.5 ✔	0
17. Sediment on plants or on debris	0	0.5	✔	1.5
18. Organic debris lines or piles (wrack lines)	0	0.5 ✔	1	1.5
19. Hydric soils in stream bed or sides of channel	No = 0 ✔		Yes = 1.5	

C. **Biology** (Subtotal = 4.0)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel [1]	3	2 ✔	1	0
21. Rooted plants in channel [1]	3	2 ✔	1	0
22. Crayfish in stream (exclude in floodplain)	0 ✔	0.5	1	1.5
23. Bivalves/mussels	0 ✔	1	2	3
24. Amphibians	0 ✔	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0 ✔	1	2	3
26. Filamentous algae; periphyton	0 ✔	1	2	3
27. Iron oxidizing bacteria/fungus	0 ✔	0.5	1	1.5
28.Wetland plants in channel [2]	0	0.5	✔	2

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

Total Points = 9.5

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

Notes :

Channel potential altered with the addition of catch basin, weakening stream and drainage features.

No wetland soils or hydrology observed in catch basin and swale areas.

Little to no defined bed and bank or ohwm, little to no wrack lines.

Fibrous roots present in channel, leaf litter present, no hydric soils (bright orange), fac vegetation in thalwag

No aquatic fauna were observed.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/11/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-1

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.583483 Long: -88.93762 Datum: NAD83

Soil Map Unit Name: Loring silt loam, 2 to 5 percent slopes, severely eroded NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Area has been converted into a farm pond

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- ____ Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:

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

Sampling Point: WTL-1

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	20	=Total Cover	
50% of total cover: 10		20% of total cover:	4
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Cephalanthus occidentalis*	45	Yes	OBL
2. *Liquidambar styraciflua*	15	No	FAC
3. *Campsis radicans*	35	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	95	=Total Cover	
50% of total cover: 48		20% of total cover:	19
Herb Stratum (Plot size: 5 feet)			
1. *Toxicodendron radicans*	25	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	140 (A)		330 (B)

Prevalence Index = B/A = 2.36

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: WTL-1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Loamy/Clayey	
4-18	10YR 5/2	60	10YR 5/6	40	c	m	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Organic Bodies (A6) **(LRR, P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) (**MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
X Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/11/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-1

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Farm Field Local relief (concave, convex, none): Flat Slope (%): 0-2%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.583622 Long: -88.937654 Datum: NAD83

Soil Map Unit Name: Loring silt loam, 2 to 5 percent slopes, severely eroded NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

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

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus macrocarpa*	20	Yes	FACU
2. *Liquidambar styraciflua*	45	Yes	FAC
3. *Ulmus rubra*	35	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	100	=Total Cover	
50% of total cover: 50	20% of total cover: 20		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Liquidambar styraciflua*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	15	=Total Cover	
50% of total cover: 8	20% of total cover: 3		
Herb Stratum (Plot size: 5 feet)			
1. *Parthenocissus quinquefolia*	25	Yes	FACU
2. *Perilla frutescens*	30	Yes	FACU
3. *Toxicodendron radicans*	25	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	=Total Cover	
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	120	x 3 =	360
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	195 (A)		660 (B)

Prevalence Index = B/A = 3.38

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-1

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	100					Sandy	
3-18	10YR 5/6	100					Loamy/Clayey	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-2

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.578007 Long: -88.941498 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 8 to 12 percent slopes, severely eroded NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Area has been converted into a farm pond

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- ____ Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:

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

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus nigra*	35	Yes	FAC
2. *Salix nigra*	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover: 9	
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Cephalanthus occidentalis*	35	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover: 7	
Herb Stratum (Plot size: 5 feet)			
1. *Campsis radicans*	5	Yes	FAC
2. *Vitis rotundifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover: 3	
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	0	x 2 =	0
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		195 (B)

Prevalence Index = B/A = 2.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: WTL-2

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1	100					Loamy/Clayey	
6-18	10YR 6/1	65	10YR 5/6	30	c	m	Loamy/Clayey	Prominent redox concentrations
			10YR 2/1	5	c	m		Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- X Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-2

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Berm / Terrace Local relief (concave, convex, none): Convex Slope (%): 1-3%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.578095 Long: -88.941422 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 8 to 12 percent slopes, severely eroded NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

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

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Cercis canadensis*	35	Yes	UPL
2. *Liquidambar styraciflua*	20	Yes	FAC
3. *Ulmus rubra*	45	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	100	=Total Cover	
50% of total cover: 50		20% of total cover:	20
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Cornus florida*	35	Yes	UPL
2. *Ulmus rubra*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	50	=Total Cover	
50% of total cover: 25		20% of total cover:	10
Herb Stratum (Plot size: 5 feet)			
1. *Parthenocissus quinquefolia*	15	Yes	FACU
2. *Vitis rotundifolia*	25	Yes	FAC
3. *Lonicera japonica*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	=Total Cover	
50% of total cover: 28		20% of total cover:	11
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	105	x 3 =	315
FACU species	30	x 4 =	120
UPL species	70	x 5 =	350
Column Totals:	205 (A)		785 (B)

Prevalence Index = B/A = 3.83

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: UPL-2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR 3/3	100					Loamy/Clayey	
2-18	10YR 6/4	100					Loamy/Clayey	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-3

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.580677 Long: -88.941885 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 8 to 12 percent slopes, severely eroded NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Area has been converted into a farm pond

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- ____ Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:

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

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Nyssa sylvatica*	45	Yes	FAC
2. *Ulmus rubra*	35	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	80	=Total Cover	
50% of total cover: 40		20% of total cover:	16
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Cephalanthus occidentalis*	35	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover:	7
Herb Stratum (Plot size: 5 feet)			
1. *Persicaria hydropiperoides*	25	Yes	OBL
2. *Pilea pumila*	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species	20	x 2 =	40
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	160 (A)		340 (B)

Prevalence Index = B/A = 2.13

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: WTL-3

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					Loamy/Clayey	
3-18	10YR 6/2	70	10YR 6/6	30	c	m	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-3

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Berm / Terrace Local relief (concave, convex, none): Convex Slope (%): 1-3%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.580699 Long: -88.941801 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 8 to 12 percent slopes, severely eroded NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

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

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Cercis canadensis*	10	No	UPL
2. *Liquidambar styraciflua*	20	Yes	FAC
3. *Ulmus rubra*	35	Yes	FAC
4. *Quercus falcata*	15	No	FACU
5.			
6.			
7.			
8.			
	80	=Total Cover	
50% of total cover: 40		20% of total cover:	16
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Cornus florida*	35	Yes	UPL
2. *Ulmus rubra*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	50	=Total Cover	
50% of total cover: 25		20% of total cover:	10
Herb Stratum (Plot size: 5 feet)			
1. *Parthenocissus quinquefolia*	30	Yes	FACU
2. *Vitis rotundifolia*	25	Yes	FAC
3. *Lonicera japonica*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	=Total Cover	
50% of total cover: 35		20% of total cover:	14
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 57.1% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	60	x 4 =	240
UPL species	45	x 5 =	225
Column Totals:	200 (A)		750 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR 3/3	100					Loamy/Clayey	
2-18	10YR 6/4	100					Loamy/Clayey	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-4

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.584331 Long: -88.942489 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 8 to 12 percent slopes, severely eroded NWI classification: PUBh

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Area has been converted into a farm pond

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- ____ Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 5
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-4

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	35	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	35 =Total Cover		
50% of total cover: 18	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Cephalanthus occidentalis*	25	Yes	OBL
2. *Salix nigra*	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	35 =Total Cover		
50% of total cover: 18	20% of total cover: 7		
Herb Stratum (Plot size: 5 feet)			
1. *Persicaria hydropiperoides*	15	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15 =Total Cover		
50% of total cover: 8	20% of total cover: 3		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		85 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Muck	
3-18	10YR 6/1	70	10YR 6/6	30	c	m	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- X 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

Surface water present, which made extracting an adequate core difficult

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-4

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Field Local relief (concave, convex, none): Flat Slope (%): 0-3%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.584395 Long: -88.94252 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 8 to 12 percent slopes, severely eroded NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: UPL-4

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus falcata*	35	Yes	FACU
2. *Salix nigra*	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Lonicera tatarica*	25	Yes	FACU
2. *Rosa multiflora*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	40	=Total Cover	
50% of total cover: 20		20% of total cover:	8
Herb Stratum (Plot size: 5 feet)			
1. *Lolium perenne*	65	Yes	FACU
2. *Tridens flavus*	20	Yes	FACU
3. *Daucus carota*	15	No	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
50% of total cover: 50		20% of total cover:	20
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	160	x 4 =	640
UPL species	15	x 5 =	75
Column Totals:	185 (A)		725 (B)
Prevalence Index = B/A =			3.92

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-4

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/3	100					Loamy/Clayey	
5-18	10YR 6/3	100					Loamy/Clayey	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-5

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.573502 Long: -88.938856 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 5 to 8 percent slopes, severely eroded NWI classification: PUBh

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Area has been converted into a farm pond

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 3

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

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

Remarks:
wetland is a fringe to a farm pond

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

Sampling Point: WTL-5

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover:	3
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Herb Stratum (Plot size: 5 feet)			
1. *Carex vulpinoidea*	25	Yes	FACW
2. *Ranunculus acris*	15	Yes	FACW
3. *Lolium perenne*	10	No	FACU
4. *Juncus effusus*	20	Yes	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	=Total Cover	
50% of total cover: 35		20% of total cover:	14
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	40	x 2 =	80
FAC species	15	x 3 =	45
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	85 (A)		185 (B)

Prevalence Index = B/A = 2.18

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-5

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	85	10YR 5/6	15	c	m	Loamy/Clayey	Prominent redox concentrations
8-18	10YR 6/2	70	10YR 6/6	30	c	m	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-5

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

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

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.573474 Long: -88.93884 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 5 to 8 percent slopes, severely eroded NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

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

Sampling Point: UPL-5

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 feet)			
1. *Lolium perenne*	35	Yes	FACU
2. *Tridens flavus*	40	Yes	FACU
3. *Daucus carota*	5	No	UPL
4. *Trifolium repens*	15	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95 =Total Cover		
50% of total cover: 48	20% of total cover: 19		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	90	x 4 =	360
UPL species	5	x 5 =	25
Column Totals:	95 (A)		385 (B)
Prevalence Index = B/A =			4.05

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					Loamy/Clayey	
4-18	10YR 5/6	100					Loamy/Clayey	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-6

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.581577 Long: -88.933489 Datum: NAD83

Soil Map Unit Name: Smithdale soils, 20 to 30 percent slopes NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Area has been converted into a farm pond

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- ____ Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 1
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:
wetland is a fringe to a farm pond

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-6

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	55	Yes	FAC
2. *Celtis laevigata*	15	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	70	=Total Cover	
50% of total cover: 35		20% of total cover:	14
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Liquidambar styraciflua*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Herb Stratum (Plot size: 5 feet)			
1. *Scirpus cyperinus*	15	Yes	OBL
2. *Scirpus atrovirens*	15	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	=Total Cover	
50% of total cover: 15		20% of total cover:	6
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	15	x 2 =	30
FAC species	65	x 3 =	195
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		255 (B)

Prevalence Index = B/A = 2.32

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: WTL-6

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					Loamy/Clayey	
3-18	10YR 5/1	70	10YR 5/6	30	c	m	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-7

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Concave Slope (%): 2-3%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.580223 Long: -88.933034 Datum: NAD83

Soil Map Unit Name: Smithdale soils, 20 to 30 percent slopes NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

wetland drains into a depression along a slope. It then disipates further downslope into upland sheet flow.

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

Sampling Point: WTL-7

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 feet)			
1. *Juncus effusus*	25	Yes	OBL
2. *Dichanthelium clandestinum*	10	No	FACW
3. *Phalaris arundinacea*	40	Yes	OBL
4. *Carex scoparia*	10	No	FACW
5. *Solidago gigantea*	5	No	FACW
6. *Sambucus nigra*	5	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	95 =Total Cover		
50% of total cover: 48	20% of total cover: 19		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	25	x 2 =	50
FAC species	5	x 3 =	15
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		130 (B)

Prevalence Index = B/A = 1.37

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: WTL-7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100					Loamy/Clayey	
3-18	10YR 5/1	70	10YR 5/6	30	c	m	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/12/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-6/7

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

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

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.581655 Long: -88.933571 Datum: NAD83

Soil Map Unit Name: Smithdale soils, 20 to 30 percent slopes NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: UPL-6/7

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	30	Yes	FAC
2. *Prunus serotina*	30	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	60	=Total Cover	
50% of total cover: 30		20% of total cover:	12
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Lonicera tatarica*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover:	3
Herb Stratum (Plot size: 5 feet)			
1. *Solidago altissima*	15	No	FACU
2. *Tridens flavus*	35	Yes	FACU
3. *Daucus carota*	20	Yes	UPL
4. *Trifolium repens*	15	No	FACU
5. *Lolium perenne*	20	Yes	FACU
6. *Rubus argutus*	15	No	FAC
7.			
8.			
9.			
10.			
11.			
12.			
	120	=Total Cover	
50% of total cover: 60		20% of total cover:	24
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	45	x 3 =	135
FACU species	130	x 4 =	520
UPL species	20	x 5 =	100
Column Totals:	195 (A)		755 (B)
Prevalence Index = B/A =			3.87

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-6/7

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/3	100					Loamy/Clayey	
2-18	10YR 5/6	100					Loamy/Clayey	

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

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/13/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-8

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2-3%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.573715 Long: -88.929624 Datum: NAD83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 4

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-8

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	3	No	FAC
2. *Quercus lyrata*	15	Yes	OBL
3. *Quercus phellos*	20	Yes	FACW
4.			
5.			
6.			
7.			
8.			
	38	=Total Cover	
50% of total cover: 19		20% of total cover: 8	
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Ulmus rubra*	20	Yes	FAC
2. *Liquidambar styraciflua*	15	Yes	FAC
3. *Quercus phellos*	10	Yes	FACW
4.			
5.			
6.			
7.			
8.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover: 9	
Herb Stratum (Plot size: 5 feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	30	x 2 =	60
FAC species	38	x 3 =	114
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	83 (A)		189 (B)

Prevalence Index = B/A = 2.28

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-8

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100	10YR 5/6	10	c	m	Loamy/Clayey	Prominent redox concentrations
5-18	10YR 6/1	70	10YR 6/6	25	c	m	Loamy/Clayey	Prominent redox concentrations
			10YR 5/6	5	c	m		Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ Organic Bodies (A6) **(LRR, P, T, U)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
___ Muck Presence (A8) **(LRR U)**
___ 1 cm Muck (A9) **(LRR P, T)**
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Coast Prairie Redox (A16) (**MLRA 150A)**
___ Sandy Mucky Mineral (S1) **(LRR O, S)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7) **(LRR P, S, T, U)**
___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
___ Thin Dark Surface (S9) **(LRR S, T, U)**
___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
___ Loamy Mucky Mineral (F1) **(LRR O)**
___ Loamy Gleyed Matrix (F2)
X Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
X Redox Depressions (F8)
___ Marl (F10) **(LRR U)**
___ Depleted Ochric (F11) **(MLRA 151)**
___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
___ Umbric Surface (F13) **(LRR P, T, U)**
___ Delta Ochric (F17) **(MLRA 151)**
___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

___ 1 cm Muck (A9) **(LRR O)**
___ 2 cm Muck (A10) **(LRR S)**
___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/13/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-9

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.573546 Long: -88.928759 Datum: NAD83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

wetland 8 and 9 are segregated by a berm and farm road

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 8

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

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

Remarks:

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

Sampling Point: WTL-9

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 feet)			
1. *Carex vulpinoidea*	45	Yes	FACW
2. *Rumex crispus*	40	Yes	FAC
3. *Carex frankii*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95 =Total Cover		
50% of total cover: 48	20% of total cover: 19		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	45	x 2 =	90
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	95 (A)		220 (B)

Prevalence Index = B/A = 2.32

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-9

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					Loamy/Clayey	
5-18	10YR 5/2	65	10YR 5/6	35	c	m	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/13/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-8/9

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Field / berm Local relief (concave, convex, none): convex Slope (%): 1-3%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.573647 Long: -88.929653 Datum: NAD83

Soil Map Unit Name: Grenada silt loam, 2 to 5 percent slopes NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: UPL-8/9

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	30	Yes	FAC
2. *Quercus phellos*	30	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	60	=Total Cover	
50% of total cover: 30		20% of total cover:	12
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Lonicera tatarica*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover:	3
Herb Stratum (Plot size: 5 feet)			
1. *Lolium perenne*	25	Yes	FACU
2. *Lonicera japonica*	35	Yes	FACU
3. *Parthenocissus quinquefolia*	20	Yes	FACU
4. *Smilax rotundifolia*	5	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
50% of total cover: 43		20% of total cover:	17
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	35	x 3 =	105
FACU species	95	x 4 =	380
UPL species	0	x 5 =	0
Column Totals:	160 (A)		545 (B)

Prevalence Index = B/A = 3.41

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-8/9

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					Loamy/Clayey	
4-18	10YR 5/4	100					Loamy/Clayey	

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

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/13/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-10

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.572893 Long: -88.924407 Datum: NAD83

Soil Map Unit Name: Calhoun and Henry silt loams NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

berm seperates downslope section of wetland. Ground water seeps connect the two

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 2

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-10

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	35	Yes	FAC
2. *Liquidambar styraciflua*	20	Yes	FAC
3. *Platanus occidentalis*	15	No	FACW
4. *Quercus bicolor*	15	No	FACW
5.			
6.			
7.			
8.			
	85	=Total Cover	
50% of total cover: 43		20% of total cover:	17
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Ostrya virginiana*	25	Yes	FACU
2. *Ulmus rubra*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover:	7
Herb Stratum (Plot size: 5 feet)			
1. *Smilax rotundifolia*	15	Yes	FAC
2. *Carex lurida*	5	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
50% of total cover: 10		20% of total cover:	4
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	30	x 2 =	60
FAC species	80	x 3 =	240
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column Totals:	140 (A)		405 (B)

Prevalence Index = B/A = 2.89

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: WTL-10

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					Loamy/Clayey	
4-18	10YR 5/2	75	10YR 6/6	25	c	m	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/13/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-10

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Field / berm Local relief (concave, convex, none): convex Slope (%): 1-3%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.572768 Long: -88.924575 Datum: NAD83

Soil Map Unit Name: Calhoun and Henry silt loams NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: UPL-10

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	35	Yes	FAC
2. *Quercus phellos*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	60	=Total Cover	
50% of total cover: 30		20% of total cover:	12
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Lonicera tatarica*	20	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	20	=Total Cover	
50% of total cover: 10		20% of total cover:	4
Herb Stratum (Plot size: 5 feet)			
1. *Lolium perenne*	10	No	FACU
2. *Lonicera japonica*	25	Yes	FACU
3. *Parthenocissus quinquefolia*	35	Yes	FACU
4. *Smilax rotundifolia*	15	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85	=Total Cover	
50% of total cover: 43		20% of total cover:	17
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	50	x 3 =	150
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	165 (A)		560 (B)
Prevalence Index = B/A =			3.39

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					Loamy/Clayey	
4-18	10YR 5/4	100					Loamy/Clayey	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/13/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-11

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-1%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.567561 Long: -88.937808 Datum: NAD83

Soil Map Unit Name: Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase NWI classification: PUBh

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

PFO fringe to man-made pond

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-11

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	55	Yes	OBL
2. *Liquidambar styraciflua*	10	No	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	65	=Total Cover	
50% of total cover: 33		20% of total cover:	13
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Salix nigra*	15	Yes	OBL
2. *Cephalanthus occidentalis*	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5
Herb Stratum (Plot size: 5 feet)			
1. *Juncus effusus*	15	Yes	OBL
2. *Scirpus atrovirens*	10	Yes	OBL
3. *Carex lurida*	5	No	OBL
4. *Carex vulpinoidea*	10	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	=Total Cover	
50% of total cover: 20		20% of total cover:	8
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	110	x 1 =	110
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	130 (A)		160 (B)

Prevalence Index = B/A = 1.23

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-11

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- X Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

Unable to extract soils from surface water edge of the farm pond/wetland complex

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/13/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-11

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

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

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.567697 Long: -88.937759 Datum: NAD83

Soil Map Unit Name: Feliciana silt loam, 2 to 5 percent slopes, moderately eroded, northern phase NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: UPL-11

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	15	Yes	FAC
2. *Salix nigra*	25	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	40	=Total Cover	
50% of total cover: 20	20% of total cover: 8		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.	20	Yes	
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	20	=Total Cover	
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 5 feet)			
1. *Lolium perenne*	45	Yes	FACU
2. *Trifolium repens*	25	Yes	FACU
3. *Daucus carota*	15	No	UPL
4. *Solidago altissima*	15	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	=Total Cover	
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	0	x 2 =	0
FAC species	15	x 3 =	45
FACU species	85	x 4 =	340
UPL species	15	x 5 =	75
Column Totals:	140 (A)		485 (B)
Prevalence Index = B/A =			3.46

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-11

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					Loamy/Clayey	
4-18	10YR 6/6	100					Loamy/Clayey	

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

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/14/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-12

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.571299 Long: -88.931484 Datum: NAD83

Soil Map Unit Name: Loring silt loam, 2 to 5 percent slopes NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 2

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

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

Remarks:

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

Sampling Point: WTL-12

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Nyssa sylvatica*	30	Yes	FAC
2. *Quercus phellos*	35	Yes	FACW
3. *Ulmus rubra*	25	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	90	=Total Cover	
50% of total cover: 45		20% of total cover:	18
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Ilex verticillata*	25	Yes	FACW
2. *Ulmus rubra*	25	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	50	=Total Cover	
50% of total cover: 25		20% of total cover:	10
Herb Stratum (Plot size: 5 feet)			
1. *Impatiens capensis*	15	Yes	FACW
2. *Toxicodendron radicans*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	165 (A)		420 (B)

Prevalence Index = B/A = 2.55

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-12

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 4/2	100	10YR 5/6	10	c	m	Loamy/Clayey	Prominent redox concentrations
3-18	10YR 6/1	70	10YR 6/6	30	c	m	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/14/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-13

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.571336 Long: -88.932812 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 5 to 8 percent slopes, severely eroded NWI classification: PUBh

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Area has been utilized as a farm pond

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-13

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	35	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	35 =Total Cover		
50% of total cover: 18	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Salix nigra*	15	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	15 =Total Cover		
50% of total cover: 8	20% of total cover: 3		
Herb Stratum (Plot size: 5 feet)			
1. *Juncus effusus*	5	No	OBL
2. *Carex vulpinoidea*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30 =Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	20	x 1 =	20
FACW species	25	x 2 =	50
FAC species	35	x 3 =	105
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	80 (A)		175 (B)

Prevalence Index = B/A = 2.19

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-13

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- X Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

Unable to extract soils from surface water edge of the farm pond/wetland complex

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/14/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-12/13

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): berm Local relief (concave, convex, none): convex Slope (%): 2-3%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.57134 Long: -88.931475 Datum: NAD83

Soil Map Unit Name: Loring silt loam, 2 to 5 percent slopes NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: UPL-12/13

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prunus serotina*	25	Yes	FACU
2. *Carya glabra*	35	Yes	FACU
3. *Fraxinus americana*	25	Yes	FACU
4.			
5.			
6.			
7.			
8.			
	85	=Total Cover	
50% of total cover: 43		20% of total cover:	17
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Ligustrum sinense*	35	Yes	FAC
2. *Lonicera tatarica*	10	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9
Herb Stratum (Plot size: 5 feet)			
1. *Persicaria virginiana*	45	Yes	FAC
2. *Parthenocissus quinquefolia*	25	Yes	FACU
3. *Toxicodendron radicans*	15	No	FAC
4. *Lonicera japonica*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	=Total Cover	
50% of total cover: 45		20% of total cover:	18
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 28.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	95	x 3 =	285
FACU species	125	x 4 =	500
UPL species	0	x 5 =	0
Column Totals:	220 (A)		785 (B)
Prevalence Index = B/A =			3.57

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-12/13

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					Loamy/Clayey	
4-14	10YR 5/4	100					Loamy/Clayey	
14-18	10YR 6/3	100					Loamy/Clayey	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/14/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-14

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-3%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.568217 Long: -88.948143 Datum: NAD83

Soil Map Unit Name: Smithdale soils, 10 to 20 percent slopes NWI classification: PUBh

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Area has been utilized as a farm pond

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-14

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	30	Yes	FAC
2. *Betula nigra*	35	Yes	FACW
3. *Fraxinus pennsylvanica*	25	Yes	FACW
4. *Nyssa sylvatica*	10	No	FAC
5.			
6.			
7.			
8.			
	100	=Total Cover	
50% of total cover: 50		20% of total cover:	20
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Betula nigra*	10	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2
Herb Stratum (Plot size: 5 feet)			
1.	5	No	
2.	25	Yes	
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30	=Total Cover	
50% of total cover: 15		20% of total cover:	6
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	40	x 3 =	120
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		260 (B)

Prevalence Index = B/A = 2.36

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-14

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- X Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

Unable to extract soils from surface water edge of the farm pond/wetland complex

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/14/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-14

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): berm Local relief (concave, convex, none): convex Slope (%): 3-5%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.568339 Long: -88.948303 Datum: NAD83

Soil Map Unit Name: Smithdale soils, 10 to 20 percent slopes NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: UPL-14

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	25	Yes	FAC
2. *Betula nigra*	25	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	50	=Total Cover	
50% of total cover: 25	20% of total cover: 10		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Betula nigra*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	5	=Total Cover	
50% of total cover: 3	20% of total cover: 1		
Herb Stratum (Plot size: 5 feet)			
1. *Lolium perenne*	85	Yes	FACU
2. *Daucus carota*	10	No	UPL
3. *Trifolium repens*	15	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	110	=Total Cover	
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	30	x 2 =	60
FAC species	25	x 3 =	75
FACU species	100	x 4 =	400
UPL species	10	x 5 =	50
Column Totals:	165 (A)		585 (B)

Prevalence Index = B/A = 3.55

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-14

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					Loamy/Clayey	
4-18	10YR 5/6	100					Loamy/Clayey	

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

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/14/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-15

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.575327 Long: -88.923528 Datum: NAD83

Soil Map Unit Name: Smithdale soils, 10 to 20 percent slopes NWI classification: PUBh

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

Area has been utilized as a farm pond at the southern limits of the complex

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:

hydrology is associated with berm seepage from pond featurea and subterranean flow down slope to draiange

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-15

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	55	Yes	FAC
2. *Ulmus rubra*	35	Yes	FAC
3. *Acer rubrum*	25	Yes	FAC
4. *Liriodendron tulipifera*	10	No	FACU
5.			
6.			
7.			
8.			
	125	=Total Cover	
50% of total cover: 63		20% of total cover:	25
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Ulmus rubra*	25	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	25	=Total Cover	
50% of total cover: 13		20% of total cover:	5
Herb Stratum (Plot size: 5 feet)			
1. *Impatiens capensis*	10	Yes	FACW
2. *Smilax rotundifolia*	10	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	20	=Total Cover	
50% of total cover: 10		20% of total cover:	4
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	150	x 3 =	450
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	170 (A)		510 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: WTL-15

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	100					Muck	
5-18	10YR 5/2	65	10YR 6/6	35	c	m	Loamy/Clayey	compacted layer

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/14/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-15

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): berm Local relief (concave, convex, none): convex Slope (%): 3-5%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.57547 Long: -88.923431 Datum: NAD83

Soil Map Unit Name: Smithdale soils, 10 to 20 percent slopes NWI classification: N/A

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

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

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

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

Remarks:

No positive hydrology indicators in the upland area

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

Sampling Point: UPL-15

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liriodendron tulipifera*	35	Yes	FACU
2. *Cercis canadensis*	35	Yes	UPL
3. *Quercus rubra*	25	Yes	FACU
4. *Ulmus rubra*	10	No	FAC
5.			
6.			
7.			
8.			
	105	=Total Cover	
50% of total cover: 53	20% of total cover:	21	
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Quercus nigra*	15	Yes	FAC
2. *Fraxinus pennsylvanica*	15	Yes	FACW
3. *Ligustrum sinense*	10	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	40	=Total Cover	
50% of total cover: 20	20% of total cover:	8	
Herb Stratum (Plot size: 5 feet)			
1. *Persicaria virginiana*	30	Yes	FAC
2. *Parthenocissus quinquefolia*	10	No	FACU
3. *Laportea canadensis*	10	No	FACW
4. *Lonicera japonica*	15	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	=Total Cover	
50% of total cover: 33	20% of total cover:	13	
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	65	x 3 =	195
FACU species	85	x 4 =	340
UPL species	35	x 5 =	175
Column Totals:	210 (A)		760 (B)

Prevalence Index = B/A = 3.62

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

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

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

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

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-15

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3	100					Loamy/Clayey	
3-18	10YR 5/4	100					Loamy/Clayey	

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

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/28/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-16

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.569387 Long: -88.930268 Datum: NAD83

Soil Map Unit Name: Water NWI classification: PUBh

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes X	No ____	**within a Wetland?** **Yes** X **No** ____
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

Area has been utilized as a farm pond at the southern limits of the complex

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 12
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Farm Pond

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-16

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	15	Yes	FAC
2. *Salix nigra*	35	Yes	OBL
3. *Liquidambar styraciflua*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
	60	=Total Cover	
50% of total cover: 30		20% of total cover:	12
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Salix nigra*	15	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	15	=Total Cover	
50% of total cover: 8		20% of total cover:	3
Herb Stratum (Plot size: 5 feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	0	x 2 =	0
FAC species	25	x 3 =	75
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	75 (A)		125 (B)

Prevalence Index = B/A = 1.67

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

unable to extract soils from surface water area

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/14/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-16

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Field / terrace Local relief (concave, convex, none): convex Slope (%): 2-5%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.569305 Long: -88.930666 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 5 to 8 percent slopes, severely eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive hydrology indicators in the upland area

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: UPL-16

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5 feet)			
1. *Lolium perenne*	65	Yes	FACU
2. *Trifolium repens*	20	No	FACU
3. *Solidago altissima*	5	No	FACU
4. *Tridens flavus*	15	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105 =Total Cover		
50% of total cover: 53	20% of total cover: 21		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column Totals:	105 (A)		420 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR 3/3	100					Loamy/Clayey	
2-18	10YR 5/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/28/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-17

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-4%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.568176 Long: -88.952005 Datum: NAD83

Soil Map Unit Name: Lexington and Smithdale soils, 10 to 30 percent slopes, severely eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

Area has been utilized as a man-made pond possibly for duck hunting

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 12
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

man-made pond with forested fringe wetland

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-17

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus rubra*	35	Yes	FAC
2. *Betula nigra*	5	No	FACW
3. *Liquidambar styraciflua*	30	Yes	FAC
4.			
5.			
6.			
7.			
8.			
	70	=Total Cover	
50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Lonicera tatarica*	15	Yes	FACU
2. *Lindera benzoin*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	25	=Total Cover	
50% of total cover: 13	20% of total cover: 5		
Herb Stratum (Plot size: 5 feet)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		=Total Cover	
50% of total cover:	20% of total cover:		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	65	x 3 =	195
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	95 (A)		285 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

unable to extract soils from surface water area

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/28/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-17

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 3-8%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.568261 Long: -88.95196 Datum: NAD83

Soil Map Unit Name: Lexington and Smithdale soils, 10 to 30 percent slopes, severely eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive hydrology indicators in the upland area

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: UPL-17

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Juniperus virginiana*	45	Yes	FACU
2. *Fraxinus americana*	15	No	FACU
3. *Liriodendron tulipifera*	25	Yes	FACU
4.			
5.			
6.			
7.			
8.			
	85	=Total Cover	
50% of total cover: 43		20% of total cover:	17
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Lonicera tatarica*	15	Yes	FACU
2. *Ligustrum sinense*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	30	=Total Cover	
50% of total cover: 15		20% of total cover:	6
Herb Stratum (Plot size: 5 feet)			
1. *Lonicera japonica*	15	Yes	FACU
2. *Parthenocissus quinquefolia*	25	Yes	FACU
3. *Chasmanthium latifolium*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 16.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	140	x 4 =	560
UPL species	0	x 5 =	0
Column Totals:	160 (A)		620 (B)

Prevalence Index = B/A = 3.88

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: UPL-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/3	100					Loamy/Clayey	
2-18	10YR 6/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/29/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: WTL-18

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0-2%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.578954 Long: -88.935568 Datum: NAD83

Soil Map Unit Name: Water NWI classification: PUBh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

Area has been utilized as a man-made pond possibly for duck hunting and/or farmfield

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- X Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 12
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

man-made pond

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTL-18

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	20	Yes	FAC
2. *Ulmus rubra*	15	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	35	=Total Cover	
50% of total cover: 18	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Cephalanthus occidentalis*	25	Yes	OBL
2. *Salix nigra*	5	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
	30	=Total Cover	
50% of total cover: 15	20% of total cover: 6		
Herb Stratum (Plot size: 5 feet)			
1. *Carex vulpinoidea*	15	Yes	FACW
2. *Juncus effusus*	10	Yes	OBL
3. *Persicaria hydropiperoides*	15	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	40	=Total Cover	
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	55	x 1 =	55
FACW species	15	x 2 =	30
FAC species	35	x 3 =	105
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		190 (B)

Prevalence Index = B/A = 1.81

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below.)

SOIL

Sampling Point: WTL-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- X Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

unable to extract soils from surface water area

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Silicon Ranch McKellar City/County: Jackson / Madison Co. Sampling Date: 5/29/2020

Applicant/Owner: Barge Design Solutions, Inc State: TN Sampling Point: UPL-18

Investigator(s): F. Amatucci, N. Carmean Section, Township, Range:

Landform (hillside, terrace, etc.): Field / hillslope Local relief (concave, convex, none): slope Slope (%): 2-5%

Subregion (LRR or MLRA): LRR P, MLRA 134 Lat: 35.579096 Long: -88.935322 Datum: NAD83

Soil Map Unit Name: Lexington silt loam, 5 to 8 percent slopes, severely eroded NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T,U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive hydrology indicators in the upland area

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: UPL-18

Tree Stratum (Plot size: 30 feet)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Liquidambar styraciflua*	20	Yes	FAC
2. *Prunus serotina*	15	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
	35	=Total Cover	
50% of total cover: 18	20% of total cover: 7		
Sapling/Shrub Stratum (Plot size: 15 feet)			
1. *Lonicera tatarica*	15	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	15	=Total Cover	
50% of total cover: 8	20% of total cover: 3		
Herb Stratum (Plot size: 5 feet)			
1. *Solidago altissima*	5	No	FACU
2. *Tridens flavus*	35	Yes	FACU
3. *Daucus carota*	5	No	UPL
4. *Trifolium repens*	20	No	FACU
5. *Lolium perenne*	45	Yes	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	110	=Total Cover	
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 15 feet)			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	135	x 4 =	540
UPL species	5	x 5 =	25
Column Totals:	160 (A)		625 (B)

Prevalence Index = B/A = 3.91

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody Vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? **Yes** ___ **No** X

Remarks: (If observed, list morphological adaptations below.)

SOIL Sampling Point: UPL-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-2	10YR 3/3	100					Loamy/Clayey	
2-18	10YR 5/6	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR, P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (**MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

This data form is revised from Atlantic and Gulf Coastal Plain Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 8.0, 2016.

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Attachment E – Photo Summary

Photo: 1
By: N. Carmean
Date: May 11, 2020
Feature: STR-1a
Lat: 35.589058,
Long: -88.935230

Looking downstream within the channel of STR-1a (intermittent portion). Note the strong presence of substrate sorting, wrack lines and active floodplain.

Photo: 2
By: N. Carmean
Date: May 11, 2020
Feature: STR-1b
Lat: 35.590237,
Long: -88.940648

Looking upstream within the channel of STR-1b (perennial portion). Note the strong presence of substrate sorting and now the presence of surface water within the channel.

Photo: 3
By: N. Carmean
Date: May 11, 2020
Feature: STR-2
Lat: 35.586993,
Long: -88.939448

Looking downstream within the channel of STR-2. Note the strong presence of a defined bed and bank, an OHWM, and surface water.

Photo: 4
By: N. Carmean
Date: May 29, 2020
Feature: STR-3
Lat: 35.580689,
Long: -88.935390

Looking downstream within the channel of STR-3. Note the strong presence of a defined bed and bank, an OHWM, and substrate sorting.

Photo: 5
By: N. Carmean
Date: May 29, 2020
Feature: STR-4
Lat: 35.576969,
Long: -88.938232

Looking downstream within the channel of STR-4. Note the strong presence of a defined bed and bank, an OHWM, and substrate sorting.

Photo: 6
By: N. Carmean
Date: May 29, 2020
Feature: STR-5
Lat: 35.582093,
Long: -88.933273

Looking downstream within the channel of STR-5. Note the presence of a defined bed and bank, an OHWM, and substrate sorting.

Photo: 7
By: N. Carmean
Date: May 29, 2020
Feature: STR-6
Lat: 35.582331,
Long: -88.932523

Looking upstream within the channel of STR-6. Note the presence of a defined bed and bank, an OHWM, and hydric soils in the channel.

Photo: 8
By: N. Carmean
Date: May 28, 2020
Feature: STR-7a
Lat: 35.567761,
Long: -88.929945

Looking downstream within the channel of STR-7a. Note the presence of a defined bed and bank, an OHWM, and FACW vegetation in the channel, as well as surface water.

Photo: 9
By: N. Carmean
Date: May 28, 2020
Feature: STR-7b
Lat: 35.565990,
Long: -88.926770

Looking upstream within the channel of STR-7b. Note the presence of a defined bed and bank, an OHWM, and substrate sorting within the channel.

Photo: 10
By: N. Carmean
Date: May 28, 2020
Feature: STR-8
Lat: 35.568231,
Long: -88.930239

Looking upstream within the channel of STR-8. Note the presence of a defined bed and bank, surface water, and minimal vegetation in the channel.

Photo: 11
By: N. Carmean
Date: May 14, 2020
Feature: STR-9
Lat: 35.568231,
Long: -88.930239

Looking downstream within the channel of STR-9. Note the presence of a defined bed and bank, surface water, and good substrate sorting.

Photo: 12
By: N. Carmean
Date: May 28, 2020
Feature: STR-10
Lat: 35.576296,
Long: -88.923614

Looking downstream within the channel of STR-10. Note the presence of a defined bed and bank, an OHWM, surface water, and substrate sorting.

Photo: 13
By: N. Carmean
Date: May 28, 2020
Feature: STR-11b
Lat: 35.570190,
Long: -88.952256

Looking downstream within the channel of STR-11b. Note the presence of a defined bed and bank, an OHWM, and substrate sorting.

Photo: 14
By: N. Carmean
Date: May 28, 2020
Feature: STR-12
Lat: 35.567475,
Long: -88.952024

Looking downstream within the channel of STR-12. Note the presence of a defined bed and bank, an OHWM, iron reducing bacteria, and a presence of surface water.

Photo: 15
By: N. Carmean
Date: May 28, 2020
Feature: STR-13 (Cub Creek)
Lat: 35.568279,
Long: -88.953964

Looking upstream within the channel of STR-13 (Cub Creek). Note the presence of a defined bed and bank, an OHWM, and a presence of surface water.

Photo: 16
By: N. Carmean
Date: May 28, 2020
Feature: STR-14
Lat: 35.568347,
Long: -88.924392

Looking upstream within the channel of STR-14. Note the presence of a defined bed and bank, an OHWM, and some substrate stripping of the clay.

Photo: 17
By: N. Carmean
Date: May 11, 2020
Feature: WWC-1
Lat: 35.589967,
Long: -88.941744

Looking upstream within the channel of WWC-1. Note the presence of a weak bed and bank, some substrate sorting, and some wrack lines in the channel.

Photo: 18
By: N. Carmean
Date: May 11, 2020
Feature: WWC-2
Lat: 35.590077,
Long: -88.941923

Looking upstream within the channel of WWC-2. Note the presence of a weak bed and bank, and a moderate presence of fibrous roots.

Photo: 19
By: N. Carmean
Date: May 12, 2020
Feature: WWC-3
Lat: 35.584041,
Long: -88.942811

Looking downstream within the channel of WWC-3. Note the presence of a weak bed and bank, and a moderate presence of leaf litter in the channel.

Photo: 20
By: N. Carmean
Date: May 12, 2020
Feature: WWC-4
Lat: 35.582745,
Long: -88.943114

Looking downstream within the channel of WWC-4. Note the presence of a semi-moderate bed and bank, and a presence of leaf litter in the channel.

Photo: 21
By: N. Carmean
Date: May 29, 2020
Feature: WWC-5
Lat: 35.582864,
Long: -88.943275

Looking downstream within the channel of WWC-5. Note the presence of a weak bed and bank, little substrate sorting, wrack lines and vegetation in the channel.

Photo: 22
By: N. Carmean
Date: May 29, 2020
Feature: WWC-6
Lat: 35.581099,
Long: -88.941358

Looking upstream within the channel of WWC-6. Note the presence of a minimal bed and bank, no substrate sorting, wrack lines and vegetation in the channel.

Photo: 23
By: F. Amatucci
Date: May 29, 2020
Feature: WWC-7
Lat: 35.582374,
Long: -88.939910

Looking upstream within the channel of WWC-7. Note the presence of a moderate bed and bank, some substrate sorting, and wrack lines in the channel.

Photo: 24
By: F. Amatucci
Date: May 29, 2020
Feature: WWC-8
Lat: 35.582614,
Long: -88.939288

Looking upstream within the channel of WWC-8. Note the presence of a weak bed and bank, some substrate sorting, and some wrack lines in the channel.

Photo: 25
By: N. Carmean
Date: May 29, 2020
Feature: WWC-9
Lat: 35.582614,
Long: -88.939288

Looking upstream within the channel of WWC-9. Note the presence of a moderate bed and bank, some substrate sorting, moderate wrack lines in the channel, and some headcuts.

Photo: 26
By: N. Carmean
Date: May 29, 2020
Feature: WWC-10
Lat: 35.586453,
Long: -88.939803

Looking upstream within the channel of WWC-10. Note the presence of a semi-moderate bed and bank, some substrate sorting, moderate wrack lines in the channel, and some headcuts.

Photo: 27
By: F. Amatucci
Date: May 29, 2020
Feature: WWC-11
Lat: 35.588013,
Long: -88.939720

Looking upstream within the channel of WWC-11. Note the presence of a semi-moderate bed and bank, little substrate sorting, moderate wrack lines in the channel, and some headcuts.

Photo: 28
By: N. Carmean
Date: May 29, 2020
Feature: WWC-12
Lat: 35.588372,
Long: -88.939084

Looking upstream within the channel of WWC-12. Note the presence of a semi-moderate bed and bank, little substrate sorting, leaf litter in the channel, and some headcuts.

Photo: 29
By: N. Carmean
Date: May 29, 2020
Feature: WWC-13
Lat: 35.588950,
Long: -88.935833

Looking upstream within the channel of WWC-16. Note the presence of a weak bed and bank, minimal sorting, and wrack lines in the channel.

Photo: 30
By: N. Carmean
Date: May 29, 2020
Feature: WWC-14
Lat: 35.587594,
Long: -88.935109

Looking downstream within the channel of WWC-14. Note the presence of a moderate bed and bank, a medium sized headcut, and moderate substrate sorting.

Photo: 31
By: N. Carmean
Date: May 29, 2020
Feature: WWC-15
Lat: 35.586264,
Long: -88.936330

Looking upstream within the channel of WWC-15. Note the presence of a moderate bed and bank, a medium sized headcut, and moderate substrate sorting.

Photo: 32
By: N. Carmean
Date: May 29, 2020
Feature: WWC-16
Lat: 35.586247,
Long: -88.936715

Looking downstream within the channel of WWC-16. Note the presence of a weak bed and bank, minimal sorting, and vegetation in the channel.

Photo: 33
By: F. Amatucci
Date: May 29, 2020
Feature: WWC-17
Lat: 35.582713,
Long: -88.935499

Looking downstream within the channel of WWC-18. Note the presence of a semi-moderate bed and bank, with weak sorting, and some vegetation in the channel.

Photo: 34
By: F. Amatucci
Date: May 29, 2020
Feature: WWC-18
Lat: 35.582713,
Long: -88.935499

Looking upstream within the channel of WWC-18. Note the presence of a moderate bed and bank, with weak sorting, and some vegetation in the channel.

Photo: 35
By: N. Carmean
Date: May 29, 2020
Feature: WWC-19
Lat: 35.582694,
Long: -88.935674

Looking upstream within the channel of WWC-19. Note the presence of a weak bed and bank, with weak sorting, and some vegetation in the channel.

Photo: 36
By: N. Carmean
Date: May 29, 2020
Feature: WWC-20
Lat: 35.582022,
Long: -88.932376

Looking upstream within the channel of WWC-20. Note the presence of a moderate bed and bank, with moderate sorting, and some vegetation in the channel.

Photo: 37
By: N. Carmean
Date: May 29, 2020
Feature: WWC-21
Lat: 35.580342,
Long: -88.935985

Looking upstream within the channel of WWC-21. Note the presence of a semi-strong bed and bank, with moderate sorting, presence of wrack lines, and some vegetation in the channel.

Photo: 38
By: N. Carmean
Date: May 29, 2020
Feature: WWC-22
Lat: 35.579538,
Long: -88.935579

Looking upstream within the channel of WWC-22. Note the presence of a weak bed and bank, vegetation and fibrous roots in channel.

Photo: 39
By: F. Amatucci
Date: May 29, 2020
Feature: WWC-23
Lat: 35.577945,
Long: -88.937124

Looking upstream within the channel of WWC-23. Note the presence of a moderate headcut and semi-moderate bed and bank.

Photo: 40
By: N. Carmean
Date: May 29, 2020
Feature: WWC-24
Lat: 35.577877,
Long: -88.936981

Looking upstream within the channel of WWC-24. Note the presence of a moderate headcut and semi-moderate bed and bank.

Photo: 41
By: F. Amatucci
Date: May 29, 2020
Feature: WWC-25
Lat: 35.576288,
Long: -88.937335

Looking downstream within the channel of WWC-25. Note the presence of a moderate bed and bank, some substrate sorting, and wrack lines in the channel.

Photo: 42
By: F. Amatucci
Date: May 29, 2020
Feature: WWC-26
Lat: 35.575923,
Long: -88.937450

Looking upstream within the channel of WWC-26. Note the presence of a moderate bed and bank, some substrate sorting, and wrack lines in the channel.

Photo: 43
By: F. Amatucci
Date: May 29, 2020
Feature: WWC-27
Lat: 35.575865,
Long: -88.937494

Looking downstream within the channel of WWC-27. Note the presence of a moderate bed and bank, some substrate sorting, and very large headcut.

Photo: 44
By: N. Carmean
Date: May 29, 2020
Feature: WWC-28
Lat: 35.576647,
Long: -88.939445

Looking downstream within the channel of WWC-28. Note the presence of a moderate bed and bank, some substrate sorting, and wrack lines in the channel.

Photo: 45
By: N. Carmean
Date: May 13, 2020
Feature: WWC-29
Lat: 35.574321,
Long: -88.927595

Looking downstream within the channel of WWC-29a. Note the presence of a moderate bed and bank, some substrate sorting, and wrack lines in the channel.

Photo: 46
By: N. Carmean
Date: May 28, 2020
Feature: WWC-30
Lat: 35.575981,
Long: -88.922960

Looking upstream within the channel of WWC-30. Note the presence of a moderate bed and bank, some substrate sorting, and groundwater seepage in the channel.

Photo: 47
By: N. Carmean
Date: May 28, 2020
Feature: WWC-31
Lat: 35.572497,
Long: -88.920632

Looking upstream within the channel of WWC-31. Note the presence of a moderate bed and bank and vegetation in the thalwag.

Photo: 48
By: N. Carmean
Date: May 28, 2020
Feature: WWC-32
Lat: 35.572387,
Long: -88.920702

Looking upstream within the channel of WWC-32. Note the presence of a weak bed and bank and vegetation in the thalwag.

Photo: 49
By: N. Carmean
Date: May 28, 2020
Feature: WWC-33
Lat: 35.572486,
Long: -88.919800

Looking upstream within the channel of WWC-33. Note the presence of a moderate bed and bank and vegetation in the thalwag.

Photo: 50
By: F. Amatucci
Date: May 28, 2020
Feature: WWC-34
Lat: 35.569562,
Long: -88.924569

Looking upstream within the channel of WWC-34. Note the presence of a weak bed and bank and vegetation in the thalwag.

Photo: 51
By: F. Amatucci
Date: May 28, 2020
Feature: WWC-35
Lat: 35.569298,
Long: -88.924454

Looking downstream within the channel of WWC-35. Note the presence of a weak bed and bank and vegetation in the thalwag.

Photo: 52
By: N. Carmean
Date: May 28, 2020
Feature: WWC-36
Lat: 35.566803,
Long: -88.928135

Looking upstream within the channel of WWC-36. Note the presence of a weak bed and bank and vegetation in the thalwag.

Photo: 53
By: F. Amatucci
Date: May 28, 2020
Feature: WWC-37
Lat: 35.566942,
Long: -88.928549

Looking downstream within the channel of WWC-37. Note the presence of a moderate bed and bank and a moderate quantity of wrack lines.

Photo: 54
By: F. Amatucci
Date: May 28, 2020
Feature: WWC-38
Lat: 35.568917,
Long: -88.930152

Looking upstream within the channel of WWC-38. Note the presence of a weak bed and bank and FACW/FAC vegetation in the thalwag.

Photo: 55
By: N. Carmean
Date: May 28, 2020
Feature: WWC-39
Lat: 35.568017,
Long: -88.934943

Looking upstream within the channel of WWC-39. Note the presence of a moderate bed and bank, some substrate sorting, and a mild presence of wrack lines.

Photo: 56
By: N. Carmean
Date: May 28, 2020
Feature: WWC-40
Lat: 35.568737,
Long: -88.934397

Looking upstream within the channel of WWC-40. Note the presence of a moderate bed and bank, some substrate sorting, and a mild presence of wrack lines.

Photo: 57
By: N. Carmean
Date: May 14, 2020
Feature: WWC-41
Lat: 35.571328,
Long: -88.933576

Looking downstream within the channel of WWC-41 between WTL-13b and 13a. Note the presence of a minimal bed and bank, and hydric soils.

Photo: 58
By: N. Carmean
Date: May 14, 2020
Feature: WWC-42
Lat: 35.570187,
Long: -88.945580

Looking upstream within the channel of WWC-42 prior to a large headcut. Note the presence of a moderate bed and bank, wrack lines, and some vegetation within the thalwag.

Photo: 59
By: F. Amatucci
Date: May 14, 2020
Feature: WWC-43
Lat: 35.570090,
Long: -88.946131

Looking upstream within the channel of WWC-43 prior to a large headcut. Note the presence of a weak bed and bank and leaf litter in the channel.

Photo: 60
By: N. Carmean
Date: May 28, 2020
Feature: WWC-44
Lat: 35.569909,
Long: -88.948636

Looking downstream within the channel of WWC-44. Note the presence of a weak bed and bank and a dominance of leaf litter in the channel. Feature is likely a relic channel prior to the creation of farm pond WTL-14.

Photo: 61
By: N. Carmean
Date: May 14, 2020
Feature: WWC-45
Lat: 35.570408,
Long: -88.950158

Looking upstream within the channel of WWC-45. Note the presence of a weak bed and bank and FACU/FAC vegetation within the thalwag.

Photo: 62
By: N. Carmean
Date: May 14, 2020
Feature: WWC-46
Lat: 35.568652,
Long: -88.945392

Looking upstream within the channel of WWC-46. Note the presence of a weak bed and bank and FACU/FAC vegetation and a strong presence of leaf litter within the channel.

Photo: 63
By: N. Carmean
Date: May 14, 2020
Feature: WWC-47
Lat: 35.568766,
Long: -88.946097

Looking upstream within the channel of WWC-47. Note the presence of a weak bed and bank and FACU/FAC vegetation within the thalwag.

Photo: 64
By: N. Carmean
Date: May 12, 2020
Feature: WTL-1
Lat: 35.583486,
Long: -88.937663

Representative conditions of WTL-1. Note the potential presence of being a historic farm pond that has become overgrown.

Photo: 65
By: N. Carmean
Date: May 12, 2020
Feature: WTL-2
Lat: 35.577779,
Long: -88.941487

Representative conditions of WTL-2. Note the potential presence of being a historic farm pond that has become overgrown.

Photo: 66
By: N. Carmean
Date: May 12, 2020
Feature: WTL-3
Lat: 35.580655,
Long: -88.941943

Representative conditions of WTL-3. Note the potential presence of being a historic farm pond that has become overgrown.

Photo: 67
By: N. Carmean
Date: May 12, 2020
Feature: WTL-4
Lat: 35.584285,
Long: -88.942462

Representative conditions of WTL-4. Note the potential presence of being a historic farm pond.

Photo: 68
By: N. Carmean
Date: May 12, 2020
Feature: WTL-5
Lat: 35.573909,
Long: -88.938316

Representative conditions of WTL-5. Note the presence of being a farm pond with a PEM fringe.

Photo: 69
By: N. Carmean
Date: May 13, 2020
Feature: WTL-6
Lat: 35.581566,
Long: -88.933498

Representative conditions of WTL-6. Note the presence of being a farm pond with a PFO fringe.

Photo: 70
By: N. Carmean
Date: May 13, 2020
Feature: WTL-7
Lat: 35.579945,
Long: -88.933053

Representative conditions of WTL-7. Note the wetland is a PEM feature in the electric utility Right-of-Way.

Photo: 71
By: N. Carmean
Date: May 13, 2020
Feature: WTL-8
Lat: 35.573688,
Long: -88.929620

Representative conditions of WTL-8. Note the wetland is a PFO feature.

Photo: 72
By: F. Amatucci
Date: May 13, 2020
Feature: WTL-9
Lat: 35.573554,
Long: -88.928754

Representative conditions of WTL-9. Note the wetland is a PEM feature in the electric utility Right-of-Way.

Photo: 73
By: N. Carmean
Date: May 13, 2020
Feature: WTL-10a
Lat: 35.57294,
Long: -88.9237813

Representative conditions of WTL-10a. Note the potential presence of being a historic farm pond that has become overgrown.

Photo: 74
By: N. Carmean
Date: May 13, 2020
Feature: WTL-10b
Lat: 35.572964,
Long: -88.922921

Representative conditions of WTL-10b. Note the presence of ground water seepage from a berm wall to create a linear wetland feature.

Photo: 75
By: N. Carmean
Date: May 13, 2020
Feature: WTL-11
Lat: 35.567558,
Long: -88.937630

Representative conditions of WTL-11. Note the presence of being a farm pond with a PEM and PFO fringe.

Photo: 76
By: N. Carmean
Date: May 14, 2020
Feature: WTL-12
Lat: 35.571323,
Long: -88.931008

Representative conditions of WTL-12. Note the wetland is a PFO feature.

Photo: 77
By: F. Amatucci
Date: May 14, 2020
Feature: WTL-13a
Lat: 35.571384,
Long: -88.932894

Representative conditions of WTL-13. Note the presence of being a farm pond with a PFO fringe.

Photo: 78
By: F. Amatucci
Date: May 14, 2020
Feature: WTL-14
Lat: 35.568239,
Long: -88.948255

Representative conditions of WTL-14. Note the presence of being a farm pond with a PFO fringe.

Photo: 79
By: N. Carmean
Date: May 28, 2020
Feature: WTL-15a
Lat: 35.575168,
Long: -88.923614

Representative conditions of WTL-15a. Note the presence of being a farm pond with a PFO fringe.

Photo: 80
By: N. Carmean
Date: May 28, 2020
Feature: WTL-15b
Lat: 35.575375,
Long: -88.923061

Representative conditions of WTL-15b. Note the presence of iron oxidizing bacteria coming from seepages within the wetland.

Photo:81
By: N. Carmean
Date: May 28, 2020
Feature: WTL-16
Lat: 35.569176,
Long: -88.930096

Representative conditions of WTL-16. Note the potential presence of being a historic farm pond.

Photo:82
By: N. Carmean
Date: May 28, 2020
Feature: WTL-17
Lat: 35.567993,
Long: -88.951945

Representative conditions of WTL-17. Note the potential presence of being a duck hunting pond with a PFO fringe.

Photo: 83
By: F. Amatucci
Date: May 29, 2020
Feature: WTL-18
Lat: 35.577651,
Long: -88.935320

Representative conditions of WTL-18. Note the presence of being a farm pond with a PEM/PSS fringe.

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Attachment F – USFWS IPaC Report

IPaC **U.S. Fish & Wildlife Service**

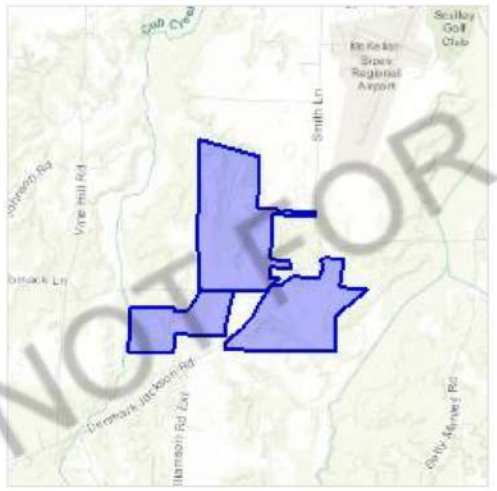
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Madison County, Tennessee



Local office

Tennessee Ecological Services Field Office

(931) 528-6481
(931) 528-7075

446 Neal Street
Cookeville, TN 38501-4027

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

Indiana Bat Myotis sodalis There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Flowering Plants

NAME	STATUS
Whorled Sunflower Helianthus verticillatus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3375	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
American Kestrel Falco sparverius paulus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 1 to Aug 31
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

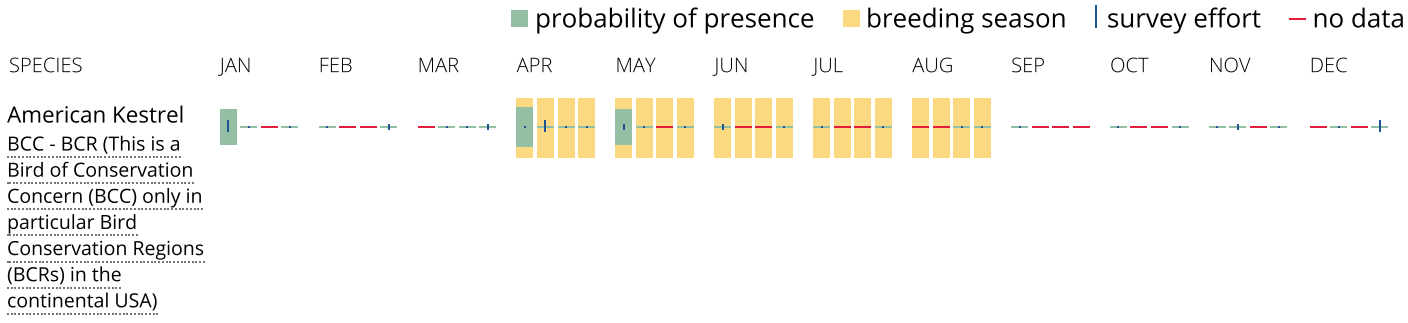
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

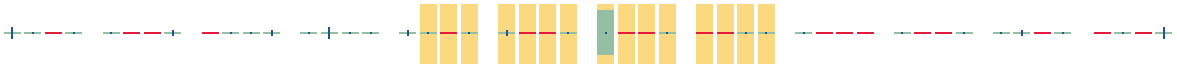
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Wood Thrush
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters.

Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Appendix C

Whorled Sunflower Survey

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MEMORANDUM

TO: Conor Goodson, Silicon Ranch

FROM: Frank Amatucci and Nick Carmean, Biologists, Nashville Office

DATE: 9/3/2020

FILE: **3609510**

RE: Whorled Sunflower Survey for the Silicon Ranch McKellar Solar Farm, Jackson, Madison County, Tennessee

1.0 Introduction

Barge Design Solutions, Inc. (Barge) has been retained by Silicon Ranch Corporation (Silicon Ranch) to perform an additional ecology survey for state endangered and federally endangered whorled sunflower (*Helianthus verticillatus*) within the limits of the proposed McKellar Solar Farm (Project Study Area). The proposed solar farm is currently located within an approximate 931-acre site, within the parcel numbers 47113 057097: 02600, 03100, 01300, 01305, 01306, and 01309 owned by the Johnson Family in Jackson, Madison County, Tennessee. The survey also included an expansion of an existing electric transmission utility line to the existing Jackson Energy Authority (JEA) Substation on James Lawrence Road.

Tennessee Valley Authority (TVA) provided a preliminary database query for the project study area of the potential solar farm. Whorled sunflower was listed as potentially present within Madison County. The listed sunflower species was not observed during the May 2020 onsite investigation within the project study area, which included the delineation of wetlands and watercourses and identification of vegetation communities. A survey for whorled sunflower during the flowering season (between late August and early September) was requested by TVA to determine potential impacts to the terrestrial plant species, or non-thereof.

Barge biologists, Frank Amatucci and Nick Carmean, knowledgeable in terrestrial plant identification, performed the whorled sunflower survey on August 31, 2020 within the entire limits of the project study area. Prior to performing the survey, the biologist familiarized themselves in identifying whorled sunflower to accurately determine its potential presence within the project study area. The findings of this technical report are detailed below and the following attachments are included subsequent to this report.

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- Attachment A – Figures
- Attachment B – Photo Summary

2.0 Site Description

The project study area consists of land located between James Lawrence Road and Denmark-Jackson Road (State Route 223), and additional land located south of Womack Lane and Denmark-Jackson Road. The site is primarily utilized for agriculture with portions of surrounding woodland in the rolling hill areas of the site. A project location map depicting the area can be found in Attachment A, Figure 1. Additionally, the project area has historically been utilized for agriculture. The surrounding land use consists of commercial facilities, residential homes, and fragmented woodlands. During the field investigations cotton and corn were observed throughout the agricultural portion of the property.

The project study area is located north and south of Denmark Jackson Rd, Madison County, Jackson, Tennessee (Attachment A, Figure 1). This area falls within the Mississippi Valley Loess Plains (74) Tennessee ecoregion, and is further categorized into the Loess Plains (74b) physiographic regions of Tennessee. The project study area is within the Westover topographic quadrangle (Attachment A, Figure 2), and the project survey area is located within the HUC-12 South Fork Forked Deer River-Cub Creek (080102050305) and Johnson Creek (080102050303) Lower watersheds. These watersheds are ultimately located within the HUC-8 South Fork Forked Deer watershed (08010205), which is within the Mississippi River Basin (Attachment A, Figure 3).

3.0 Survey Methodology

3.1 Species Description

Whorled sunflower is a perennial herb flowering plant species within the sunflower-daisy-aster family. This particular sunflower species is listed as endangered both federally with United States Fish and Wildlife Service (USFWS) and by the state of Tennessee with TN Division of Natural Areas (TNDNA). Populations of whorled sunflower are known to occur in Tennessee, Alabama, and Georgia. Preferred habitat for the plant species has been documented along roadsides, wooded edges of creeks, edges of fallowed and maintained fields, and in wet prairies. Whorled sunflower is also known to occur in areas of Falaya silt loam soils (NRCS Soil Survey Madison County, TN 1978).

Positive identification of whorled sunflower can be observed during its flowering season, which is known to occur between late August and early September in Tennessee. The flower heads are held in a large branched cluster at the top of the stem with a 10-19 array of yellow flowers. The stems are waxy and hairless

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and can range between 2 to 3 meters in height. The leaves are lance-shaped and are alternate near the top, opposite near the base, and in whorls of 3 to 6 leaves at mid-stem (GADNR, 2020[1]).

3.2 Project Specific Survey

The survey for whorled sunflower within the approximate 931-acres of property and the expansion of an existing electric transmission utility line within the project study area was performed during its anticipated flowering window. Survey efforts were localized to the margins of the existing agricultural fields and roadways within the project study area, as observed during the May 2020 site investigation. These areas include portions of fallow fields, a historic railroad bed in the southern properties, existing utility Right-of-Ways (ROW), farm pond fringes, and edges of farm access roads.

Furthermore, approximately 0.1-percent of the project study area contains Falaya silt loam (Fa) soils. This portion of the site is located in the southeastern property adjacent Denmark-Jackson Road (Attachment A, Figure 4). This portion of the project study area was heavily inspected for any potentially present whorled sunflower.

4.0 Whorled Sunflower Survey

The whorled sunflower presence/absence survey was performed on August 31, 2020, within the recommended window of the flowering season for the species. The survey thoroughly examined all the regions of the project study area that were known to have potential habitat, such as along the agricultural field margins, fallow field areas, and woodland edges. The approximately 0.1-percent of the project study area that is mapped for the Falaya silt loam (Fa) soils was also investigated.

No whorled sunflower specimens were observed within, or in the immediate vicinity to, the project study area. Below details the findings of the presence/absence survey, as well as some species that are similar in appearance to the whorled sunflower.

4.1 *Observed Habitats*

The project area is largely utilized for agriculture and was observed to be planted with cotton and corn during the site investigations and the whorled sunflower survey. In addition to cotton and corn, some grasses and weedy vegetation were observed growing along the margins of the cropland. These grasses and weedy vegetation include foxtail grass (*Setaria pumila*), orchard grass (*Dactylus glomerata*), Johnson grass (*Sorghum halepense*), redtop grass (*Agrostis gigantea*), perennial ryegrass (*Lolium perenne*), bermuda grass (*Cynodon dactylon*), rough cocklebur (*Xanthium strumarium*), red fescue (*Festuca rubra*), common

[1] GADNR, Georgia Biodiversity Portal; *Helianthus verticulatus Small*. Website: https://georgiabiodiversity.a2hosted.com/natels/profile?es_id=21967, updated Feb 2020.

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milkweed (*Asclepias syriaca*), sensitive pea (*Chamaecrista nictitans*), and false sunflower (*Heliopsis helianthoides*).

Native fragmented woodland was also observed in the drainage valleys and rolling hillsides of the project study area, adjacent to the leveled agricultural fields. This forest community ranges between early successional forest to secondary growth mixed hardwood forest. Dominant vegetation in the woodland portion of the project area include white ash (*Fraxinus americana*), southern red oak (*Quercus falcata*), bur oak (*Quercus macrocarpa*), slippery elm (*Ulmus rubra*), hackberry (*Celtis occidentalis*), red cedar (*Juniperus virginiana*), tulip poplar (*Liriodendron radicans*), sycamore (*Platanus occidentalis*), sweet gum (*Liquidambar straciflua*), black cherry (*Prunus serotina*), shagbark hickory (*Carya ovata*) and willow oak (*Quercus phellos*) in the tree stratum; honeysuckle (*Lonicera tartarica*), privet (*Ligustrum sinense*) and multiflora rose (*Rosa multiflora*) in the shrub/sapling stratum, and poison ivy (*Toxicodendron radicans*), Japanese honeysuckle (*Lonicera japonica*), jumpseed (*Polygonum virginianum*), Virginia creeper (*Parthenocissus quinquefolia*) and woodoats (*Chasmanthium latifolium*) in the herbaceous stratum.

The site was also observed with some shrub thickets, specifically under the multiple existing electric transmission utility corridors. These shrub thickets were mostly dominated with blackberry (*Rubus argutus*) and mixtures of the surrounding vegetation from the adjacent woodland and field vegetative communities.

4.2 Observed Comparable Species

While no protected whorled sunflowers were observed within the preferable habitat portions of the project study area, comparable flowering plant species of the sunflower-daisy-aster family were identified. These observed native and non-protected related species include three (3) sunflowers, three (3) daisies, two (2) beggarticks, and one (1) tickseed. The sunflowers observed within the project study area include woodland sunflower (*Helianthus divaricatus*), hairy sunflower (*H. hirsutus*) and Jerusalem artichoke (*H. tuberosus*). Similar in appearance to a sunflower, the observed daisy/coneflower species include false sunflower (*Heliopsis helianthoides*), black-eyed susan (*Rudbeckia hirta*) and purple coneflower (*Echinacea purpurea*); the observed beggarticks species include bearded beggarticks (*Bidens aristosa*) and Spanish needles (*B. bipinnata*); and the observed tickseed species was tall coreopsis (*Coreopsis tripteris*).

4.3 Favorable Soil Unit Area

As mentioned above, no whorled sunflower specimens were observed within the approximately 0.1-percent portion of the project study area that is mapped for the Falaya silt loam (Fa) soils. In this portion of the project a residential home with a maintained mowed lawn and thick early successional woodland was observed. It is likely that the home was placed on top of leveled fill material, which potentially limits the true extent of the Fa soil unit. The adjacent woodland community was observed to be densely packed with early growth trees and shrub species not ideal for whorled sunflower habitat.

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5.0 Conclusion

No whorled sunflower specimens were observed within the preferred habitat portions of the project study area during the August 31, 2020 site visit. While similar species were observed, the whorled sunflower was not found to be present within the approximate 931-acres of property and the expansion of an existing electric transmission utility line. Therefore, impacts to the state endangered and federally endangered whorled sunflower are not expected with the construction of the McKellar Solar Farm.

If you have any questions or require additional information, please contact me by phone at 615-252-4406 or email at Frank.Amatucci@bragedesign.com or Nick Carmean at 615-252-4306 or Nick.Carmean@bargedesign.com. Thank you!

Sincerely,

Frank Amatucci
Biologist – Site Solutions
Barge Design Solutions, Inc.

cc: Matt Clabaugh, Barge Design Solutions, Inc.
Annie Bavis, Barge Design Solutions, Inc.
Nick Carmean, Barge Design Solutions, Inc.

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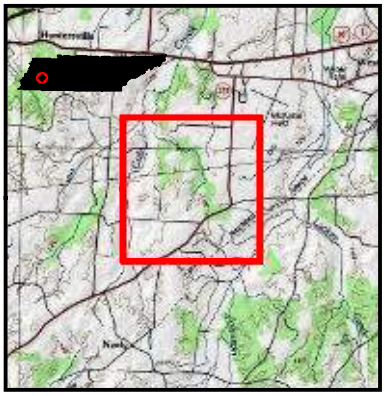
Attachment A – Figures



Proposed Electric Easement

Project Study Area

N

1 inch = 1,500 feet

0 305 610 1,220 1,830

Feet

Basemap: ESRI World Imagery
Source Data: TN ROADS

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
PROJECT LOCATION MAP

PROJ NO: 3609510

DATE: July 2020

FIGURE 1

BARGE DESIGN SOLUTIONS
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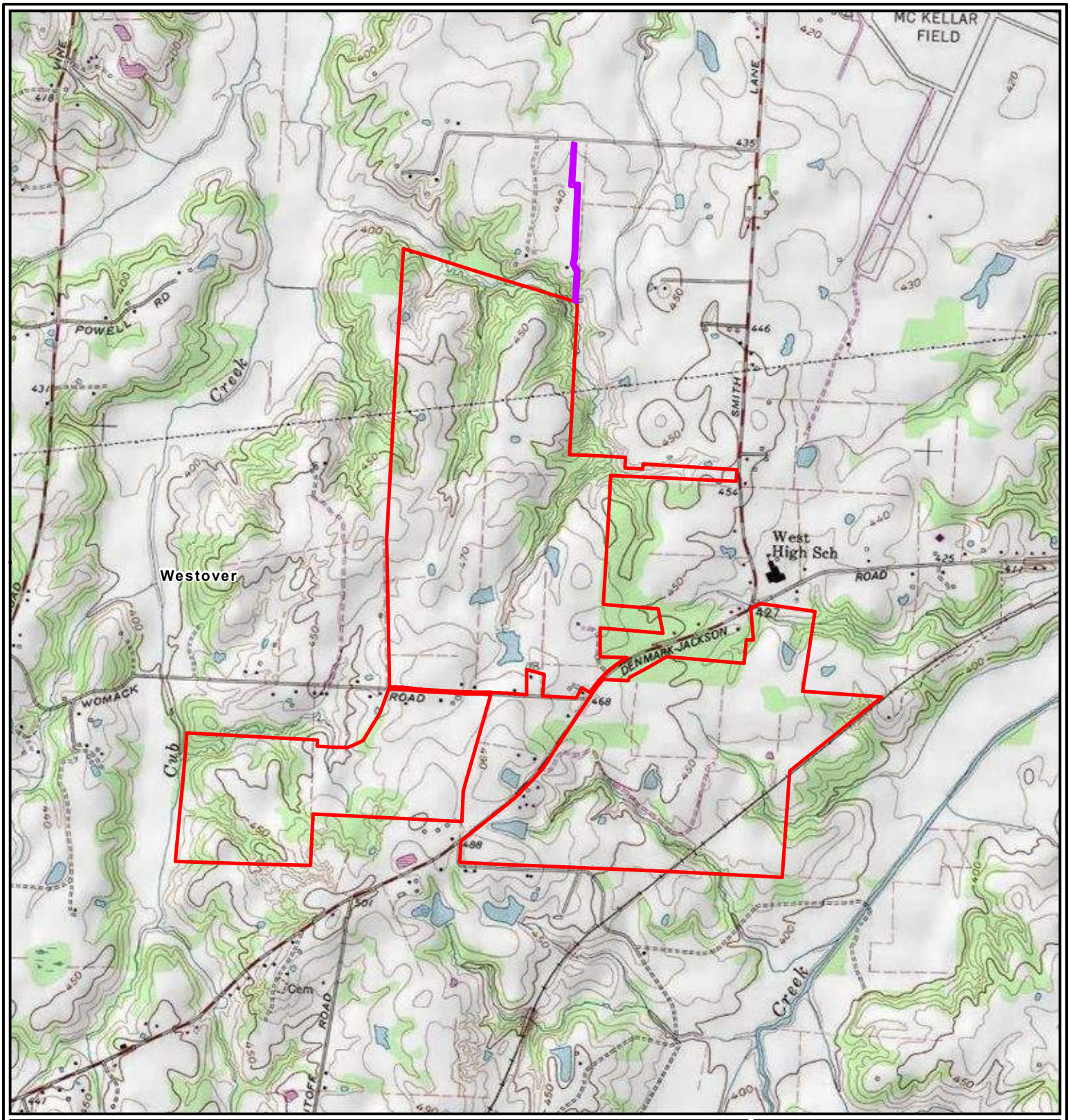
SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\Permit_Maps\USACE_AJD\Figure1_ProjectLocationMap.mxd



WESTOVER 7.5 MINUTE QUADRANGLE

Project Study Area
Proposed Electric Easement
USGS 24k Topo Map Boundary

N

1 inch = 2,000 feet

0 495 990 1,980 2,970 Feet

Basemap: ESRI USA Topo Map
Source Data: ESRI 24K Boundaries

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
USGS TOPOGRAPHIC MAP

PROJ NO: 3609510

DATE: July 2020

FIGURE 2

BARGE DESIGN SOLUTIONS
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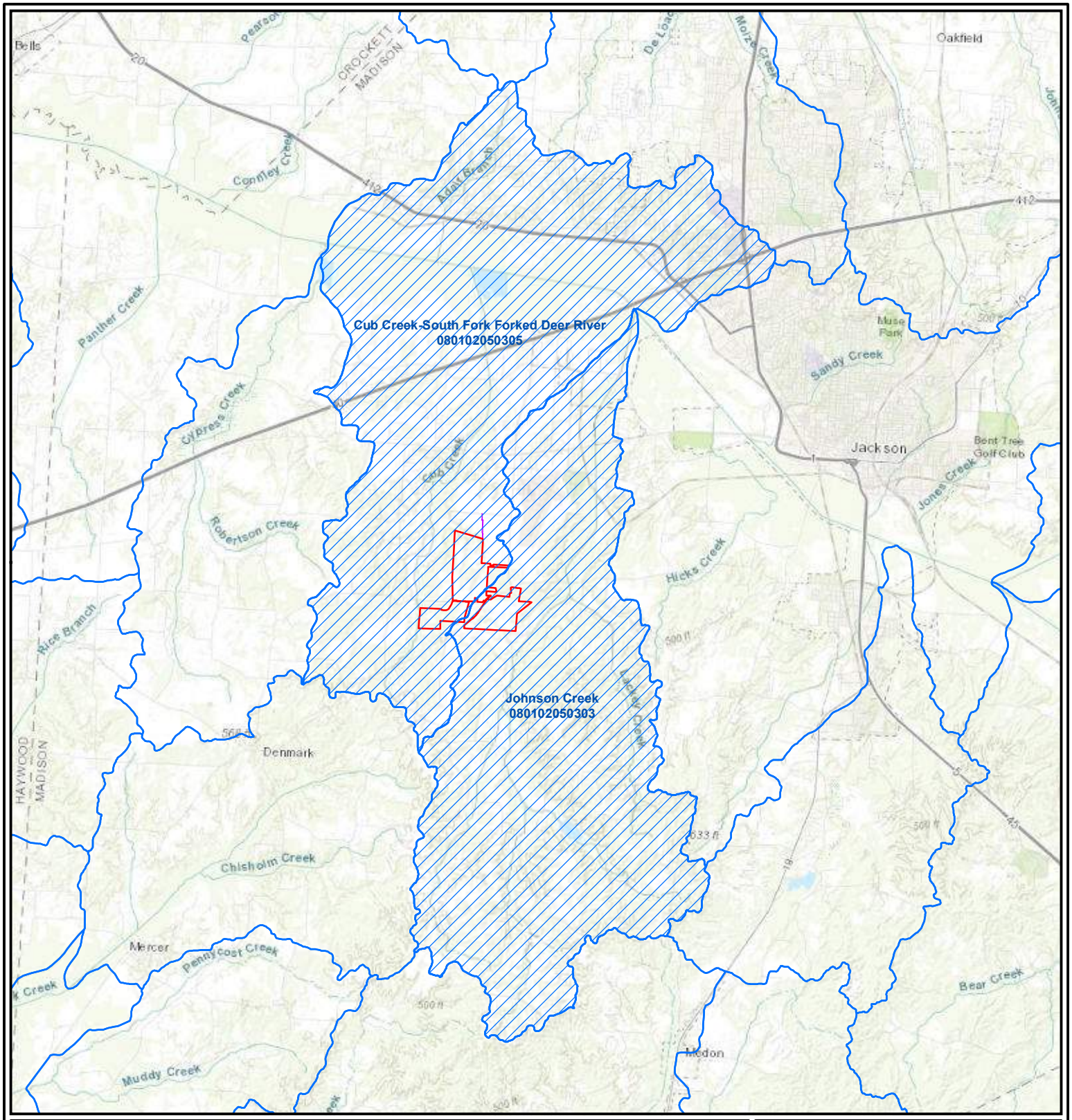
SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\Permit_Maps\USACE_AJD\Figure2_USGS_Map.mxd



PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
HUC 12 WATERSHED MAP

PROJ NO: 3609510

DATE: July 2020

FIGURE 3

BARGE DESIGN SOLUTIONS
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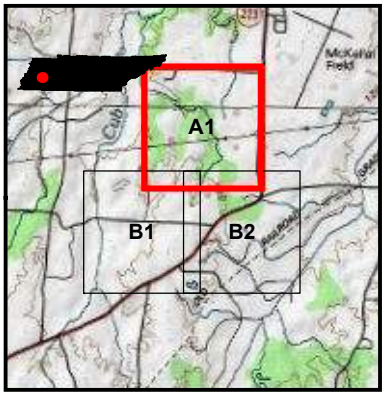
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\Permit_Maps\USACE_AJD\Figure3_WatershedMap.mxd



Project Soils

Soil Unit

Ca	FcB2	LoB	Soil Unit
Co	GrB	LoB3	Project Study Area
Cs	GrB3	PrC3	Proposed Electric Easement
Fa	LeC3	PrD3	
FcB	LeD	SmE	
	LeD3	SmF	
	LmE3	W	

N

1 inch = 800 feet

0 165 330 660 990 Feet

Basemap: ESRI World Imagery
Source Data: USDA Soil Survey TN113

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
PROJECT SOIL MAP

PROJ NO: 3609510

DATE: July 2020

FIGURE 4-A1

BARGE DESIGN SOLUTIONS
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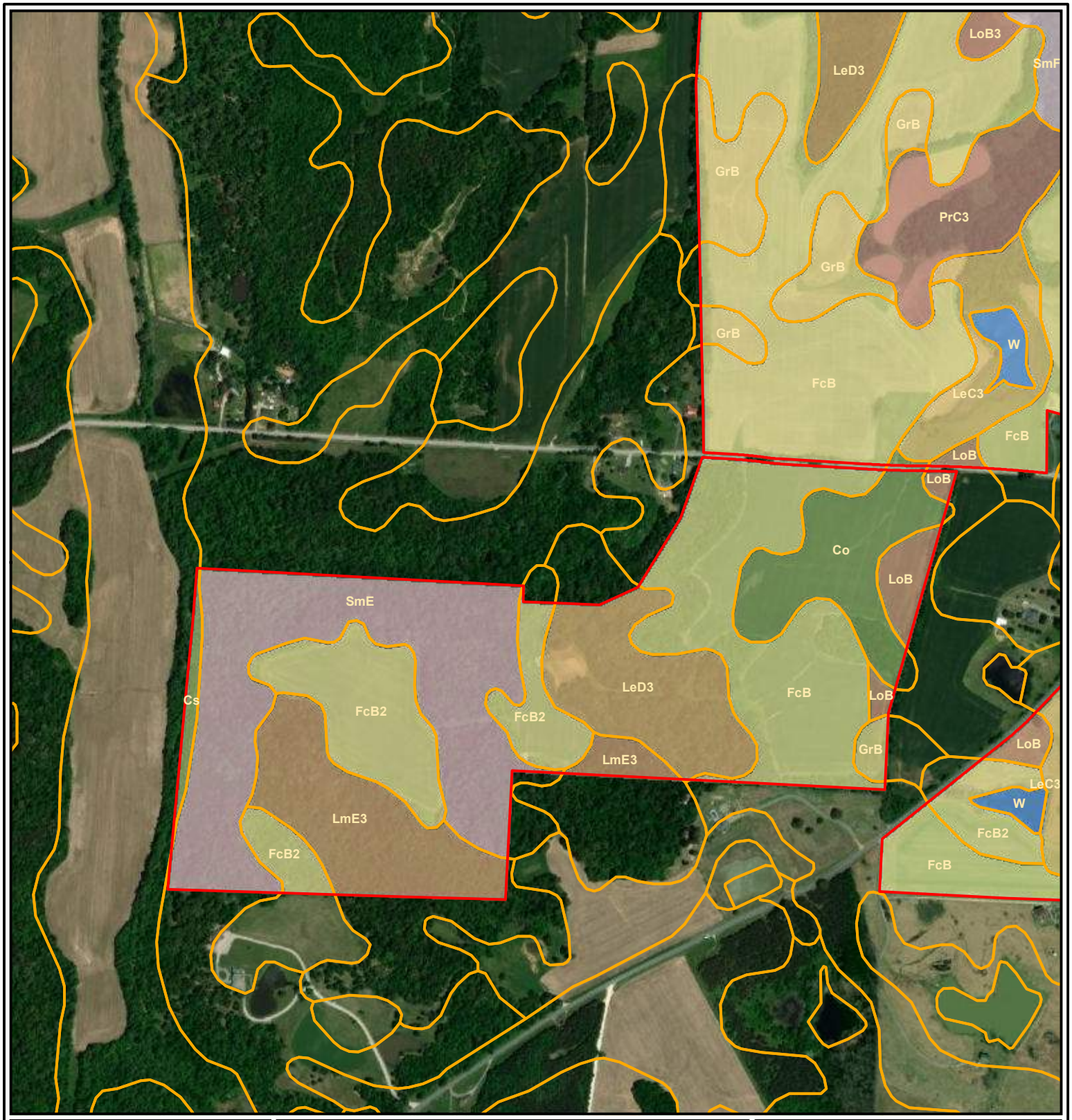
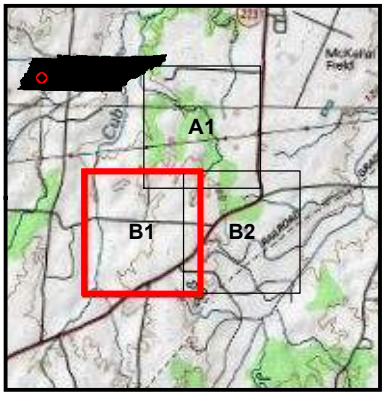
SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\Permit_Maps\USACE_AJD\Figure4_SoilMap.mxd





Project Soils

Soil Unit

Ca	FcB2	LoB	Soil Unit
Co	GrB	LoB3	Project Study Area
Cs	GrB3	PrC3	Proposed Electric Easement
Fa	LeC3	PrD3	
FcB	LeD	SmE	
	LeD3	SmF	
	LmE3	W	

N

1 inch = 800 feet

Basemap: ESRI World Imagery
Source Data: USDA Soil Survey TN113

0 165 330 660 990 Feet

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
PROJECT SOIL MAP

PROJ NO: 3609510

DATE: July 2020

FIGURE 4-B1

BARGE DESIGN SOLUTIONS
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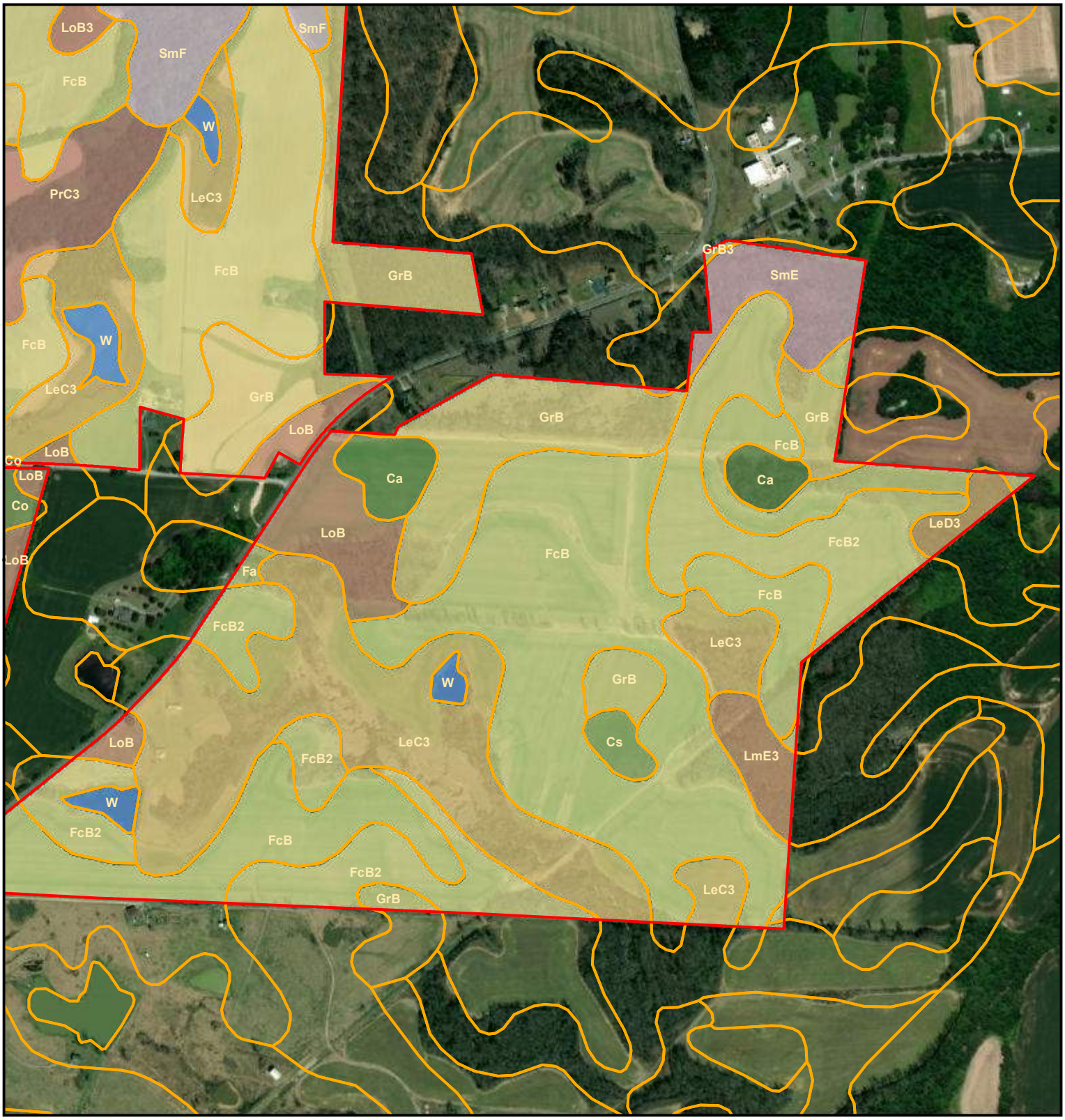
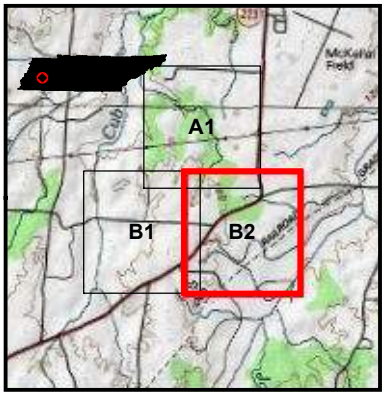
SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\Permit_Maps\USACE_AJD\Figure4_SoilMap.mxd





Project Soils

Soil Unit

Ca	FcB2	LoB	W
Co	GrB	LoB3	
Cs	GrB3	PrC3	
Fa	LeC3	PrD3	
FcB	LeD	SmE	
	LeD3	SmF	
	LmE3		

Soil Unit

Project Study Area

Proposed Electric Easement

1 inch = 800 feet

0 165 330 660 990 Feet

N

Basemap: ESRI World Imagery
Source Data: USDA Soil Survey TN113

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
PROJECT SOIL MAP

PROJ NO: 3609510

DATE: July 2020

FIGURE 4-B2

BARGE DESIGN SOLUTIONS
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SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\Permit_Maps\USACE_AJD\Figure4_SoilMap.mxd

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Attachment B – Photo Summary

Photo: 1
By: F. Amatucci
Date: August 31, 2020
Feature: Ag. Field Margins
Lat: 35.572702,
Long: -88.922839

Representative conditions of the field margins adjacent to the current agricultural fields. Note the presence of false sunflower.

Photo: 2
By: F. Amatucci
Date: August 31, 2020
Feature: Utility Expansion Area
Lat: 35.592527,
Long: -88.934604

Representative conditions of the utility expansion area from the existing substation on James Lawrence Road. Note the presence of sensitive pea.

Photo: 3
By: F. Amatucci
Date: August 31, 2020
Feature: Historic Railroad Bed
Lat: 35.569467,
Long: -88.923966

Representative conditions of the historic railroad bed area within the project study area. Note the presence of tall coreopsis and Jerusalem artichoke.

Photo: 4
By: F. Amatucci
Date: August 31, 2020
Feature: Fa Soil Unit Area
Lat: 35.571277,
Long: -88.934476

Representative conditions of the Falaya silt loam soils area within the project study area.

Photo: 5
By: F. Amatucci
Date: August 31, 2020
Feature: Woodland Sunflower
Lat: 35.582151,
Long: -88.941267

Related species, woodland sunflower observed within the project study area.

Photo: 6
By: F. Amatucci
Date: August 31, 2020
Feature: Hairy Sunflower
Lat: 35.581309,
Long: -88.941993

Related species, hairy sunflower observed within the project study area.

Photo: 7
By: F. Amatucci
Date: August 31, 2020
Feature: Jerusalem Artichoke
Lat: 35.569483,
Long: -88.923802

Related species, Jerusalem artichoke observed within the project study area.

Photo: 8
By: F. Amatucci
Date: August 31, 2020
Feature: False Sunflower
Lat: 35.584352,
Long: -88.938742

Related species, false sunflower observed within the project study area.

Photo: 9
By: F. Amatucci
Date: August 31, 2020
Feature: Black-eyed Susan
Lat: 35.573879,
Long: -88.923241

Related species, black-eyed Susan observed within the project study area.

Photo: 10
By: F. Amatucci
Date: August 31, 2020
Feature: Purple Coneflower
Lat: 35.573879,
Long: -88.923241

Related species, purple coneflower observed within the project study area.

Photo: 11
By: F. Amatucci
Date: August 31, 2020
Feature: Bearded Beggarticks
Lat: --,
Long: --

Related species, bearded beggarticks observed within the project study area.

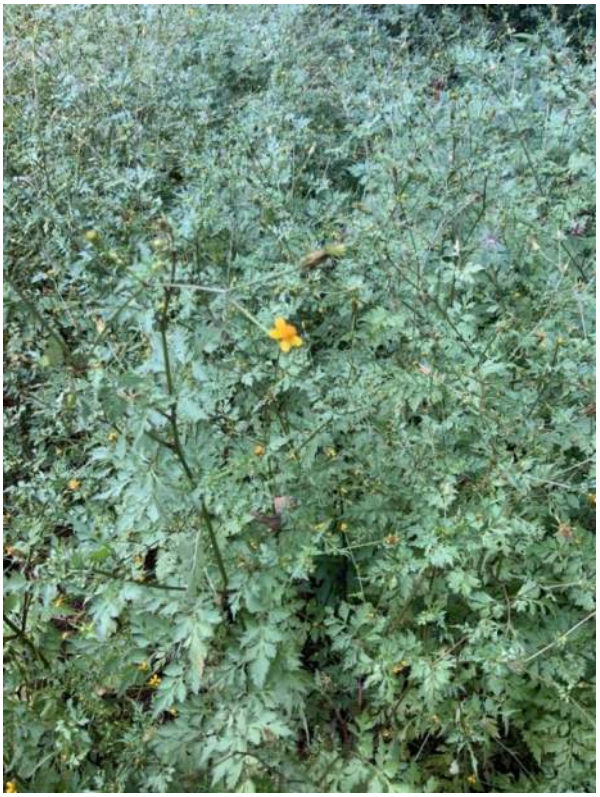

Photo: 12
By: F. Amatucci
Date: August 31, 2020
Feature: Spanish Needles
Lat: 35.569340,
Long: -88.946482

Related species, Spanish needles observed within the project study area.

Photo: 13
By: F. Amatucci
Date: August 31, 2020
Feature: Tall Coreopsis
Lat: 35.569483,
Long: -88.923802

Related species, tall coreopsis observed within the project study area.

Appendix D

Glint and Glare Analysis

SR McKellar Solar Project

Barge Design Solution, LLC

Madison County, Tennessee

Glint & Glare Analysis

August 28, 2020

Capitol Airspace Group

capitolairspace.com

(703) 256 - 2485

Summary

Barge Design Solution, LLC is proposing to construct solar arrays near the town of Denmark in Madison County, Tennessee (***Figure 1***). On behalf of Barge Design Solution, LLC, Capitol Airspace performed a Glint and Glare Analysis utilizing the Solar Glare Hazard Analysis Tool (SGHAT) in order to identify the potential for glare impacts. Specifically, this analysis considered the potential for glare impacts on aircraft approaching McKellar-Sipes Regional Airport (MKL) Runway 02/20 and Runway 11/29. Since McKellar-Sipes Regional Airport (MKL) has an Air Traffic Control Tower (ATCT), this analysis also considered the potential for impact on air traffic control tower personnel. Additionally, this analysis considered the potential for glare impacts on nearby residences and roadways.

The results of the analysis indicate that there are no predicted glare occurrences for approaches to McKellar-Sipes Regional Airport (MKL) runways or ATCT personnel as a result of proposed single-axis tracking solar arrays. These results conform to, and are in accordance with, the FAA's interim policy for *Solar Energy System Projects on Federal Obligated Airports*.

Additionally, there is no predicted glare for residences or roadways as a result of the proposed single-axis tracking solar arrays. These results are based on the application of FAA glint and glare standards in the absence of non-aviation regulatory guidelines.

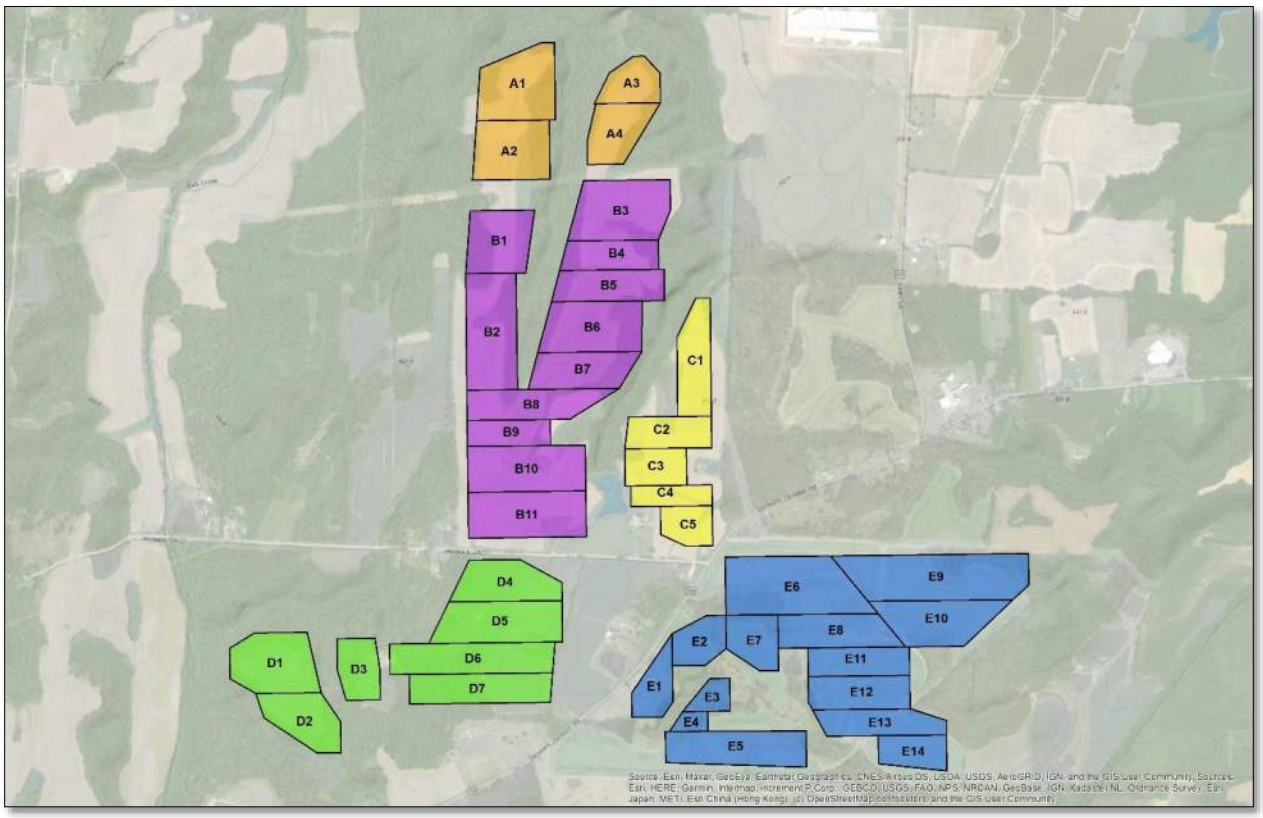

Figure 1: Location and identification of SR McKellar solar parcels

Methodology

In cooperation with the Department of Energy (DOE), the Federal Aviation Administration (FAA) developed and validated the Sandia National Laboratories Solar Glare Hazard Analysis Tool (SGHAT), now licensed through ForgeSolar. The FAA requires the use of the SGHAT in order to enhance safety by providing standards for measuring the ocular impact of proposed solar energy systems on pilots and air traffic controllers. ForgeSolar has enhanced the SGHAT for glare hazard analysis beyond the aviation environment. These enhancements include a route module for analyzing roadways as well as an observation point module for analyzing residences.

The SGHAT analyzes potential for glare over the entire calendar year in one-minute intervals from when the sun rises above the horizon until the sun sets below the horizon. The glare hazard determination relies on several approximations including observer eye characteristics, angle of view, and typical blink response time. The SGHAT does not account for physical obstructions between reflectors and receptors. When glare is found, SGHAT classifies the ocular impact into three categories:

Green: Low potential for temporary after-image
Yellow: Potential for temporary after-image
Red: Potential for permanent eye damage

The FAA interim policy for *Solar Energy System Projects on Federally Obligated Airports* requires the absence of red or yellow predicted glare occurrences in the cockpit. This analysis utilized the FAA approved default SGHAT setting which simulates the pilot's view from the cockpit. No glare occurrences of any category are allowed for ATCT personnel. Currently, there are no defined standards for acceptable ocular impact on residences or roadways.

Data

Solar array specifications (***Table 1***) as well as location and height information were provided by Barge Design Solution, LLC. The SGHAT determines site elevations unless entered manually. Runway end coordinates, elevations, threshold crossing heights, and visual glidepath angles were obtained from the FAA National Flight Data Center (NFDC) National Airspace System Resource (NASR) dataset.

Table 1: SR McKellar Solar array specifications

Parameter	Value
Axis tracking:	Single-axis rotation
Tracking axis orientation:	180°
Tracking axis tilt:	0°
Max tracking angle:	60°
Resting angle:	30°
Panel material:	Smooth glass with AR coating
Reflectivity:	Vary with sun
Slope error:	Correlate with material

Results

McKellar-Sipes Regional Airport

Runway 02/20

The SGHAT results do not predict glare occurrences along the Runway 02 or Runway 20 approach paths (dashed purple line, ***Figure 2***). McKellar-Sipes Regional Airport (MKL) has a "plan on file" with the FAA to extend Runway 02 approximately 1,750 feet to the south. The SGHAT results do not predict glare occurrences along the extended Runway 02 approach path (dashed gold line, ***Figure 2***).

Runway 11/29

The SGHAT results do not predict glare occurrences along the Runway 11 or Runway 29 approach paths (dashed green line, ***Figure 2***).

Air Traffic Control Tower

The SGHAT results do not predict glare occurrences for air traffic control personnel (orange point, ***Figure 2***).

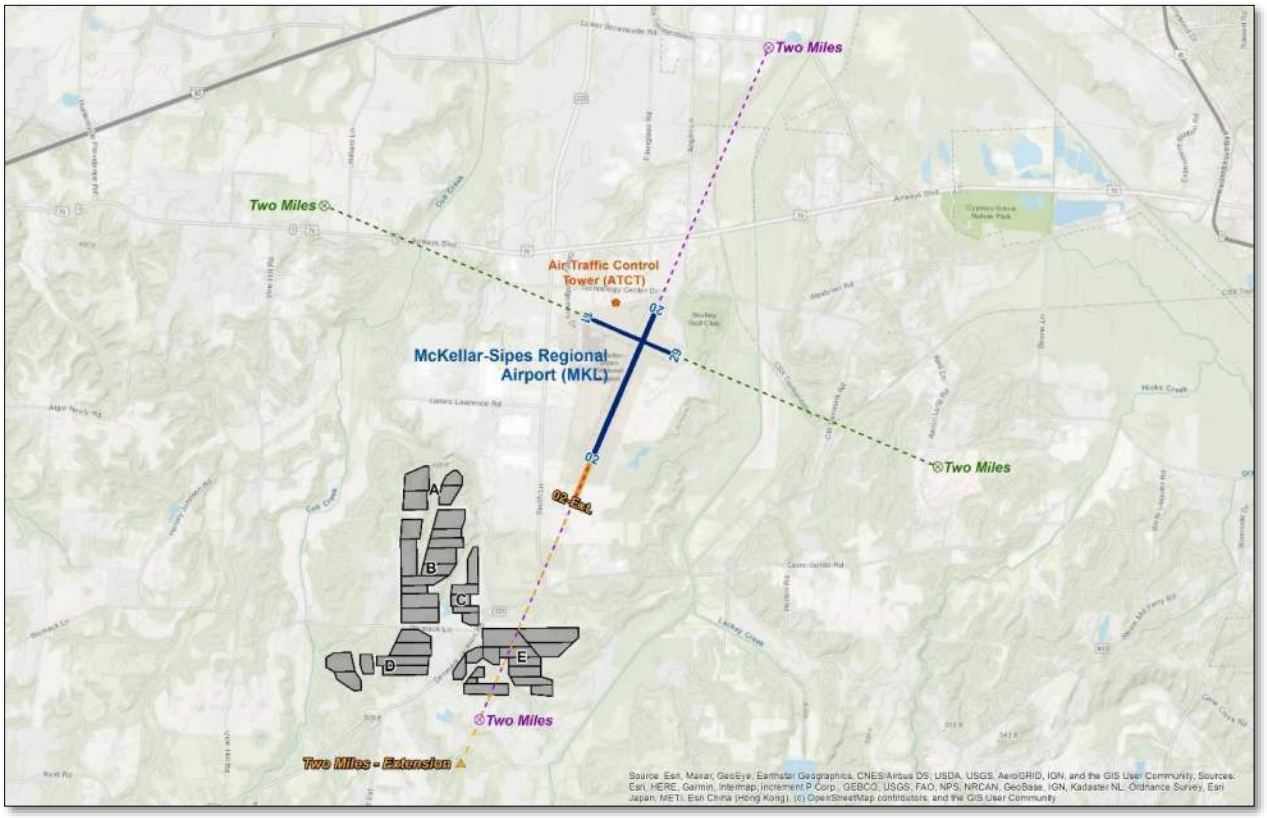

Figure 2: McKellar-Sipes Regional Airport (MKL) approach paths (dashed lines) and ATCT location (orange point)

Residences

The SGHAT assessed the potential for glare occurrences at 44 discrete observation point receptors (purple points, ***Figure 4***). Each observation point was assessed at an eight-foot first story viewing height and a 16-foot second story viewing height. The SGHAT results do not predict glare occurrences for any of the 44 observation points at either viewing height as a result of single-axis tracking arrays.

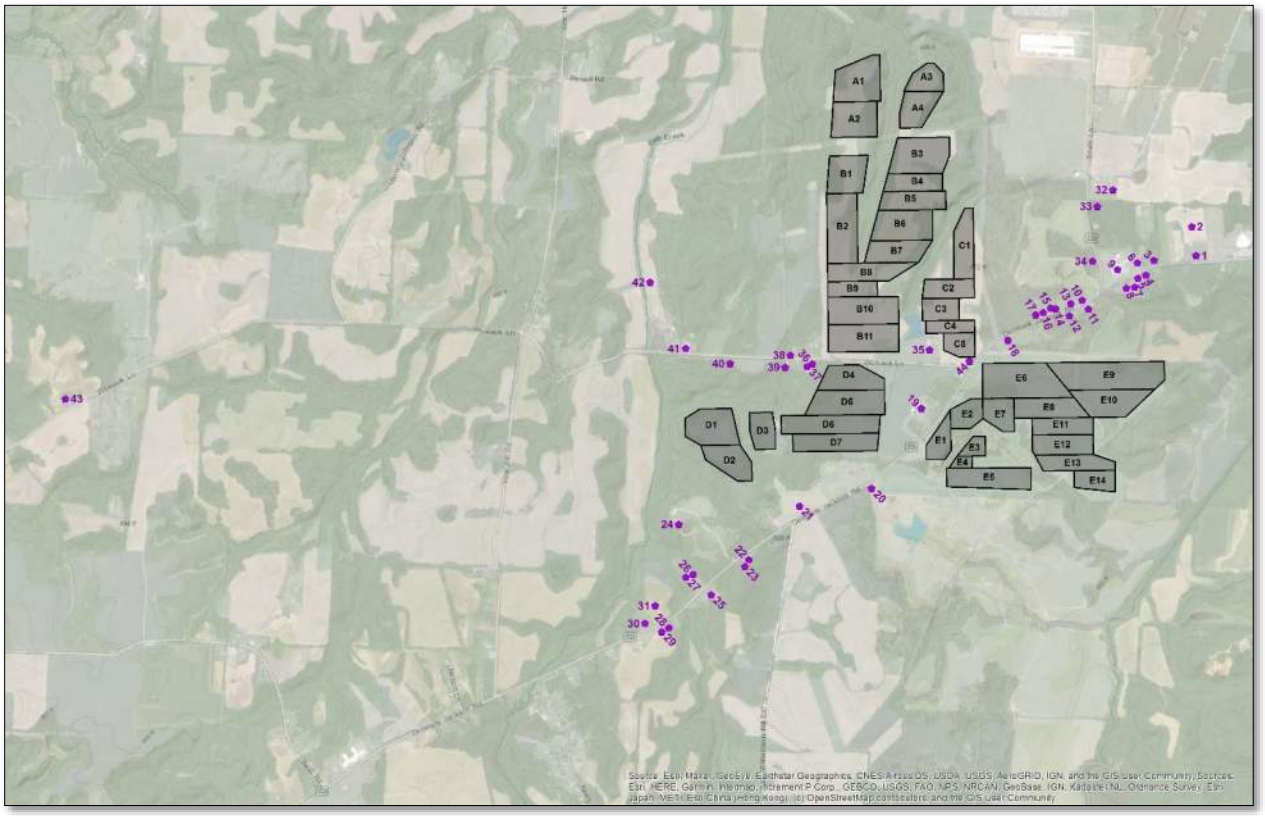

Figure 4: Discrete observation point receptors (purple points)

Routes

The SGHAT assessed the potential for glare occurrences along seven route receptors (solid lines, ***Figure 5***). Each roadway was assessed at a four-foot car viewing height and an eight-foot truck viewing height. The SGHAT results do not predict glare occurrences for any of the roadways at either viewing height as a result of single-axis tracking arrays.

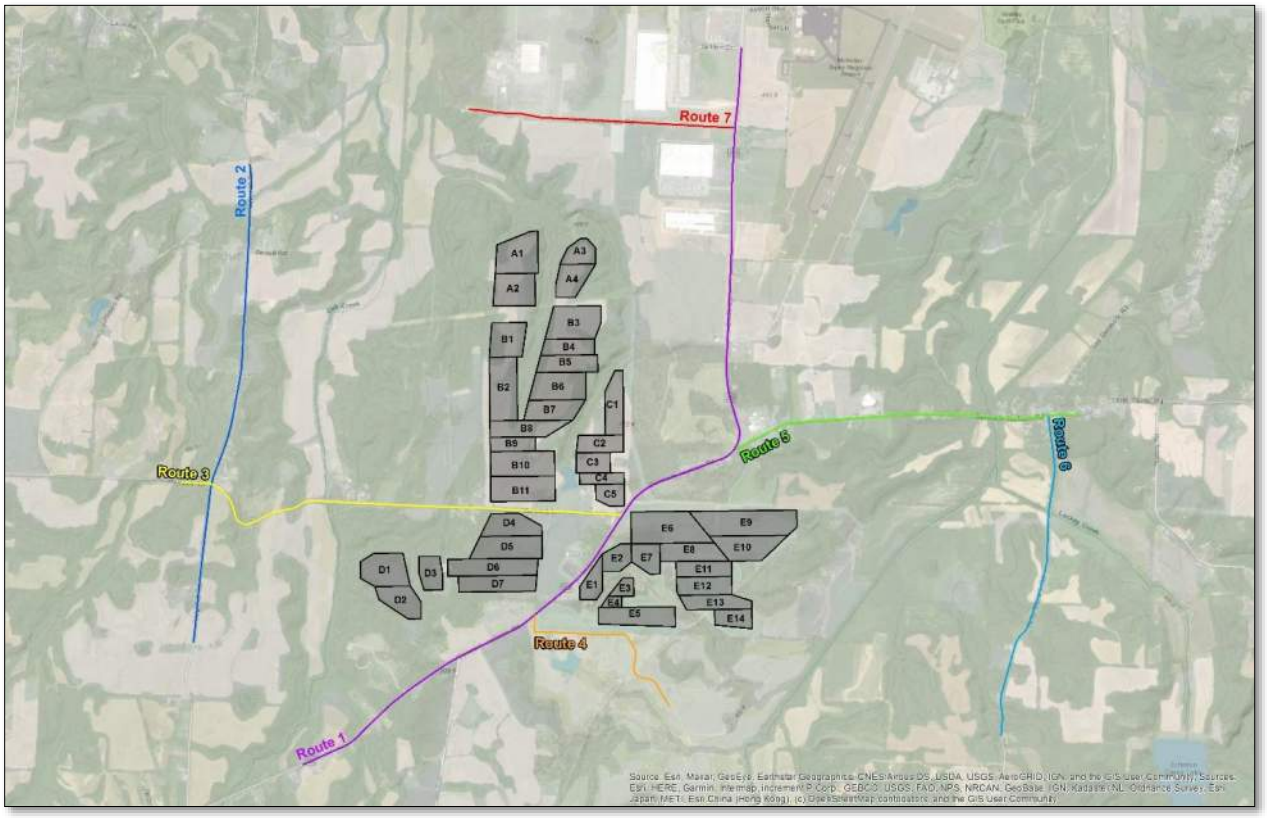

Figure 5: Roadway receptors (solid lines)

Conclusion

The SGHAT does not predict any glare occurrences for McKellar-Sipes Regional Airport (MKL) Airport approaches or air traffic control operations. These findings are compliant with the FAA interim policy for *Solar Energy System Projects on Federally Obligated Airports*. Additionally, the SGHAT does not predict any glare occurrences for nearby residences or roadways as a result of single-axis tracking arrays. As noted in the assumptions, the glint and glare analysis does not consider vegetation, fencing, or other natural obstructions. This glint and glare analysis takes the most conservative approach in assessing the possibility of glare occurrences.

Table 2: Annual glare occurrence summary

Receptor	Green Glare (Hours:Minutes)	Yellow Glare (Hours:Minutes)	Red Glare (Hours:Minutes)
MKL – Runway 02	0:00	0:00	0:00
MKL – Runway 20	0:00	0:00	0:00
MKL – Runway 11	0:00	0:00	0:00
MKL – Runway 29	0:00	0:00	0:00
MKL – Runway 02 (extended)	0:00	0:00	0:00
Route 1 - Cars	0:00	0:00	0:00
Route 2 - Cars	0:00	0:00	0:00
Route 3 - Cars	0:00	0:00	0:00
Route 4 - Cars	0:00	0:00	0:00
Route 5 - Cars	0:00	0:00	0:00
Route 6 - Cars	0:00	0:00	0:00
Route 7 - Cars	0:00	0:00	0:00
Route 1 - Trucks	0:00	0:00	0:00
Route 2 - Trucks	0:00	0:00	0:00
Route 3 - Trucks	0:00	0:00	0:00
Route 4 - Trucks	0:00	0:00	0:00
Route 5 - Trucks	0:00	0:00	0:00
Route 6 - Trucks	0:00	0:00	0:00
Route 7 - Trucks	0:00	0:00	0:00
Residences (First Story)	0:00	0:00	0:00
Residences (Second Story)	0:00	0:00	0:00

If you have any questions regarding the findings in this analysis, please contact ***Rick Coles*** or ***Jason Auger*** at (703) 256-2485.

Appendix E

Cultural Resources Survey

A Phase I Cultural Resources Survey of a Planned Solar Array in Madison County, Tennessee

Tennessee Valley Archaeological Research

A PHASE I CULTURAL RESOURCES SURVEY OF A PLANNED SOLAR ARRAY IN MADISON COUNTY, TENNESSEE

by
Braden A Dison, Lauren Ratliff, Shanda Davidson, Dan H. Webb, Heather Bass, Jillian Rael, Brittney Carnell, Hunter B. Johnson, and Kevin Cowart

Prepared for:
Barge Design Solutions, Inc.
615 3rd Avenue South, Suite 700
Nashville, Tennessee 37210

Prepared by:
Tennessee Valley Archaeological Research
2119 Metro Circle SW, Suite B
Huntsville, Alabama 35801

Hunter B. Johnson
Principal Investigator

August 2020

Revised
November 2020

ABSTRACT

On behalf of Barge Design Solutions, Inc. (Barge), Tennessee Valley Archaeological Research (TVAR) conducted a Phase I cultural resources survey associated with Silicon Ranch Inc.'s (Silicon Ranch) solar array project in Madison County, Tennessee. The original 379.7 ha (938.3-acre) archaeological survey area consisted of the 378.5 ha (935.3-acre) tract of land where the solar array is to be constructed, in addition to 1.38 km (0.86 mi) of new transmission line with a 30 m (100 ft) wide right-of-way (ROW). Following the initial investigation, TVAR also surveyed a 0.8 ha (2-acre) tract of land and a 0.2 ha (0.5-acre) tract of land, both of which are situated along the southern boundary of the initial survey area. In total, the archaeological survey area covered 380.7 ha (940.8 acres). The architectural area of potential effects (APE) consisted of a 0.8 km (0.5 mi) radius surrounding the solar array's footprint. Areas within the survey radius that were determined not to be within view of the solar array due to terrain, vegetation, and/or modern built environments were not considered part of the APE.

Prior to initiating field investigations, TVAR conducted a background search of digital files provided at the THC, which identified one previously recorded architectural resource (Smithland Farm, MD-IP-4) within the APE. MD-IP-4 is located in the information files containing a 2004 Tennessee Department of Transportation survey report, which determined the farm as ineligible for NRHP listing. TVAR's current survey, which occurred on May 12, 2020 and November 3, 2020, resulted in concurrence with this previous finding. The remaining surveyed architectural resources, MD-IP-1 through MD-IP-3, are likewise recommended by TVAR as ineligible for NRHP listing, as each lacks significance and/or exhibits insufficient integrity. TVAR recommends no further investigations of above-ground resources within the APE.

The initial archaeological survey was conducted from May 11 to July 27, 2020, and resulted in the identification of 71 cultural resources within the project area, including 13 newly recorded sites (40MD267, 40MD268, 40MD269, 40MD270, 40MD271, 40MD272, 40MD273, 40MD274, 40MD275, 40MD276, 40MD277, 40MD278, and 40MD279), five non-site cultural resources (NSCR 1-5), and 53 isolated finds. The investigation of the additional tracts was conducted from November 2 to 4, 2020, and resulted in the expansion of site 40MD270. It is TVAR's opinion that eight sites (40MD267, 40MD268, 40MD269, 40MD271, 40MD274, 40MD275, 40MD277, and 40MD278) offer little research potential beyond the findings of the Phase I survey, and all are recommended not eligible for inclusion in the NRHP. TVAR recommends no additional investigations of these resources. Five sites (40MD270, 40MD272, 40MD273, 40MD276, and 40MD279) warrant an NRHP eligibility status of undetermined. TVAR recommends avoidance of these five sites pending additional archaeological investigations to better ascertain the NRHP eligibility statuses of these resources. The five non-site cultural resources and 53 isolated finds lack significant research potential beyond the findings of the Phase I survey and are not eligible for listing on the NRHP. TVAR recommends that no further archaeological investigations of the five non-site cultural resources or 53 isolated finds are necessary in connection with the proposed project.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1. INTRODUCTION

Under contract with Barge Design Solutions, Inc. (Barge), Tennessee Valley Archaeological Research (TVAR) conducted a Phase I cultural resources survey associated with Silicon Ranch Inc.'s (Silicon Ranch) solar array project in Madison County, Tennessee. The original 379.7 ha (938.3-acre) archaeological survey area consisted of the 378.5 ha (935.3-acre) tract of land where the solar array is to be constructed, in addition to 1.38 km (0.86 mi) of new transmission line with a 30 m (100 ft) wide right-of-way (ROW). Following the initial investigation, TVAR also surveyed a 0.8 ha (2-acre) tract of land and a 0.2 ha (0.5-acre) tract of land, both of which are situated along the southern boundary of the initial survey area. In total, the archaeological survey area covered 380.7 ha (940.8 acres) (Figure 1.1). The architectural area of potential effects (APE) consisted of a 0.8 km (0.5 mi) radius surrounding the solar array's footprint. Areas within the survey radius that were determined not to be within view of the solar array due to terrain, vegetation, and/or modern built environments were not considered part of the APE.

The purpose of the survey was to assist Barge and their client, Silicon Ranch, in fulfilling requirements established by the Tennessee Valley Authority (TVA) in accordance with obtaining financial assistance with the construction of the proposed solar array. Additionally, the investigation served to aid Barge and Silicon Ranch in Section 106 compliance and to provide an inventory of cultural resources within the survey area, a description of the current conditions at the resources identified, and National Register of Historic Places (NRHP) eligibility status recommendations regarding each resource identified. All work was consistent with the Secretary of the Interior's S*tandards and Guidelines for Identification* (National Park Service [NPS] 1983) and met the requirements established by the TVA, the Tennessee Historical Commission (THC) (1991), and the Tennessee Department of Environment and Conservation (TDEC) (2018).

TVAR architectural staff, Jillian Rael and Brianne Huitt-Thornton, undertook field investigation on May 12, 2020, and revisited resource MD-IP-2 on November 3, 2020. The initial archaeological survey was conducted between May 11 and July 27, 2020, under the supervision of Lauren Ratliff with the assistance of Kent Aasand, Henry Alexander, Don Andrews, Matthew Bean, Stahlie Calvin, Clayton Davis, Keenan Drake, Zac Hannigan, Bre Henderson, John Hueffed, Brent Lyles, Wyatt Roberts, Brooke Schafhirt, Simon Sherman, Matt Sullivan, Brady Swilley, and Jonah Vitillo. The subsequent archaeological survey was conducted between November 2 and 4, 2020, under the supervision of Lauren Ratliff with the assistance of Matthew Bean. Heather Bass and Mindy Rogers conducted laboratory analysis and curation preparation under the direction of Laboratory Director Daniel Webb. Kevin Cowart and Elinor Crook conducted all GIS analysis associated with the project. Hunter Johnson, Principal Investigator, managed the overall project.

The remainder of this report is divided into six chapters. Chapter 2 provides an overview of the environmental setting of the project area and discusses land use conditions at the time of TVAR's investigation. Chapter 3 summarizes the prehistoric and historic cultural contexts for the project area. Chapter 4 and Chapter 5 detail the architectural and archaeological investigations, respectively, including reviews of background information, discussions of the field methods employed during the surveys, descriptions of the cultural resources identified, and assessments of their eligibility for in-

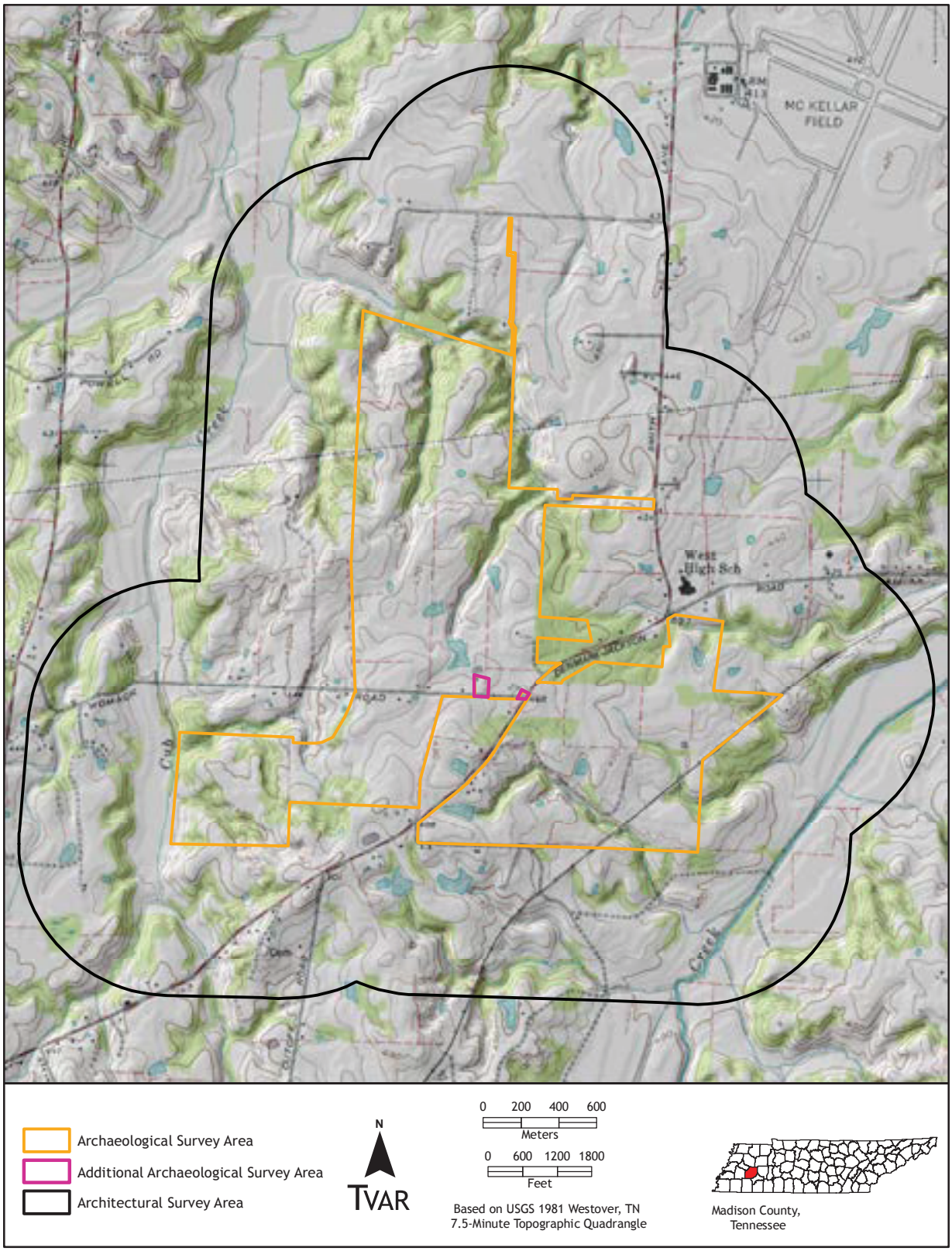

Figure 1.1. Project location map.

clusion on the NRHP. Chapter 6 discusses the materials recovered during the archaeological survey. The final chapter, Chapter 7, summarizes the results of the Phase I investigation and provides recommendations for the cultural resources identified during the survey. In addition to the main body of the report, three appendices supply supporting data and documentation relevant to the project. Appendix A provides a roster for the data collection points recorded during the archaeological survey associated with shovel testing. Tennessee Division of Archaeology (TDOA) site forms are provided in Appendix B. Appendix C supplies documentation relating to the curation of field notes, maps, artifacts, photos, and pertinent records.

CHAPTER 2. ENVIRONMENT

The survey area is located in west-central Madison County and lies within the South Fork Forked Deer watershed, part of the Mississippi River Basin. Cub Creek and Johnson Creek are adjacent to the west and east edges of the survey area, respectively, and unnamed tributaries of the creeks traverse several portions of the project area. In regard to its natural environment, the survey area lies within the Loess Plains Level IV ecoregion, part of the larger Mississippi Valley Loess Plains Level III ecoregion (Figure 2.1). The Mississippi Valley Loess Plains region extends from the Ohio River in western Kentucky to Louisiana. Its terrain consists of irregular plains, hills, and river bluffs comprised of thick layers of loess (Griffith et al. 2001).

The Loess Plains Level IV ecoregion is comprised of gently rolling to irregular plains with thinning layers of loess. Erosional activity throughout the region has resulted in wide, flat floodplains. Vegetation native to the Loess Plains includes oak-hickory and oak-hickory-pine forests of white, post, southern red, blackjack oak; mockernut and pignut hickory; shortleaf and loblolly pine; beech; and blackgum. Southern floodplain forests of bald cypress and water tupelo and bottomland hardwood forests of overcup, swamp chestnut, water oak, water hickory, red maple, and green ash are also found in the area. The land within the Loess Plains is used primarily for agriculture and tree farming. Croplands are used to cultivate soybeans, cotton, and corn (Griffith et al. 2001).

Surficial geology underlying the survey area is comprised of Quaternary loess that reaches up to 100 feet thick along the Mississippi River bluffs (Figure 2.2). Loess formation is characterized by clayey and sandy silt that is gray to brown. A principal source area for flaked stone raw materials in relation to the project area is the Citronelle Formation, a secondary deposit of mixed gravels that extends from southern Illinois to the coastal plains of Louisiana, Texas, Mississippi, Alabama, and Florida (Stallings 1989:38). Although there is some debate regarding the origin of the formation, most scholars agree that the majority of the gravels were deposited by the high-energy braided streams that eventually merged to form the Mississippi River. In the Mississippi Valley Loess Plains, this gravel belt underlies Pleistocene age loess deposits and contains chert, quartz and quartzite suitable for manufacturing flaked stone tools (Cupples and Van Arsdale 2014:6).

Additional knappable material was available near the region from the Fort Payne chert and St. Louis Limestone formations. Outcrops of the Fort Payne formation in Tennessee are located in the Sequatchie Valley and throughout the Highland Rim. The outcrop nearest to the project area lies along the Tennessee River, 75 km to the east. The properties of Fort Payne chert vary regionally, and in proximity to the project area, the material ranges in color between brown, black, and gray (Walling et al. 2000). St. Louis chert occurs in fossiliferous, semibanded, and cannonball varieties and is characterized by a dark blue gray color (Amick 1987:45; Sweat 2009:44-45). The nearest outcrops of St. Louis chert occur approximately 100 km east of the project area in the Western Highland Rim.

Table 2.1 details the texture and phase, drainage capability, formation process, typical landform, and general slope range of the 15 soils mapped within the archaeological survey area (Natural Resources Conservation Service 2020). Most of the soil (77 percent) mapped in the survey area formed in the loess deposits that characterize the surrounding region, and most of these loess-based soils (53 percent, 41 percent of soil overall) are constituents of the Memphis (Meb and MeB2) soil

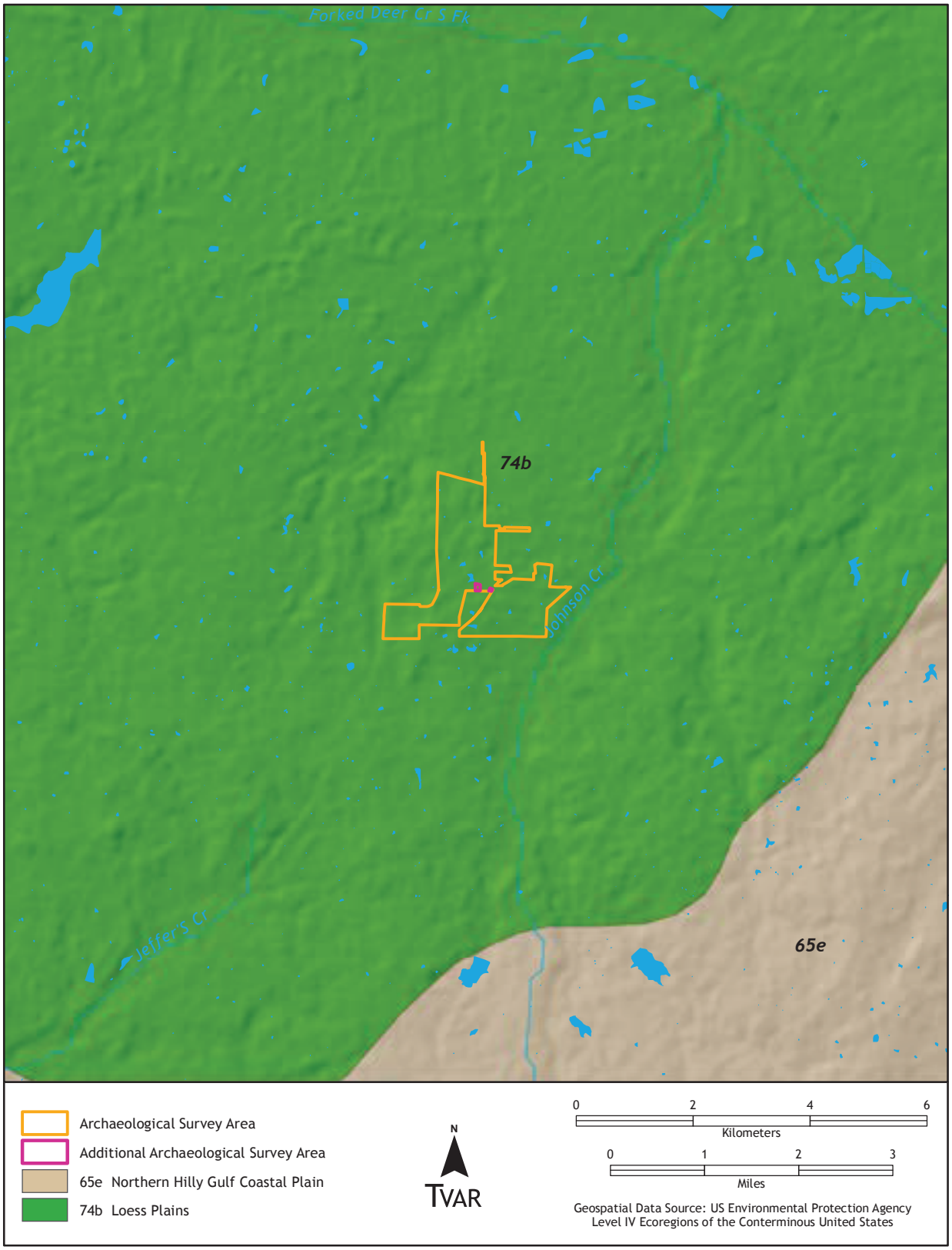

Figure 2.1. Location of the survey area within the Loess Plains Level IV ecoregion.

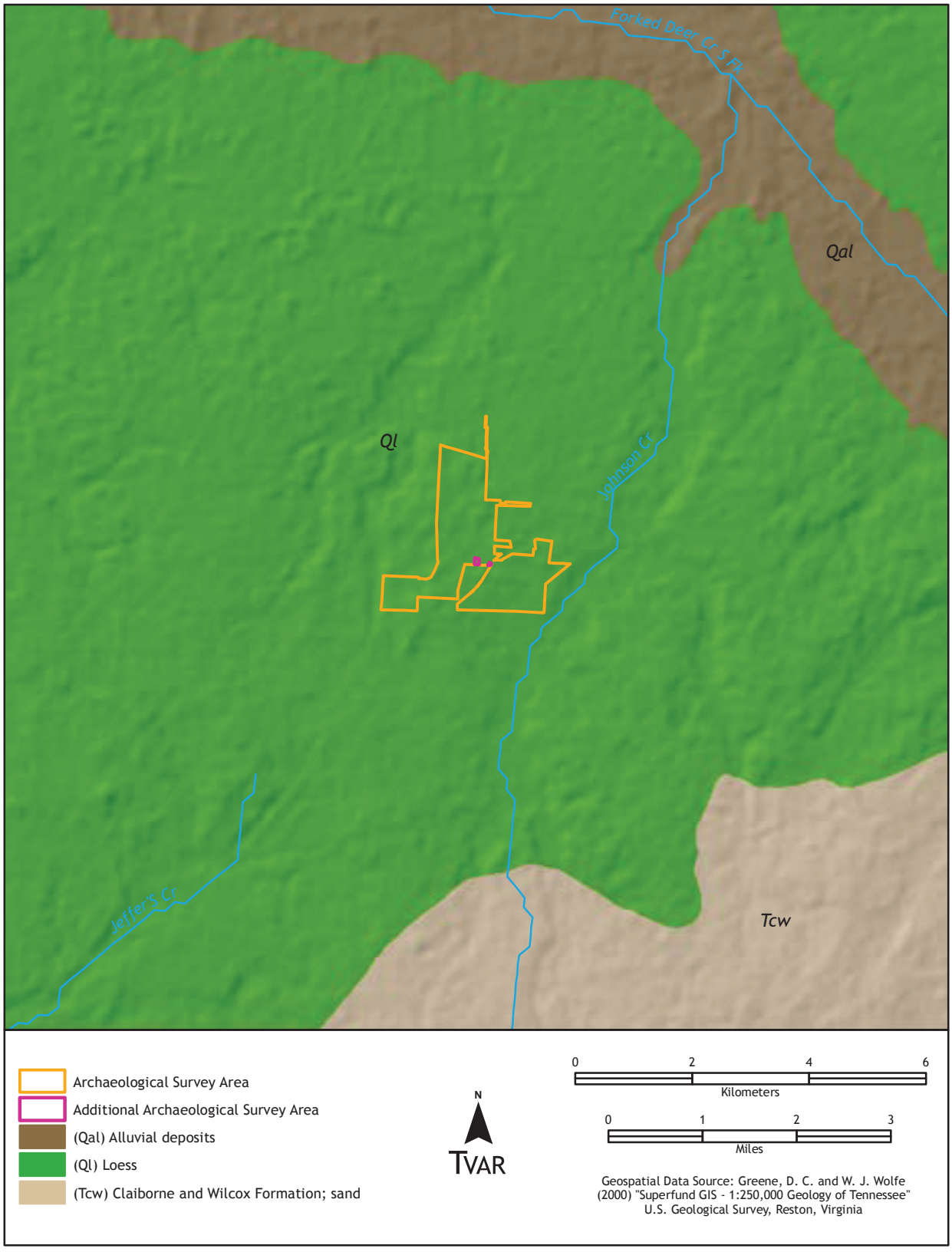

Figure 2.2. Map of surficial geology underlying the project area.

Table 2.1. Soils Mapped within the Project Area.

Soil Series	Soil Texture and Phase	Drainage	Formation	Geomorphic Position	Slope	Percent of Survey Area
Calloway (Co)	Silt loam	Somewhat poorly drained	Formed in loess.	Loess hills	0-2%	1.86%
Collins (Cs)	Silt loam	Moderately well drained	Formed in coarse-silty alluvium derived from sedimentary rock.	Floodplains	0-2%	0.89%
Falaya (Fa)	Silt loam	Somewhat poorly drained	Formed in silty alluvium.	Floodplains	0-2%	0.09%
Grenada (GrB)	Silt loam	Moderately well drained	Formed in noncalcareous loess.	Loess hills	2-5%	8.22%
Grenada (GrB3)	Silt loam	Moderately well drained	Formed in fine-silty noncalcareous loess.	Loess hills	2-5%	0.04%
Henry (Ca)	Silt loam	Poorly drained	Formed in loess.	Stream terraces	0-2%	0.88%
Lexington (LeC3)	Silt loam	Well drained	Formed in loess over loamy marine deposits.	Hillslopes	5-8%	10.58%
Lexington (LeD)	Silt loam	Well drained	Formed in loess over loamy marine deposits.	Hillslopes	8-12%	0.01%
Lexington (LeD3)	Silt loam	Well drained	Formed in loess over loamy marine deposits.	Hillslopes	8-12%	4.82%
Loring (LoB)	Silt loam	Moderately well drained	Formed in loess.	Loess hills	2-5%	4.65%
Loring (LoB3)	Silt loam	Moderately well drained	Formed in loess.	Loess hills	2-5%	3.31%
Memphis (MeB)	Silt loam	Well drained	Formed in loess.	Loess hills	2-5%	31.92%
Memphis (MeB2)	Silt loam	Well drained	Formed in loess.	Loess hills	2-5%	8.74%
Providence (PrC3)	Silt loam	Moderately well drained	Formed in loess over loamy marine deposits.	Hillslopes	5-8%	1.89%
Providence (PrD3)	Silt loam	Moderately well drained	Formed in loess over loamy marine deposits.	Hillslopes	8-12%	0.27%
Smithdale (LmE3)	Silt loam	Well drained	Formed in loamy marine deposits.	Hillslopes	10-30%	3.11%
Smithdale (SmE)	Sandy loam	Well drained	Formed in loamy marine deposits.	Hillslopes	10-20%	6.79%
Smithdale (SmF)	Sandy loam	Well drained	Formed in loamy marine deposits.	Hillslopes	20-30%	11.93%

Figure 2.3. Agricultural field within the survey area (view to the north).

series. The remaining soils mapped in the survey area formed in loamy marine deposits (22 percent) or alluvium deposits associated with Cub Creek (1 percent). As the survey area lies largely on the tops of the rolling hills of the loess plain, TVAR did not encounter any areas requiring deep auguring. Considering that loess is a wind blown deposit laid down during the late Pleistocene and the survey area is at the apex of the surrounding landscape, there is very little opportunity for the presence of deeply buried archaeological deposits.

At the time of TVAR's survey, the project area spanned agricultural fields planted with wheat, corn, or soy, hardwood forests, grass fields, or areas covered by secondary growth vegetation (Figures 2.3-2.8). The landscape within the survey area was characterized by rolling hills and ridge slopes, many of which were cut through by steeply sloped ravines (Figure 2.9). Many of these ravines that contained tributaries of Cub Creek, Johnson Creek, and the South Fork Forked Deer River, and ponds formed by damming these tributaries were located throughout the project area (Figures 2.10-2.12).

Figure 2.4. Corn field within the project area (view to the southwest).

Figure 2.5. Cotton field traversed by the survey area (view to the south).

Figure 2.6. Grass field within the survey area (view to the north).

Figure 2.7. Hardwood forest encompassed by the project area (view to the west).

Figure 2.8. Secondary growth vegetation and kudzu grown over a wide drainage cutting through loess hills (view to the northeast).

Figure 2.9. Loess bluff eroding down into a ravine cutting across the project area within a hardwood forest (view to the east).

Figure 2.10. Dry bed of an unnamed tributary of Cub Creek running through a ravine between two hill slopes within the project area (view to the west).

Figure 2.11. Pond within the survey area formed by damming an unnamed tributary of Johnson Creek (view to the north).

Figure 2.12. Pond within the survey area formed by damming an unnamed tributary of Cub Creek (view to the northwest).

CHAPTER 3. CULTURAL CONTEXT

Context for this study is provided in part by the following overview. Admittedly, these summary sketches are overly simplified and not meant to replace more thorough research.

Paleoindian

Although there is some debate regarding the possible presence of earlier occupations (see Goodyear 2005), archaeologists generally agree that by ca. 11,500 B.C. southeastern North America was inhabited by nomadic hunter-gatherers that manufactured distinctive lanceolate-shaped hafted bifaces. The earliest of these Paleoindian populations hunted Pleistocene megafauna species such as mammoth and giant bison, as documented at the Trull site (40PY276) in Perry County. The Trull site included mastodon remains associated with lithic tools and/or modifications such as stone tool cut marks on bones (Miller et al. 2015).

Walthall (1998) noted a dramatic increase in the use of caves and rockshelters in Late Paleoindian times. He attributed the shifting settlement pattern to increased populations and changes in mobility ranges and subsistence activities linked to broad environmental changes accompanied by extinctions of several Pleistocene faunal species hunted by earlier Paleoindian groups. Meeks and Anderson (2012) further advanced these arguments with hafted biface data indicative of a population increase during Late Paleoindian times.

Chronologically diagnostic hafted biface types provide a basis for a tripartite Paleoindian sequence dating between 11,500 and 9200 cal B.C. (Anderson et al. 1996; Sherwood et al. 2004). Early Paleoindian (ca. 11,500-10,900 cal B.C.) contexts are recognized by the presence of fluted and unfluted Clovis hafted bifaces. Fluted and unfluted lanceolate bifaces with broad blades and constricted hafts, such as Beaver Lake, Cumberland, and Quad, are considered Middle Paleoindian (10,900-10,000 cal B.C.) diagnostics. Late Paleoindian (10,000-9200 cal B.C.) assemblages are distinguished by the presence of lanceolate forms with side-notched hafts such as Dalton and Hardaway Side Notched.

The Pierce site (40CS24), which occupies a bluff overlooking the Forked Deer River in Chester County, is characterized by spatially distinct Clovis and Dalton components (Broster 1982; McMillan et al. 2008:14). The Clovis component included fluted and unfluted Clovis bifaces, as well as Clovis preforms (Anderson et al. 2010). A variety of tools comprised the site's Dalton component, including numerous Greenbrier/Dalton bifaces, some of which had been re-sharpened, triangular end scrapers, side scrapers, knives, core choppers, and hammerstones, as well as retouch, trimming, and core reduction flakes. The presence of re-sharpened tools and a variety of flake types, in combination with the results of microwear analyses, indicated to the site's investigator, John Broster, that the Pierce site had functioned as a re-tooling location for the region's Paleoindian inhabitants. Further, Broster suggested that the site had been selected by its occupants for its elevated location in proximity to a reliable water source. The Pierce site's position on the river bluff allowed its hunter-gatherer occupants to observe the surrounding area for prey, and the Forked Deer River, a permanent water source, attracted animals to the area (Broster 1982; McMillan et al. 2008:14-15).

Archaic

Archaic manifestations in the Southeast are represented by preceramic and early ceramic assemblages dating from approximately 9500 to 800 cal B.C. Based on temporally diagnostic hafted bifaces, stratigraphic contexts, and radiocarbon dates, fairly well-documented Archaic sequences have been developed throughout the region: Early Archaic (9200-6900 cal B.C.), Middle Archaic (6900-3700 cal B.C.), and Late Archaic (3700-800 cal B.C.). The settlement system of Early Archaic groups appears to represent a continuum of that employed in earlier Late Paleoindian times with occupations of caves, rockshelters, and open-air sites. Walthall (1980) suggested that population size continued to increase during this period. The Early Archaic is chronologically ordered by diagnostic hafted biface types, which include San Patrice, St. Charles Notched, Hardin Barbed, Rice Contracting Stemmed, LeCroy, St. Albans, and Kirk Corner Notched in proximity to the survey area (Anderson 1995:24; Anderson et al. 1994; Childress 1990:10; Sherwood et al. 2004). Very few distinctively Early Archaic deposits have been documented in western Tennessee, although a lower horizon excavated at site 40GB42 in Gibson County, Tennessee yielded Big Sandy and Palmer hafted bifaces (Weaver et al. 1999:18; Smith 1979:20-21). In addition, a midden deposit overlying a Dalton component was encountered during excavations at site 40FY13 in Fayette County, Tennessee (Smith 1996:101).

The Middle Archaic period coincides closely with the Hypsithermal climate interval during the Middle Holocene. As McNutt (2008:54-56) indicated, Hypsithermal climate conditions varied significantly across the landscapes of the Southeast, and Sassaman (2001) argued that there were marked sociocultural differences, as well. Along the South Atlantic Slopes settlements were concentrated in upland environments, while west of the Appalachians riverine settings were important to Middle Archaic populations (Dye 1996; Sassaman 2001). Bense (1994:78) pointed out that human burials are sparsely represented in the archaeological record prior to the Middle Archaic. However, numerous Middle Archaic burials have been documented (DeJarnette et al. 1962:80; Dowd 1989; Lewis and Lewis 1961; Walthall 1980:61-65). There is also evidence of interpersonal conflict during the Middle Archaic (Walthall 1980:64). Near the end of the period, extensive exchange networks developed in the region (Jefferies 1996; Johnson and Brookes 1989), and construction possibly began on some of the earliest mounds in the Southeast (Russo 1996; Saunders 1994).

A Middle Archaic hafted biface chronology has been established for a broad region across the Southeast. The earliest Middle Archaic manifestations are marked by the presence of Kirk Stemmed, Kirk Serrated, and Stanley Stemmed bifaces between 6900 and 6300 cal B.C. Later in the sequence, from approximately 6300 to 5400 cal B.C., Eva and Morrow Mountain hafted bifaces were constituents of Middle Archaic lithic toolkits. Middle Archaic assemblages dating to 5400-4300 cal B.C. are marked by the presence of Sykes/White Springs and Guilford hafted bifaces.

Benton bifaces are diagnostic of terminal Middle Archaic (4500-3700 cal B.C.) occupations in the regions surrounding the current survey area, although some scholars place this horizon in the early Late Archaic (Anderson 1995:26; McNutt 1996:162-163; 2008; Meeks 1999; Smith 1991:49, 1996:102-103; Weaver et al. 1999:20). In the Western Valley, Benton components are often associated with the Late Archaic period (Kerr 1996:258). The “Benton Phenomenon” is related to a shift toward increased sedentism and the exchange of materials, most significantly Fort Payne chert,

between groups (McNutt 2008:45; Meeks 1999:29-30). As defined by Meeks (1999:31), the "Benton Interaction Sphere" is characterized by biface caches and the preferential use of Fort Payne chert in the manufacture of Benton hafted bifaces. The Eva site (40BN12) in Benton County has significantly contributed to studies of the Middle Archaic period through the recovery of Eva cluster bifaces; ground stone tools, including atlatl weights, gorgets, pipes, mortars, and nutting stones; and bone and antler tools, including awls, needles, fish hooks, beads, scrapers, shaft wrenches, atlatl hooks, and projectile points. Middle Archaic burial practices were also exemplified at Eva; the site contained 180 human burials, the vast majority of which were found in fully flexed positions. A thick midden layer at the site yielded information regarding subsistence. The earliest occupations of the site demonstrated a reliance on deer, while later inhabitants consumed more shellfish, fish, and birds (Kerr 1996:18-19).

The Late Archaic is marked by several technological developments. Perhaps foremost of these was the domestication of several plant species in eastern North America around 5000-3800 B.P. (Smith 2011; Smith and Yarnell 2009). These domesticates are sometimes referred to collectively as the Eastern Agricultural Complex, which consisted of squash, sunflower, marshelder, and chenopod. Other plants such as erect knotweed, little barley, and maygrass do not appear to have been domesticated but were in all probability deliberately planted. In addition, fiber-tempered pottery and steatite vessels first appeared in the Coastal Plain of the Southeast during the Late Archaic (Sassaman 1993; Walthall and Jenkins 1976). Jenkins and Krause (1986:36-37) suggested that soapstone vessels are horizon markers for terminal Late Archaic assemblages. Truncer's (2004:507) study of steatite vessel chronology concluded that steatite vessels were produced for almost 2000 years before they peaked "clearly and strongly around 1500 cal B.C., a peak that accounts for the general success of the horizon-marker use." Sassaman (2006:151) disputed Truncer's chronology and alternatively argued that there is insufficient evidence for presuming that steatite vessels predate 3700 radiocarbon years B.P.

By Late Archaic times, the regionalized hafted biface sequences that characterized the Early and Middle Archaic periods were replaced by more localized temporal trajectories of mostly stemmed bifaces. For instance, Savannah River Stemmed was widely distributed along the South Atlantic Slopes, while early in the sequence, Ledbetter and Pickwick were disbursed in an area extending from the southwestern slopes of the Appalachians into the Coastal Plain of Tennessee, Mississippi, and Alabama. Near the end of the Late Archaic, a multitude of other stemmed types were manufactured, including Cotaco Creek, Flint Creek, Little Bear Creek, McIntire, Motley, and Wade. As mentioned earlier, a number of researchers classify the presence of Benton site components in the Upper Yazoo Basin and northern Mississippi as indications of Late Archaic occupation. This assertion is based on accompanying evidence for increased activity in those areas, especially harvest-collecting and seasonally influenced migration (McNutt 1996:162-163; Smith 1996:102; Weaver et al. 1999:20). Benton components attributed to Late Archaic occupations were identified at sites 40FY13 in the Loosahatchie drainage and at 40GB42 in the Obion drainage, both of which were characterized by features that produced charred hickory nut hulls (Smith 1991:48). Excavations at 40FY13 revealed evidence of ovular and rectilinear pole-framed structures, while the investigations at 40GB42 provided insights into Late Archaic burial customs in western Tennessee. Most of the interments excavated at the site were of individuals buried in a flexed position (Smith 1991:48). According to Smith (1991), both of these sites were occupied or used into the terminal

Late Archaic period, as evidenced by the recovery of baked clay objects typical of those associated with the Poverty Point culture.

During the ending centuries of the Late Archaic, the well-known Poverty Point earthworks were constructed (Kidder 2002; Gibson 2000, 2007, 2010; Ortmann 2010). The Poverty Point site in northeastern Louisiana has yielded large inventories of artifacts made of exotic stones such as soapstone, greenstone, galena, copper, hematite, magnetite, crystal quartz, novaculite, fluorite, obsidian, Fort Payne chert, Dover chert, and Pickwick chert (Gibson 2000:172-173). These nonlocal materials constitute good evidence for panregional exchange. The site has been widely recognized as a material manifestation of a conspicuous development in sociopolitical complexity, although the composition and inner workings of the Late Archaic society is a subject of supposition and debate (e.g., Gibson 2007; Sassaman 2005). Hafted bifaces characteristic of Poverty Point assemblages include Pontchartrain, Lambert, and Delhi; Pontchartrain bifaces have been found no further north than the Forked Deer drainage (Smith 1991:49). Although the concept is countered by Mainfort (1997:73), Smith divides terminal Late Archaic occupations in western Tennessee into nine localized expressions (i.e., Nonconnah, Lambert, Cane Creek, Muddy Creek, Holly Grove, Harris Island, Stokes, Kenton, and Reelfoot) defined by location and frequencies of particular artifacts, especially baked clay objects and diagnostic hafted bifaces (Smith 1991:49, 1998:31-34).

Site 40FY13, discussed above, is included in Smith's Lambert area, which is defined by the highest frequency of spherical plain baked clay objects and the lowest frequency of biconical plain baked clay objects in western Tennessee (Smith 1991:51-54). The current survey area lies between Smith's Holly Grove and Harris Island territories. The Holly Grove area is defined by a particular distribution of baked clay object shapes, in combination with a lowered frequency of Lambert hafted bifaces, which comprise the majority of hafted biface assemblages of other terminal Late Archaic areas defined by Smith (1991:54, 1998:32). The Harris Island territory is distinct from the other areas in that it is the only one from which fabric impressed baked clay objects have been recovered (Smith 1991:54, 1998:32-33). According to Smith (1991:54), a possible Harris Island component was present at Mound 12 at the Pinson Mound site, mixed with Woodland period artifacts. Robert Mainfort, Pinson's primary investigator, counters Smith's interpretation in an article in the *Tennessee Anthropologist*, however, asserting that the fabric-marked baked clay objects recovered at the mound were associated with the site's minor Tchula period occupation (Mainfort 1997:87).

Woodland

The Early Woodland period is signified through the widespread use of ceramics. The Tchula series are most commonly recovered from Early Woodland components in the Central Mississippi Valley. Tchula components are generally characterized by small stemmed hafted bifaces and Tchefuncte Plain, Cormorant Cord Impressed, Twin Lakes Punctated, Withers Fabric Impressed, and Mulberry Creek Cord Marked pottery (Anderson 1995:72-73; Childress 1990:11-12; Weaver et al. 1999:21). A significant Tchula occupation was identified in southwestern Tennessee at the Fulmer site (40SY527), a single-component open habitation site. Excavations at Fulmer resulted in the identification of two sheet middens and a feature likely representative of a central hearth (Saatkamp

and Buchner 2008:16-17; Weaver et al. 1999:180-181). The large ceramic assemblage recovered during investigations at the site; which included Baytown Plain *vars. Forked Deer, Madison,* and *Tishomigo*; Withers Fabric Marked *vars. Withers, Cypress Creek,* and *Craig's Landing*; Cormorant Cord Impressed *var. unspecified*; and Twin Lakes Punctated *var. unspecified* specimens; suggests an occupation between 400 and 100 B.C. (Weaver et al. 1999:106-107, 181).

Middle Woodland ceramics in the Central Mississippi Valley in western Tennessee are represented by the Miller variant, including Miller I (100 B.C. to A.D. 300), Miller II (A.D. 300 to A.D. 600), and Miller III (A.D. 600 to A.D. 1050) (Bense 1994:153). Miller I assemblages are comprised of Saltillo Fabric Marked and Baldwin Plain pottery; Furrs Cord Marked appears later in the Miller I phase (Jenkins and Krause 1986:55). Miller II assemblages are typified by a decreased proportion of Saltillo Fabric Marked varieties and an emphasized presence of Baldwin Plain and Furrs Cord Marked ceramics, while Miller III assemblages are made up of Baldwin Plain *var. Blubber* and Baytown Plain *var. Roper* pottery. Later in the phase, Mulberry Creek Cord Marked *var. Aliceville* ceramics begin to constitute the majority of Miller III assemblages (Jenkins and Krause 1986:65-66, 73-75).

The Woodland stage is perhaps best known for the Adena and Hopewell earthworks and mortuary practices in the Ohio Valley and widespread exchange networks in which exotic artifacts and raw materials were distributed across much of eastern North America during the Early and Middle periods of the stage. While less numerous and spectacular than those of the Ohio Valley, Middle Woodland platform mounds and linear earthen embankments (Keith 2010; Knight 2001; Mainfort 1989), piled-stone structures (i.e., mounds, effigies, and linear "wall-like" structures) (Faulkner 1996; Holstein et al. 1995; Jefferies and Fish 1978; Keith 2010), and burial mounds (Cole 1981; Jefferies 1976; Jenkins and Krause 1986; Walthall 1980; Waring 1945; Wimberly and Tourtelot 1941) are fairly widespread across various landscapes in the Southeast. Mound burials were sometimes accompanied by nonlocal materials such as marine shell, copper, galena, and mica, signifying their participation in the Hopewellian Interaction Sphere.

The Pinson Mounds site (40MD1) is located less than 25 km southeast of the current project area. The complex represents a regional ceremonial center that consisted of at least 12 mounds, three of which were constructed for mortuary purposes, and a geometric enclosure (Anderson and Mainfort 2002:12-13; Mainfort 1986:82-83; Rolingson and Mainfort 2002:27). Evidence for bent-pole structures at the site is indicative of short-term occupation and specialized activities, rather than longer term, domestic use (Anderson and Mainfort 2002:13). Ceramics recovered during excavations at the site largely included sand-tempered Miller phase pottery, including Baldwin Plain and Furrs Cord Marked types. Significantly, numerous examples of non-local ceramics (e.g., Marksville Incised, Marksville Stamped, and Swift Creek types) were found throughout the site, and excavations of burials resulted in the recovery of copper, mica, shell neckalces, bear vertebrae, reed matting, headdresses, and rattles made from human bone were also collected, indicating participation in Hopewellian trade interactions (Mainfort 1986:35, 1989:137; Smith 1996:108; Yerka et al. 2015). Recent geophysical investigations at the Johnston site, a mound grouping less than two miles away from the Pinson Mound complex, resulted in the identification of numerous pit features containing food remains, including hickory nutshell, acorns, and wild chenopodium. Radiocarbon dates obtained from samples taken from some features at the Johnston indicate that the site was inhabited as early as the Middle

Archaic period. A number of other pit features contained pottery diagnostic of the Middle Woodland period (Sherwood et al. 2015). During the Late Woodland, there was an obvious reduction in both earthworks and distributions of exotic materials in some areas of the Southeast, including the current project area, though this pattern does not hold throughout the region (Anderson and Mainfort 2002:15-19).

Mississippian

Many, if not most, current researchers concur that populations associated with Mississippian stage manifestations throughout southeastern North America were set aside from earlier ones by the development of institutionalized social inequality (Smith 1990). Maize agriculture appears to have been an important subsistence component for most Mississippian societies (Scarry 1993). Pole-framed public and domestic structures were often rectangular (sometimes circular) and sometimes employed wattle-and-daub wall construction. A central plaza surrounded by mounds and public and domestic structures characterized some of the larger Mississippian communities (Lewis and Stout 1998). Some Mississippian sites also were fortified with palisade walls and bastions and sometimes defensive ditches or moats, as well (e.g., Knight and Steponaitis 1998; Larson 1972; Schroedl 1998). Regional settlement studies typically reflect a site hierarchy consisting of mound centers and outlying nonmound sites (e.g., Anderson 1994; Blitz and Lorenz 2006; Hally 1993; Steponaitis 1978). Specially crafted artifacts often made of extralocal materials furnish evidence of widespread interregional exchange (Brown 2004). The existence of far-reaching Mississippian alliances in the interior Southeast was documented at the time of initial European contact.

Early Mississippian sites in western Tennessee are identified through the presence of red-filmed ceramics known as Varney Red Filmed; specimens recovered in the Lower Mississippi Valley are known as Larto Red Filmed (Anderson 1995:34; Koerner et al. 2015:31). Assemblages including Larto Red Filmed, Mazique Incised, Evansville Punctated, and Coles Creek Incised pottery, but primarily consisting of Baytown Plain ceramics, are affiliated with the Ensley Phase (Koerner et al. 2015:31; Smith 1996:111). Although few representative Ensley phase sites have been recorded in proximity to the survey area, recently published data from the Shelby Forest site (40SY488) in Shelby County, Tennessee shows that a large proportion of the site's ceramic assemblage consisted of Varney Red Filmed *var. Shelby* pottery, while Baytown Plain and Mississippi Plain were the more minor constituents (McNutt 2015:138-140). Radiocarbon dates derived from charcoal deposits at the Shelby Forest site produced a median date of A.D. 1093 (McNutt 2015:139-140).

Middle Mississippian settlements increased in size. Sometimes, earthen platform mounds and burial mounds surrounded a central plaza with structures located outside of the plaza area (Braly et al. 2015). Middle Mississippian contexts in eastern Tennessee are defined as the Hiwassee Island phase, while western Tennessee contexts include the Mitchell and Boxtown phases (Braly et al. 2015). A Mitchell Phase occupation was identified at the Chucalissa site through contexts dominated by Baytown Plain pottery, with lesser Mississippi Plain and Old Town Red constituents. A circular floor attributed to a possible domestic structure was associated with the site's Mitchell phase occupation by Lumb and McNutt (1988:49), although no diagnostic pottery was found in the same context

(McNutt et al. 2012:245). Boxtown assemblages primarily consist of Mississippi Plain *vars. Ferry* and *Boxtown*. Other ceramics include Bell Plain, Parkin Punctated, Owens Punctated, Bartin Incised, and Old Town Red (Harle et al. 2015:30; Smith 1996:112).

The Denmark mound site (40MD85) consists of a mound complex associated with an Early to Middle Mississippian occupation in Madison County that lies less than 10 km from the current project area. The complex includes a platform mound, a small conical mound, and a low-lying rectangular mound (Hadley 2013:1; Mainfort 1992:204). The site, which is among the few Mississippian period resources that has undergone investigation in western Tennessee beyond the Mississippi Valley, has produced a sparse assemblage that includes plain shell-tempered pottery, a biconcave discoidal, and Madison hafted bifaces (Mainfort 1992:204). The lack of material culture recovered from the site indicated to previous researchers that the Denmark mounds were likely not constructed for habitation purposes (Hadley 2013:1; Mainfort 1992:205; Roesler 2016:1). However, recent geophysical investigations of the site have resulted in the identification of an off-mound wall trench structure encompassing two hearth features (Roseler 2016:10).

Late Mississippian occupations are found primarily in eastern Tennessee area, where they area represented by the Dallas and Mouse Creek phases. Throughout much of the central Mississippi Valley, and in western and portions of middle Tennessee, Mississippian settlements were apparently abandoned during late Mississippian times. This large area is often referred to as the "Vacant Quarter" (Cobb and Butler 2002). Factors considered for the vacant quarter focus mainly on environmental conditions associated with the onset of the Little Ice Age, especially prolonged drought. These environmental changes increased the potential for agricultural failure, fostering political conflict and warfare. This lead to the collapse of Mississippian societies in this area (Anderson 2001). This is reinforced during the Thurston phase in the Nashville Basin, during which period regional centers declined and fortified towns and villages became increasingly fortified (Moore and Smith 2001:222).

Historic Native American

Although earlier there were sporadic European contacts with Native Americans along the Gulf and Atlantic coasts and failed colonial attempts by both the Spanish and French, the Spanish expedition of Hernando de Soto (1539-1543) represents the earliest recorded European contact with native populations in the interior of southeastern North America. In the 1560s, the Tristan de Luna and Juan Pardo expeditions revisited some of the areas in the interior traversed by the earlier de Soto entrada. By almost all archaeological accounts, widespread and extensive depopulation followed in the wake of the sixteenth-century Spanish incursions into the Southeast, and there was a concomitant disintegration of Mississippian polities accompanied by migrations and coalescence of native groups throughout much of the region (Hoffman 1993; Jeter 2002; Knight 1994; Little 2008; Morse and Morse 1983:313-315; Regnier 2014; Smith 1987, 2006). Hudson and Tesser (1994) pointed out that these years have been largely neglected by historians and referred to them as the forgotten centuries. Robbie Ethridge (2009) has subsequently illuminated some of these shadowy times with her conception of the Mississippian shatter zone, i.e., a region of widespread social and political transformations of native groups, presumably related to internecine warfare and slave trade with Europeans.

In the late seventeenth and early eighteenth centuries, the British, French, and Spaniards competed for control over broad regions of the Southeast. Increasing participation in nascent European capitalist markets through deerskin and peltry trade contributed to extensive transformations of native groups during the colonial era (Braund 1993; Waselkov 1988; White 1983). During those times, the Chickasaws were concentrated in northeastern Mississippi, but their hunting grounds extended as far north as the Ohio River, across western Tennessee (Brightman and Wallace 2004:478). Although the Chickasaws are traditionally associated with the project area, the Absentee Shawnee Tribe of Indians of Oklahoma, The Cherokee Nation, The Chickasaw Nation, The Eastern Shawnee Tribe of Oklahoma, The Jena Band of Choctaw Indians, The Shawnee Tribe, and The United Keetoowah Band of Cherokee Indians in Oklahoma also have an interest in the region.

In the early eighteenth century, the traditional White and Red moieties of the Chickasaw tribe, headed by leaders of ascribed and achieved status, respectively, became further distinguished as result of contact with French and English explorers and settlers. By the mid 1730s, the White moiety was in regular contact with the French and inhabited the Small Prairie region to the south of Kings Creek, while the Red moiety was on friendlier terms with the English and occupied the Large Prairie territory on the northern side of the creek (Ethridge 2010:230; Johnson et al. 2008:3-4, 7; Lieb 2008:186-192). Small Prairie towns included Chukafalaya, Long House, and Long Town, while those in the Large Prairie included Chuckalissa, Big Town, and Old Town (Barnett 2012:95). By the 1740s, after the 1736 Battle of Ackia, the moieties had coalesced in the Large Prairie towns, where they were visited by James Adair in 1744 (Adair 2005; Cegielski 2010:78; Johnson et al. 2008:8). Significantly, the intervening period (1730s-1740s) encompasses the tribe's absorption of the Natchez following their unsuccessful 1729 revolt against the French (Cegielski 2010:78; Johnson et al. 2008:7-8; Lieb 2008). After the French left the region following the Seven Years War, the Chickasaws dispersed across the Coonewah and Kings creek drainages, reclaiming previously settled areas (Cegielski 2010:90). By the time the Chickasaws were visited by Bernard Romans in the 1770s, their towns to the north of Kings Creek included Melattaw, Chatelaw, Chukafalaya, Hikihaw, Chucalissa, Tuckahaw, and Ashuck hooma (Barnett 2012:95). In 1802, U.S. Congress authorized funds for a trading house and fort, Fort Pickering, on the bluffs over looking the Mississippi River near present-day Memphis in an effort to create Chickasaw debt to the U.S. government that could be repaid through the cession of Chickasaw land (Satz 1979:52).

Several treaties were brokered with the Chickasaws in which they ceded their claims to territory. The land encompassing the project area was ceded to the United States through the 1818 Treaty of Old Town, an attempt by the United States Government and the Chickasaw Nation to settle disputes concerning territory in western Tennessee and southwestern Kentucky (Figure 3.1). Also known as the Jackson Purchase, the ceded lands encompassed approximately 31,859.4 square km (12,301 square miles), from the western Tennessee River Valley to the Mississippi River and from the Tennessee state line north to the confluence of the Mississippi and Ohio rivers. While no known permanent Chickasaw villages are known to have existed in the ceded lands, the area was traditionally used by the Chickasaws for hunting. Article Four of the treaty allowed the Chickasaw Nation to maintain a 4 square-mile tract of land in the ceded area near the "river Sandy" as a reservation. The tract, which included a salt lick spring and good timber land, was required to be leased to United

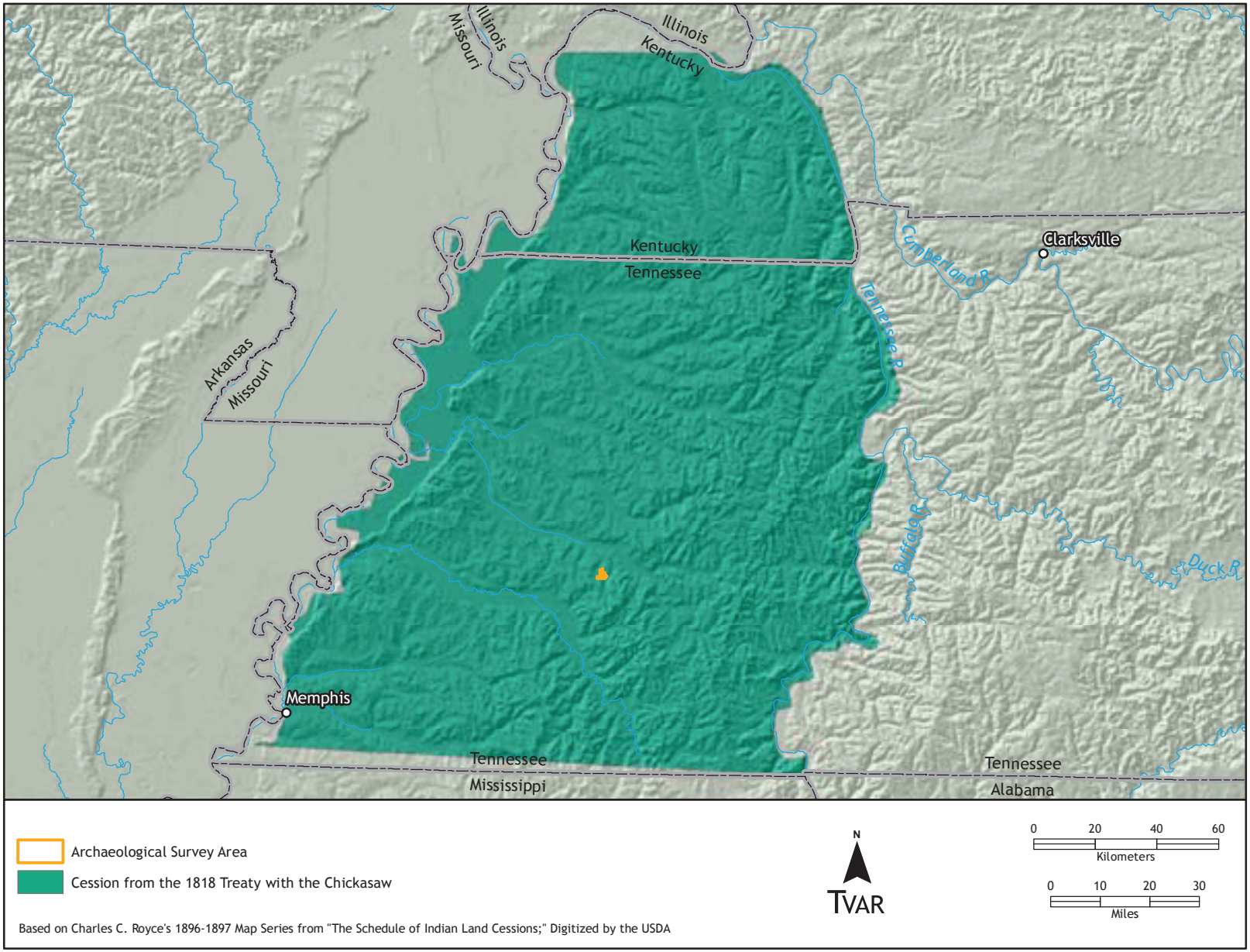

Figure 3.1. Map depicting the location of the project area within lands ceded to the United States government by the Chickasaws via the 1818 Treaty with the Chickasaws.

States citizen for a "reasonable quantity of salt." In return for the relinquished territory, the United States government agreed to pay the Chickasaw Nation $20,000 per year for 15 years. Additionally, the government agreed to pay a debt in the amount of $1,115, which General William Colbert owed to John Gordo, and a $2,000 debt owed by the Chickasaw Nation to Captain David Smith of Kentucky for his aid in marshalling 45 soldiers from Tennessee to aid in the defense of Chickasaw settlement from the Creek Nation in 1795 (Atkinson 2004:209-210; The Avalon Project 2008).

As the Chickasaws' hunting land continued to shrink, hunters were forced to exploit smaller game traditionally targeted by their children. Although the lands in western present-day Tennessee had been ceded in 1818, many Chickasaw hunters were forced back into the territory, as far north as Weakley County, in order to hunt game to barter at the bluff forts to the south (Satz 2018). In 1830, Congress passed the Indian Removal Act, which relocated the Cherokees, Choctaws, Creeks, Seminoles, and Chickasaws to the Oklahoma territory. The nearest routes utilized during Removal lie more than 30 km away from the project area.

Local History

Located in West Tennessee, Madison County borders Gibson and Carroll counties to the north, Henderson County to the east, Chester County to the southeast, Hardeman County to the south, Haywood County to the west, and Crockett County to the northwest. The Tennessee General Assembly established Madison County on December 17, 1821, and named it in honor of President James Madison. The county encompasses approximately 531 square miles. Located at the county's geographic center, the town of Alexandria served as the first county seat and remains so today though the name changed to Jackson. In 1823 and 1824, Madison County lost land to form Haywood and Fayette Counties (Baker 2018).

Following the seizure of Chickasaw lands and their removal to locations west of the Mississippi River, West Tennessee saw an influx of incoming settlers from East and Middle Tennessee, as well as the surrounding states of North Carolina, South Carolina, and Virginia (Goodspeed Publishing Company [Goodspeed] 1886:159). Settlement of Madison County began around 1819 at the community of Cotton Gin Grove, east of present-day Jackson. The first settlers in Madison County primarily came from Middle Tennessee, though most consisted of natives of Virginia and North and South Carolina (Donahue 2015). Some of the first settlers in Cotton Gin Grove included the Hargrove, Roderick, and McIver families, followed shortly after by the arrival of the Bradberry and Waddell families near a settlement at Spring Creek. In 1820, a third settlement emerged in the western portion of the county known as Forked Deer River (Madison County TN 2020).

Madison County formed on November 6, 1821. The location of the proposed county seat, Alexandria, underwent a name change to Jackson to honor President Andrew Jackson. Early county court meetings took place in the home of Adam Alexander until the construction of a log courthouse in 1822. In 1825, a two-story brick courthouse was constructed, but another replaced it in 1839 (Donahue 2015). By 1830, Madison County included 11,594 residents, with 4,167 (36%) enslaved (U.S. Census Bureau 1872:61-63). In addition, 43 "free colored" individuals resided in the county at that time. The 1850 federal census indicated 2,282 dwellings were in Madison County (DeBow 1853:576). In 1850,

Madison County contained two colleges, which employed 12 teachers and serviced 200 students. Forty-eight public schools provided education to 1,308 Madison County students (DeBow 1853).

The railroad arrived early to the area and became vital to Madison County residents. This began with the chartering of the Mobile and Ohio Railroad (M&O) in 1848, though early construction proved slow due to financial stress. As a result, Madison County residents were encouraged to levy taxes and purchase stocks. The line reached Jackson by 1857, and the first passenger train arrived there in 1858. The M&O depot was built on the east side of town past Royal Street (National Park Service 1992). During the Civil War, many miles of the newly laid lines suffered damage or destruction, which forced later repair and rebuilding of the lines following the closure of the war (Madison County TN 2020). However, no buildings or structures associated with the M&O depot remain extant. In 1853, the Mississippi Central and Tennessee Railroad was chartered between Grand Junction, Tennessee and Jackson. The line extended to Bolivar and on to Jackson by 1857, with the machine shops and depot located on Sycamore Street (National Park Service 1992).

County residents relied on agricultural activities for subsistence, specifically corn, wheat, and potatoes; as well as animal husbandry including beef and dairy cattle, horses, swine, and sheep. Other major agricultural products included tobacco, cotton, wool, and butter. In 1850, Madison County became the state's fourth-highest producer of cotton with 6,329,200 pounds harvested (DeBow 1853). Over the next ten years, more lands transitioned to farmland, and improved lands increased from 115,872 acres in 1850 to 160,401 acres in 1860. While corn, wheat, and potatoes remained primary subsistence crops, county residents increased their participation in the market economy, facilitated by easier access to rail transport (Alexander 2018). From 1850 to 1860, tobacco production in Madison County increased by 185% (DeBow 1853; Kennedy 1864). Cotton production also increased by approximately 52% from 1850 to 1860, which encouraged industrial development in the area. In addition to these cash crops, local farmers also produced butter and honey on a large scale (Kennedy 1864).

The surge of cotton and tobacco as major cash crops drove the establishment of larger plantations throughout the region, many of which depended on enslaved Africans and African-descended peoples to provide labor for the county's farmers. Although a number of white families in the county did not own slaves, slavery was part of the accepted social order and as a necessary means for both producing wealth and as a marker of social achievement. By 1860, slaves constituted 46.5% (10,012 persons) of the total population of 21,535. The number of "free colored" residents fluctuated during this time as well, from 43 in 1830, to 37 in 1840, and to 61 by 1850. A total of 83 "free colored" persons resided in the area by 1860 (U.S. Census Bureau 1872).

The onset of the Civil War brought great upheaval and loss to the region and county residents. Madison County residents suffered from economic hardships through the destruction of the Southern economy and the deaths of local men, who served in 14 volunteer Confederate regiments (FamilySearch 2018). Several small battles were fought in the county, though the Battle of Britton Lane, which took place near the community of Denmark, featured as the largest. In this event, more than 170 Confederate soldiers died when Confederate cavalry led by General Frank C. Armstrong encountered Union infantry troops. Many Union soldiers faced capture, however, and were held in the Denmark Presbyterian Church. The church, built in 1854, survived the war and still stands

today (FamilySearch 2018; Madison County TN 2020). The county also contributed two Confederate generals to the cause: Alexander W. Campbell and William H. "Red" Jackson (Madison County TN 2020). During the war, Union forces seized Jackson and demanded a ransom under threat of burning the entire city. Although the Union received the ransom, troops set fire to the city anyway, and most of the downtown area faced destruction (Alexander 2018).

Following the Civil War, large plantations dwindled and the amount of improved acreage in Madison County fell by 41.3% from 1860 to 1870 (U.S. Census Bureau 1872). Tobacco production in Madison County completely ceased, and cotton production fell by 61.7% (Kennedy 1864). With the loss of forced slave labor and the deaths of local men, subsistence crops also experienced a significant downturn: corn fell by 26.4%, wheat by 25%, and potatoes by 86% (Kennedy 1864). As with most of the rural South, Madison County had grown as an agricultural region, suffered during the Civil War and Reconstruction, and eventually attempted to reclaim its agrarian economy, particularly through the expansion of the railroad network (Alexander 2018). The M&O Railroad continued to bring development through the construction of the Iselin Yard, which provided employment to many residents who worked as machinists. The town of Jackson was also home to legendary railroad engineer Casey Jones, whose home and possessions are preserved at the Casey Jones Village (Madison County TN 2020).

The post-Civil War saw shifts in the county's railroad ownership, but the lines continued to prosper and bring development to the area. The Mississippi Central rebuilt its tracks after the war, and service to Jackson resumed in 1866. The M&O also resumed operations shortly following the war. It was the Mississippi Central line that expanded, however, in 1874 with an additional line to Cairo, Illinois. Other rail lines came to the area thereafter, with the 1880s completion of the Tennessee Midland Railroad between Jackson and Memphis, which runs through the project area. This line resulted in the downtown Jackson area as well as much of the town's residential areas becoming completely encircled in railroad lines (NRHP 1992). Eventually, many of these lines consolidated. The Mississippi Central Railroad became the Illinois Central Railroad by the 1890s. In the project area, the Tennessee Midland became the Louisville & Nashville in 1895, which in turn leased the line to the Nashville, Chattanooga, and St. Louis Railroad and became a major connection between Memphis and Nashville. Following World War II, however, this line was taken over by the Norfolk Southern Railroad. The Nashville, Chattanooga, & St. Louis Railroad merged with the Louisville & Nashville in 1957 and later the Seaboard Line took it over by 1978. At present, it operates under the CSX Railroad (NRHP 1992; Historic Aerials 2020).

In the nineteenth century, detailed landownership county mapping became the preferred method for documenting counties across the country. In Madison County, Tennessee, cartographer D. G. Beers & Company created an 1877 map (Figure 3.2). Daniel G. Beers, a protégé of famous cartographer Robert Pearsall Smith, joined the group of map makers that pushed toward the interior of the nation in the 1850s (Conzen 1984:16). D. G. Beers became a famous cartographer along with his brother Silas N. Beers and cousin Frederick W. Beers. The Beers family also created county atlases, which featured renderings of public buildings to "heighten the aura of settled prosperity" (Conzen 1984:19). These successful county atlases kept the Beers family in business for decades, and while they began their mapmaking in the northeast, they expanded to Ohio, Michigan, Kentucky, and

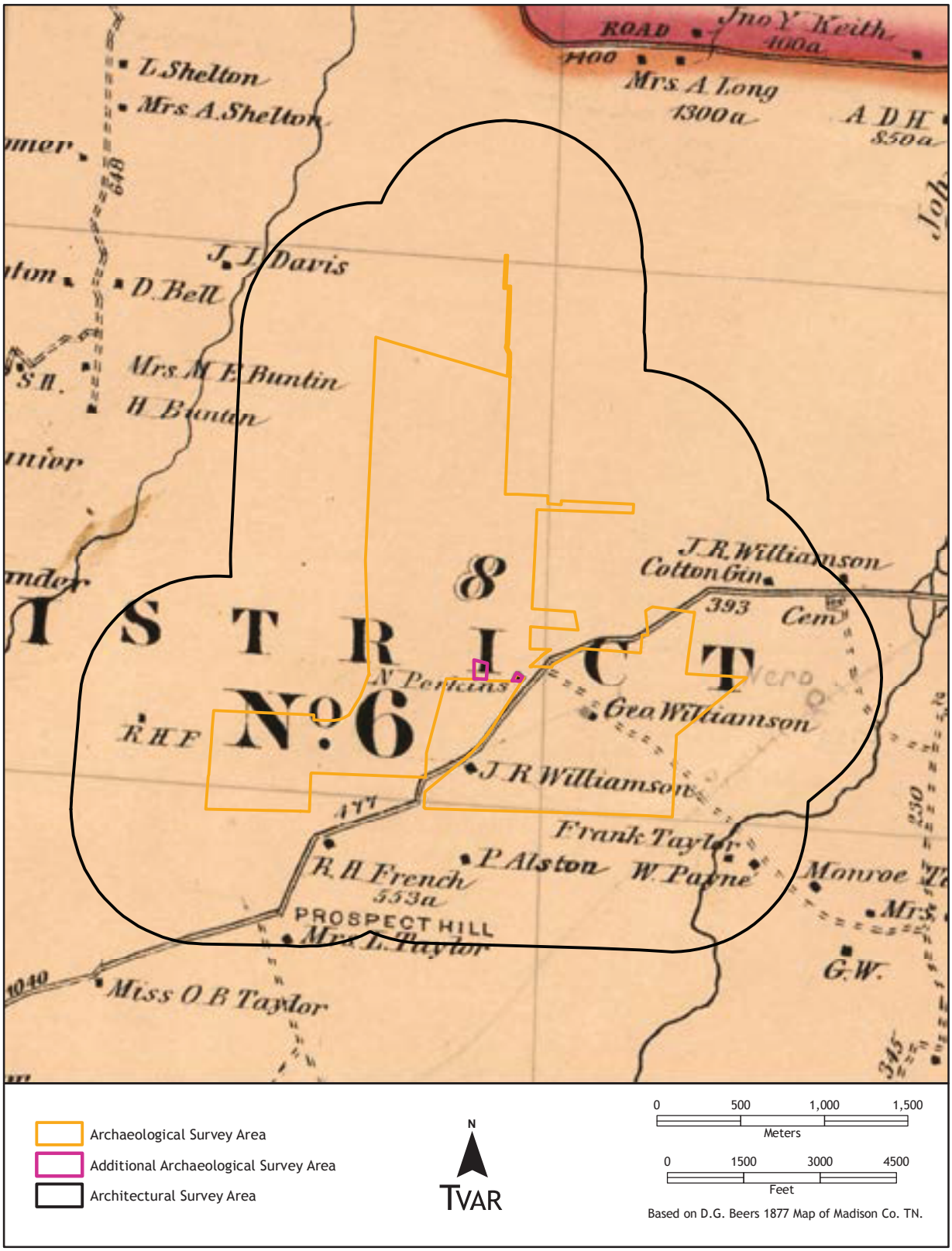

Figure 3.2. The location of the project area displayed on the D.G. Beers 1877 map of Madison County.

Tennessee by the late nineteenth century (Conzen 1984:19). The D. G. Beers Company was based out of Philadelphia like many other lucrative map and publishing companies at the time and published hundreds of maps (Conzen 1984:26). The 1877 map that D. G. Beers & Company created of Madison County, Tennessee depicts the county's boundaries but also shows landownership taken from surveys and official records (Library of Congress [LOC] 2020). This map in particular features both D. G. Beers' name along with the name of J. Lanagan, and insets feature a list of businesses as well as detailed portions of populous towns, while the overall county map demonstrates districts (LOC 2020).

Within the archaeological survey area, two parcels of land are depicted on the 1877 Beers map. These reportedly belonged to "Geo. Williamson" (40MD279) and "N. Perkins" (40MD270). George Swift Williamson was born in November 1848 and died in 1930. He and wife Amanda Elizabeth Whitlow Williamson (b. 1852, d. 1931), had two children together: John Harvey Williamson (b. 1880, d. 1949), and Ada Mae Williamson Stovall (b. 1887, d. 1986) (Find a Grave 2008). Within the survey area, George S. Williamson's land is shown on a railroad map of the community of Grover; he owned land on both sides of the Nashville, Chattanooga, and St. Louis Railroad that also extended beyond the survey area (Evelyn Keele, Tennessee Room Jackson-Madison County Public Library Archivist, personal communication 2020). The community of Grover was sometimes known as Nero as well, and in records of West Tennessee Postmasters spanning the years 1832 and 1971, George S. Williamson was listed as the Postmaster of Nero between 1880 and 1912. In 1912, the post office closed, at which point mail was routed through the post office at Neeley, located southwest of George S. Williamson's land. The names Nero and Grover seem to be used interchangeably, except for some maps that list both as separate communities (Evelyn Keele, Tennessee Room Jackson-Madison County Public Library Archivist, personal communication 2020). With the 1877 Beers map's location of a cotton gin nearby and the community's location along the Nashville, Chattanooga, and St. Louis Railroad, it is possible that Nero/Grover grew as a location for area farmers to ship and receive goods (Evelyn Keele, Tennessee Room Jackson-Madison County Public Library Archivist, personal communication 2020). Potentially also known as "Grover Station," this community did not appear in any available digitized land deed descriptions between 1822 and 1870 (Hearthstone Legacy Publications 2017; Roadside Thoughts 2020; TNGenWeb 1995). George S. Williamson owned land in and near the survey area, though he moved to Jackson later in life to operate a grocery store (Evelyn Keele, Tennessee Room Jackson-Madison County Public Library Archivist, personal communication 2020). In contrast, documentation for N. Perkins (40MD270) is sparse.

Many residents in District 6 of Madison County were farmers. Nearby to both George Williamson and N. Perkins was the property of J. R. Williamson. Per the 1880 census, he lived at dwelling number 64. Born in 1848, Williamson (age 32) lived with wife Laura (age 25), children Baker (age 4) and John (age 2), and uncle William (age 50) (Ancestry 2010). He and Laura went on to have three other children after the 1880 census: George Leon, Edgar, and Susie. J. R. Williamson died in 1889 at age 43 (Find a Grave 2009). During his life, John R. Williamson engaged in stock raising and planting and he owned valuable land, including a cotton gin as depicted on the 1877 Beers map. His son, George Leon, became a prominent doctor in nearby Jackson after studying at Union University and the University of Tennessee (Genealogy Trails 2020). J.R. Williamson's land has continued its history of agricultural tradition. As early as 1945, aerial imagery shows the presence of a farm complex along Denmark-Jackson Road which included multiple barns and outbuildings. By 1997 and 2006,

however, the cluster of buildings began to deteriorate as buildings and structures visibly disappear in aerial imagery (Historic Aerials 2020). The remnants of this complex today include the ruins of one collapsed livestock barn, which is present in aerials from 1947, and a second dilapidated barn constructed between 1960 and 1980 (Historic Aerials 2020).

Agriculturally, a sharecropping economy arose during the postbellum period, lasting from about 1870 to the 1930s. In addition, industrial and commercial development boomed in Jackson thanks to its easy railroad access. Small lines came to the area in addition to major railroads; the Jackson & Suburban St. RR Company operated 9.5 miles of track in Jackson in addition to the larger lines that connected Jackson to larger markets (Moody Manual Company 1907:1243). One of the first major companies to come to the area included the Bemis Bag Company of St. Louis. The company saw the railroad ready area as a prime location to construct a cotton mill that was close to both the raw materials needed to create their products as well as rail lines to ship their goods to New Orleans, St. Louis, and other markets (Madison County TN 2020). The company broke ground on their cotton mill in 1900 and houses for the workers also arose on the north and south sides of the facility in addition to schools, company stores, and recreation facilities. Eventually, the Bemis Company sold most of the company-owned housing by the 1960s, and the city of Jackson annexed Bemis in 1977. The mill sold in 1980 and ceased operations in 1991 (Madison County TN 2020). Other large-scale enterprises included the Jackson Fibre Company, Southern Engine and Boiler Works, and Southern Seating and Cabinet Company. Jackson was also the county's educational center, with the opening of the Jackson Male Academy, West Tennessee College, Colored Methodist High School/Lane College, and Union University (Alexander 2018).

Statewide, Tennessee enacted 20 Jim Crow laws which remained in effect from 1866 until 1955. Such laws required separate facilities and accommodations for the two races and allowed proprietors the right to refuse service or admittance to anyone of color (Black Past 2011). Due to these laws, many African American communities struggled to obtain necessary resources to provide education to their children. The Julius Rosenwald Fund established a rural school building program, which aided with this problem. In Madison County, eight African American schools were constructed in the 1920s with the aid of the Rosenwald Fund. The County Training School was a six-teacher type plan and there were also five, two-teacher type schools, and two, three-teacher type schools constructed through this fund (Fisk University 2001).

While Madison County remained largely agricultural throughout its history, the twentieth and early twenty-first centuries saw an increase in large-scale manufacturers, particularly concentrated near Jackson. Major enterprises in the county include Devilbriss Air Power, Porter Cable Corporation, Stanley/Black and Decker, and Procter and Gamble (Alexander 2018). As of 2012, a total of 592 farms remained in Madison County, encompassing 165,946 acres. The average farm size measures 280 acres. Madison County farms primarily derive their income from grains, cotton, and cattle (U.S. Department of Agriculture 2012). The county's population decreased in recent years, from 98,294 persons in 2010 to an estimated 97,605 persons in 2018 (U.S. Census Bureau 2018). Residents live in the communities of Jackson, Pinson, Beech Bluff, Madison Hall, Bemis, Fairview, Adair, Spring Creek, Malesus, Medon, Huntersville, Three-Way, and Denmark (Madison County TN 2020). At present, the Norfolk-Southern, CSX Transportation, and West Tennessee Railroad provide service to Jackson County (Alexander 2018).

CHAPTER 4. ARCHITECTURAL SURVEY

On May 12, 2020, TVAR surveyed historic architectural resources within the project APE. The following chapter provides results of the background and literature review, survey methods, the findings of the historic architectural survey, and a concluding summary of findings and effects.

Background and Literature Review

Prior to initiating field investigations, TVAR staff conducted a background search of digital files provided by the THC on May 11, 2020, and under the guidance of Peggy Nickel, Survey and GIS Coordinator. This search identified one previously recorded architectural resource (MD-IP-4/ Smithland Farm) within the APE. Survey data concerning MD-IP-4 is included within the THC information files as part of a report titled, Tennessee Department of Transportation [TDOT]Historical/ Architectural Assessment for Proposed Intersection Improvements to State Industrial Access Road (State Route 223) Serving Toyota Corporation (Barnett 2004:26). MD-IP-4, although previously surveyed, was not assigned an official state survey identifier. Therefore, at the direction of Peggy Nickell, TVAR assigned the property a new inventory number. A search of digital listings of the NRHP through the NPS database found no listed historic properties within the APE. The Madison County information files at the THC contained no information concerning historic properties within the APE listed in or awaiting listing in the NRHP. One previous survey project with report titled, Phase I Cultural Resources Survey of the TVA Morris 161-kV Transmission Line Relocations, Madison County, Tennessee, extends into the survey area but no histric architectural resources identified fall within the architectural APE (McKee and Kapyrnec 2010). A TVAR cultural resource survey project titled, *A Phase I Cultural Resources Survey of a Planned Solar Array in Jackson, Madison County, Tennessee*, lies adjacent to the northeast portion of the current architectural survey area, including the McKellar-Sipes Regional Airport (Karpynec et al. 2018).

Survey Methods

The APE for the historic architectural survey is defined as a 0.8 km (0.5 mi) radius surrounding portions of the project which may cause a change in viewshed and thus create potential visual effects to historic architectural resources and historic properties. This 0.8 km (0.5 mi) radius was applied to the proposed solar array footprint and proposed transmission line. Areas within the survey radius that were determined not to be within view of the planned construction activities due to terrain, vegetation, and/or modern built environments were not considered part of the APE. In order to document the necessary and appropriate historic architectural resources, TVAR's historic architectural survey consisted of driving accessible roads within each survey radius in order to locate architectural resources of historic age which were visible to and from the proposed solar array footprint.

To aid in determining accurate visibility, TVAR performed a viewshed analysis of the one-half mile survey radii surrounding the potential solar array footprint using the Viewshed tool in the Spatial Analyst extension in ArcGIS 10.3.1. The assessment used USGS lidar data acquired in the raw

Laser (LAS) file format and then processed into both a digital elevation model (DEM) and digital surface model (DSM). A DSM is an elevation model accounting for all returns from the lidar instrument including, but not limited to, trees and buildings, whereas a DEM singularly includes data of the bare surface of the earth. TVAR used the DSM for the survey area combined with a DEM to model deforesting prior to construction. A 30-meter interval grid was used as points of observation. Each cell (three square meters) in the elevation models served as a locus of observation with an assigned height of 1.5-meters to account for average human height and a height 2.44-meters for the solar array areas. Using these inputs, the viewshed tool analyzed each cell of the elevation models to assess its visibility from the observer point to ensure the accuracy of the viewshed model, TVAR architectural staff visited all areas throughout each survey radius to confirm visibility. Figures 4.1-4.3 provide a photographic representation of the general project area.

All historic architectural resources that met the 50-year age criterion for NRHP consideration and fell within the viewshed of the project area were plotted on the applicable USGS quadrangle map and photographed with a digital camera. The construction dates of the buildings discussed in this study were derived from historic topographical maps of the APE found online at the USGS Historical Topographical Map Explorer, aerial imagery online and through stylistic evidence displayed by each documented architectural resource. Survey information maintained throughout the course of the inventory included field notes, sketch maps, and photographs. A digital Tennessee Historical and Architectural Resource form was completed for each newly recorded historic architectural resource. TVAR identified these resources with the two-letter county code prefix assigned by the THC both within this report and in the digital survey form files. In accordance with TVA and THC guidelines, all resource inventory forms accompany this report digitally on the submitted CDs.

Figure 4.1. General view of the project area near intersection of Womack Road and Denmark Jackson Road (view to the west).

Figure 4.2. General view of the project area from Womack Road (view to the north).

Figure 4.3. General view of the project area from Womack Road (view to the south).

Survey Results

Table 4.1 summarizes the findings of the historic architectural survey and includes field survey numbers, a short description, and recommendations pertaining to NRHP eligibility and potential effects, if applicable. TVAR architectural staff undertook field investigations on May 12, 2020, and revisited on November 3, 2020. As a result, four architectural resources were recorded (MD-IP-1 through MD-IP-4). Figure 4.4 is a map illustrating the viewshed and identified historic architectural resources included within this chapter followed by the descriptions and NRHP assessments of the resources. Counted among these is the previously recorded MD-IP-4 (Smithland Farm); a ca. 1958 currently uninhabited home (MD-IP-3); a ca. 1964 currently uninhabited Neoclassical Revival house with large acreage (MD-IP-2); and a ca. 1950 house (MD-IP-1). Resources MD-IP-1 and MD-IP-2 were once part of the same large farm acreage owned by Don C. Johnson, the majority of which contains the proposed project area. MD-IP-1, however, has been separated into an individual parcel containing only the ca. 1950 house. Yet, this house was clearly associated with the surrounding remains of a dairy farm. MD-IP-2 now contains the ca. 1964 house and approximately 124 acres. MD-IP-2 stands as a representative example of the full-height entry porch subtype of the Neoclassical Revival style but exhibits compromised integrity caused by a fire, vandalism, neglect, and abandonment since 2004. With the lack of significance and/or sufficient integrity, TVAR recommends all four surveyed architectural resources as ineligible for NRHP listing. TVAR recommends no further investigations of historic architectural resources within the APE.

Table 4.1. Architectural Resources

Name	Inventory Number	Architectural Style/ Property Type	NRHP Eligibilty/ Recommendation	Effect
N/A	MD-IP-1	ca. 1950 Ranch	Not Eligible	N/A
N/A	MD-IP-2	ca. 1964 Neoclassical Revival	Not Eligible	N/A
N/A	MD-IP-3	ca. 1958 Ranch	Not Eligible	N/A
Smithland Farm	MD-IP-4	ca. 1901 Century Farm	Not Eligible	N/A

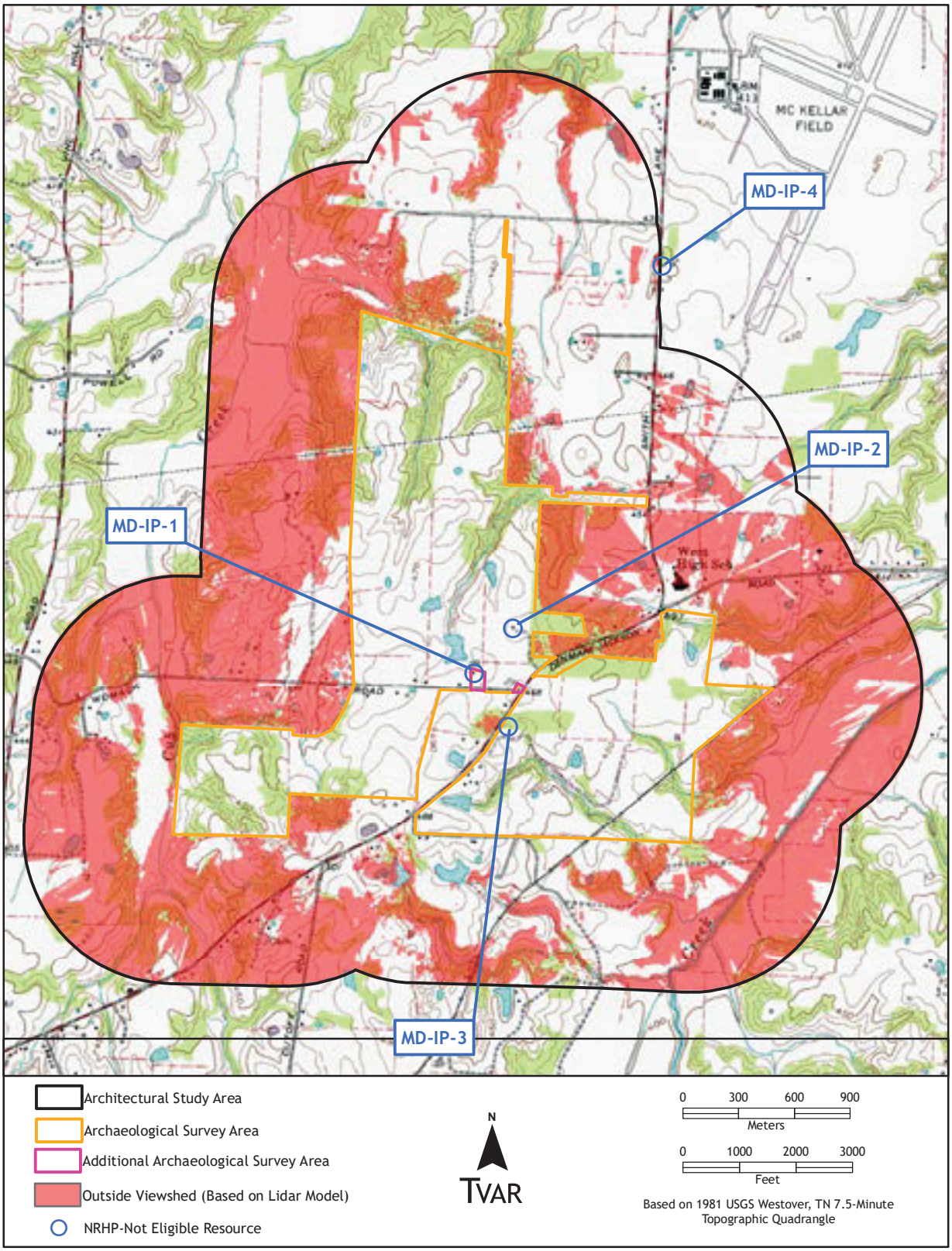

Figure 4.4. Architectural APE map including viewshed analysis and locations of recorded historic architectural resources MD-IP-1 through MD-IP-4.

MD-IP-1

MD-IP-1 was once part of the farm acreage owned by Don C. Johnson, the majority of which contains the proposed architectural survey area. According to county property assessment records, the ca. 1950 house was separated from the remaining agricultural buildings and structures into an individual parcel containing 13.02 acres and the house (TN Property Viewer 2020a). The historically associated outbuildings and agricultural barns and silos now stand within a larger parcel containing a separate house under the same ownership.

MD-IP-1 is a ca. 1950 Ranch house located at 36 Womack Road sited approximately 278 feet north of the road and adjacent to the proposed solar array boundary (Figures 4.5-4.7). The house appears on the 1956 aerial as a linear Ranch, but the aerials show that between 1997 and 2006 a front-gabled façade addition was constructed. The house rests on a continuous foundation and is clad in vinyl siding. The seven-bay, south-facing façade features, from west to east, paired six-over-six, single-hung vinyl windows flanked by fixed shutters; one entrance door with a single oval light and a storm door; and a bay window with a twenty-light picture window flanked by six-over-six, single-hung vinyl windows. The front-gabled addition features four, six-over-six, single-hung vinyl windows flanked by fixed shutters and metal panel vent in the gable peak. The façade also contains a recessed partial-width porch with a wood balustrade of turned posts. The main roof extends over the porch and is supported by turned wood posts. The west elevation lacks fenestration. A modern wood deck is attached to the north-facing, rear elevation. From west to east on this elevation there is a nine-light entrance door with a storm door; a six-over-six, single-hung vinyl window; an entrance door with a single light and storm door; and a four-over-four, single-hung vinyl window. Over the entrance is a pedimented wood frame awning that extends north past the deck and is topped with a standing seam metal roof. The east elevation features three, six-over-six, single-hung vinyl windows. The house is topped with a side-gable roof of standing seam metal.

NRHP Assessment

MD-IP-1 is an example of a mid-twentieth century Ranch house that was once part of a large farm which contained multiple houses, but was separated into an individual parcel containing only the ca. 1950 house (Historic Aerials 2020). Had the farm remained intact and the surrounding homes and agricultural buildings remained extant, MD-IP-1 likely would require NRHP assessment under Criterion A as a large farm and thus a potential district. However, with the loss of the surrounding homes, many associated buildings, and the separation of MD-IP-1 into its own parcel without its agricultural association, TVAR considered the historic architectural resource on its own.

TVAR's research into local sources revealed no association with historical events or persons; therefore, MD-IP-1 lacks significance under Criteria A and B. MD-IP-1 is a common design and displays no distinguishing stylistic features, rendering it insignificant under Criterion C. The changes to the original linear massing of MD-IP-1 with the front-gabled addition compromises the home's integrity of design. Additionally, vinyl windows now feature throughout the house, including the original block, and the exterior walls no longer possess their original cladding. These changes compromise the integrity of materials and feeling, and the home lacks distinctive workmanship. While MD-IP-2 retains its integrity of location, the loss of the surrounding homes and buildings, coupled with the separation from its nearest agricultural buildings compromise the integrity of setting and association. The combination of the home's lack of historical and architectural significance coupled with its compromised integrity lead TVAR to recommend MD-IP-1 as ineligible for NRHP listing under Criteria A, B, and C.

Figure 4.5. MD-IP-1 façade (view to the north).

Figure 4.6. MD-IP-1 north elevation (view to the south).

Figure 4.7. MD-IP-1 southwest oblique including façade and west elevation (view to the east).

MD-IP-2

MD-IP-2 was once part of the same large farm acreage as MD-IP-1 owned by Don C. Johnson, the majority of which contains the proposed project area. MD-IP-1, however, has been separated into an individual parcel containing a house and 13.02 acres. MD-IP-2 now contains the agricultural outbuildings once associated with MD-IP-2 and a ca. 1964 house within an approximate 124 acre tract (Tennessee Property Data 2020b) (Figures 4.8-4.20).

MD-IP-2 is located at 741 Denmark Jackson Road and is sited facing east approximately 750 feet north of the road within the footprint of the proposed solar array. Tax assessment records available online provide a construction date of ca. 1964, making it a late example of the Neoclassical Revival, which ended its peak of mainstream popularity a decade before MD-IP-2's construction (Tennessee Property Data 2020b). The house post-dates the oldest available aerials and topographic maps, appearing in aerial imagery in 1980 (Historic Aerials 2020). The two-story Neoclassical Revival house features a central block flanked by one-story wings. The house rests on a continuous brick foundation and the exterior is veneered with red brick in a running bond. The east-facing symmetrical façade features a two-story pedimented portico, with a rake-and-return, and dentil detailing with a small, fixed, circular divided light window. The centered, partial-width portico is supported by four full-height, fluted, Doric wood columns across the front and there are two Doric pilasters against the house. The façade also features five bays on the first and second stories. From south to north, on the first story, are two, nine-over-nine wood windows, centered entrance, and two more nine-over-nine wood windows. On the second story, from south to north, is one, nine-over-nine wood window; three, nine-over-nine wood windows under the portico; and another nine-over-nine wood window. All of the windows on the façade are flanked by fixed shutters.

The south elevation consists of an exterior brick chimney and a wing with a rake-and-return in the side-gable roof. The overgrown vegetation obscures most of this elevation, but east of the chimney on the second story is a nine-over-nine wood window without shutters and to the east of the wing on the first story is a nine-over-nine wood window with fixed shutters. The one-story wing, extending to the south, features four vinyl windows flanked by fixed shutters. On the south end of the west-facing, rear elevation there is an enclosed entrance with brick veneer in a running bond. Its west-facing gable roof features a rake-and-return. The entrance door with storm door faces west and to the left, or north, of the entrance door is a six-over-six window covered with a storm window. From south to north, past the enclosed entrance on the first story of the rear elevation, is a set of paired, nine-over-nine vinyl replacement windows, a single, six-over-six vinyl replacement window, and another set of paired, nine-over-nine vinyl replacement windows. On the second story, from south to north, are three, six-over-six wood windows with storm windows and two smaller six-over-six windows. On the north end of the rear elevation is an attached breezeway that extends to the west which connects to the two-car brick garage with a rake-and-return in the south-facing gable. The breezeway and garage extend to the north of the house, and the breezeway is attached to the wing on the north elevation. The north elevation features another exterior brick chimney. Similar to the south elevation, the north elevation features nine-over-nine wood windows, and a one-story wing with replacement vinyl windows. The house is topped with a side-gable roof of asphalt shingles.

During an interview on site, Robert Johnson detailed the events of an interior electrical fire which occurred in 2004. The extreme heat emitted from the fire caused much of the interior walls of the kitchen (north wing), rear, and central hallway to essentially melt, as well as the loss of a rear door and window. Interior damages were extensive, and restoration estimates called for total replacement of interior plaster and other materials such as doors, windows, and hand crafted wall paneling. The costs of such renovations and restorations prevented the family from pursuing the work. As a result, the house stands in a state of severe internal damage. As the family chose to not pursue renovations, many original and custom interior elements were removed and repurposed, such as custom Cherry baseboards. Moreover, Mr. Johnson spoke of the recent occurrences of vandalism to the house. The majority of windows are now broken, and interior elements such as original bathroom fixtures lie in broken shards.

The parcel contains four remaining agricultural buildings and structures located to the southwest of the house and in close proximity to MD-IP-1. One of these structures, a concrete block dairy parlor, located 295 yards southwest of the house at MD-IP-2, appears on the 1956 aerial. The eight-bay, south-facing façade, from west to east, contains two metal, two-over-two single windows, a single entrance with a plywood and clapboard surround, a double entrance, and four, two-over-two metal windows. Both entrances are missing their doors. Over the entrances is a wood frame awning with a slightly pitched, asphalt shingle roof. The awning is supported by plain, square wood posts. The poured concrete porch rests on concrete blocks. The west elevation is mostly obscured by vegetation and a non-historic metal building, but one of the metal two-over-two windows is visible. The same metal windows on the façade are found on the rear, north-facing elevation. On the east elevation is a double opening with the remnants of a sliding barn door on a sliding track above the opening. In the gable is one of the two-over-two metal windows found on the other elevations of the barn. The dairy parlor is topped with a side-gable roof covered in asphalt shingles.

The aerials show that between 1997 and 2007 the west portion of the barn was removed, and a detached metal shed was constructed. The shed is on a raised concrete block foundation with a gable roof of standing seam metal. Adjacent to the northeast of the dairy parlor is a concrete stave silo that is visible on the 1956 aerial. The silo is missing its roof but the chute is intact. A metal roofed and clad silo is also present, 16 yards northeast of the concrete stave silo, but does not appear on the aerials until 1997. A pile of rubble approximately 60 ft west of the dairy parlor are the remains of an outbuilding present in 2017 Google Earth imagery.

NRHP Assessment

MD-IP-2 is a representative example of a mid-twentieth century Neoclassical Revival house within a large parcel containing multiple agricultural outbuildings and structures. Had the farm remained intact and the surrounding homes and agricultural buildings remained extant, MD-IP-2 likely would require NRHP assessment under Criterion A as a large farm and thus a potential district. However, with the separation of the agricultural buildings from MD-IP-1 to the southwest, the resulting acreage at MD-IP-2 lacks the cohesion necessary to evaluate the property as a large farm and the proximity and continuity of outbuildings to represent a farmstead. Therefore, TVAR evaluated the

house and disassociated outbuildings as individual resources. The metal shed and metal silo do not meet the 50-year age criterion and were not evaluated for NRHP eligibility. The dairy parlor and concrete stave silo both meet the 50-year age criterion, but are no longer associated with the original house which, if intact, could have constituted a farmstead. Individually, these buildings lack association with historical events or persons, and therefore lack significance under Criteria A and B. Moreover, these resources are associated with MD-IP-1, which is recommended ineligible for NRHP listing under all three applicable Criteria. Built of common design, the milk parlor and silo lack architectural significance under Criterion C.

The dairy parlor and concrete stave silo maintain their integrity of location as they have not been moved. Their integrity of setting is diminished by the loss of two of the original agricultural structures. The integrity of design, materials, workmanship, feeling, and association of the dairy parlor is diminished by the removal of the west portion and replacement with a non-historic structure. The concrete stave silo appears to maintain its integrity of design, materials, workmanship, feeling, and association. Given the lack of sufficient significance and integrity, TVAR recommends all three agricultural resources as ineligible for NRHP listing under Criteria A, B, and C.

TVAR's research into local sources identified no association between MD-IP-2 and historical events or persons. Therefore, the property lacks significance under Criteria and A and B. Although the house is overgrown with vegetation, some characteristic architectural details remained apparent during the field survey, and MD-IP-2 exhibits some stylistic details which represent the full-height entry porch subtype, as well as other characteristic details. Noteworthy of these details are the rake-and-return in the gables, the two-story portico with fully intact Doric columns (a separation from the typical Corinthian or Ionic columns), the symmetrical façade with centered classically-inspired entryway, and balanced nine-over-nine wood windows. Additionally, the side-gable roof with brick, exterior end chimneys and side wings is also typical of the Neoclassical Revival style. MD-IP-2 stands as a representative example of the full-height entry porch subtype of the Neoclassical Revival style, the only such example within the observed area. The Neoclassical Revival style was widely popular in America throughout the first half of the twentieth century, and many of MD-IP-2's exterior elements are common to this type. The interior spaces of the home featured a wide variety of hand-crafted elements, such as custom made wood baseboards, cabinets, and bookcases.

The Neoclassical Revival house maintains its integrity of location, as it has not been moved. The integrity of setting is diminished by the separation from MD-IP-1 and the loss of multiple homes and outbuildings formerly within the parcel. Aerial imagery from 1980 indicates that MD-IP-2 retains its original plan and massing, therefore retaining the integrity of design. Although much of the exterior materials remain, the loss of, or replacement of, windows and doors diminishes the integrity of materials. Many custom made wood features within the house which survived the 2004 fire were removed from the home and repurposed on other projects on other family properties. These losses further diminish the integrity of materials. Moreover, what remains of the interior craftsmanship now exists with irreversible smoke and heat damage, thus diminishing the integrity of workmanship. The current overgrowth of vegetation diminishes the integrity of feeling, which is further compromised by the damage to the interior. MD-IP-2 has been uninhabited for over 15 years, leading to the serious overgrowth of vegetation and ocurrances of vandalism which have further compromised the integrity

of feeling and the home's overall ability to convey its significant stylistic features. The current parcel configuration and loss of former agricultural building diminishes the integrity of association; yet, the house continues to convey a sense of association with farming as the surrounding cropland remains in use.

As MD-IP-2 lacks significance related to historical events, trends, or associated persons of historical importance, TVAR recommends the house as ineligible for NRHP listing under Criteria A and B. MD-IP-2 exhibits multiple aspects of stylistic detailing that make it a representative example of the full-height entry porch subtype of the Neoclassical Revival style. However, the home's state of damage, neglect, and abandonment have compromised its overall integrity. While MD-IP-2 retains its original massing and design, key elements of material, feeling, workmanship, setting, and association integrity are now diminished or fully compromised. TVAR therefore recommends MD-IP-2 as ineligible for NRHP listing under Criteria C, as the house has lost, and continues to rapidly lose, sufficient integrity by which to convey its significance.

Figure 4.8. MD-IP-2 façade and overgrown landscape (view to the west).

Figure 4.9. MD-IP-2 façade (view to the west).

Figure 4.10. MD-IP-2 southeast oblique including façade south elevation (view to the north).

Figure 4.11. MD-IP-2 attached breezeway and garage (view to the north).

Figure 4.12. MD-IP-2 west elevation with carport and breezeway in the foreground (view to the east).

Figure 4.13. Example of MD-IP-2 interior fire damage within the north wing kitchen (view to the northeast).

Figure 4.14. Example of MD-IP-2 interior fire damage within the central block dining room (view to the southeast).

Figure 4.15. Example of MD-IP-2 interior fire damage within the central hallway (view to the west).

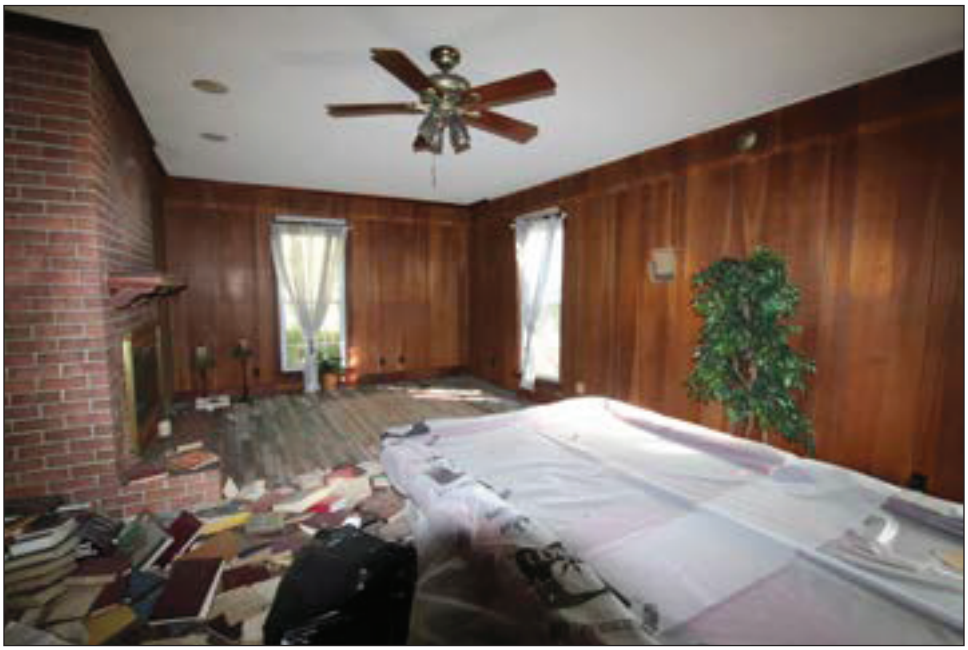

Figure 4.16. MD-IP-2 south wing. Note the removal of custom wall trim and some baseboards (view to the southeast)..

Figure 4.17. Example of smoke damage and vandalism at MD-IP-2 upstairs bathroom (view to the west).

Figure 4.18. MD-IP-2 modern shed (view to the north).

Figure 4.19. MD-IP-2 dairy parlor and concrete stave silo (view to the north).

Figure 4.20. MD-IP-2 modern metal silo (view to the north).

MD-IP-3

MD-IP-3 is located on the east side of Denmark Jackson Road approximately 635 feet (0.12 miles) south of Womack Road within the footprint of the proposed solar array (Figures 4.21-4.24). The house is a compact Ranch type constructed ca. 1958 (TN Property Data 2020c). MD-IP-3 first appears in aerial imagery in 1980 (Historic Aerials 2020). MD-IP-3 rests on a continuous concrete block foundation and the exterior features textured Roman brick on the façade and concrete block on the rear, east-facing elevation. The four-bay, west-facing façade features, from north to south, two, nine-light metal casement windows with a fixed center; a paneled entrance door covered by a storm door; and another metal nine-light casement window. All the windows are flanked by fixed shutters. The north elevation contains another nine-light metal casement window and wood clapboard in the gable field. The east-facing (rear) elevation, from north to south, consists of one, six-light metal casement window; one small, one-over-one metal window; a paneled entrance door covered by a storm door; another six-light metal casement window; and a boarded window casing. There is a concrete pad porch that extends south past the house. Over the rear entrance door is a slightly-pitched wood frame awning covered with corrugated metal. The square wood posts that support the awning extend past the porch and are anchored into the ground with concrete. The south elevation consists of an exterior chimney of Roman brick with a metal chimney cap. There is one boarded window on this elevation. Wood clapboard is found in the gable field on this elevation. The house is topped with a side gable roof of asphalt shingles. No outbuildings or other associated structures were observed.

NRHP Assessment

MD-IP-3 is an example of a mid-century compact Ranch house. TVAR's research revealed no association between MD-IP-3 and historical events or persons rendering the home insignificance under Criteria A and B. The compact Ranch form is a common type and exhibits no distinctive design or stylistic qualities. The ubiquitous nature of its type leads TVAR to find MD-IP-3 lacking significance under Criterion C.

MD-IP-3 retains its integrity of location and setting, as the house remains in its original location upon a 53-acre parcel. MD-IP-3's integrity of design is slightly diminished by the presence of the added rear awning. The integrity of materials is diminished slightly by the loss of an original window now replaced by boards. MD-IP-3 retains its integrity of workmanship, primarily evident in the Roman brick on the façade and chimney. With its retention of original design and overall materials, MD-IP-3 continues to convey as a compact Ranch, thus maintaining the integrity of feeling. MD-IP-3 lacks association to persons, trends, and events resulting in the inability to evaluate this aspect of integrity. Although MD-IP-3 retains most aspects of integrity, the house fails to exhibit sufficient significance. TVAR therefore recommends MD-IP-3 as ineligible for NRHP listing under Criteria A, B, and C.

Figure 4.21. MD-IP-3 façade (view to the east).

Figure 4.22. MD-IP-3 southwest oblique including the façade and south elevation (view to the north).

Figure 4.23. MD-IP-3 east elevation (view to the west).

Figure 4.24. MD-IP-3 southeast oblique (view to the north).

MD-IP-4

MD-IP-4 is a Century Farm located at 422 Smith Lane, 0.50 miles east of the proposed solar array boundary (Figures 4.25-4.32). A sign posted on a fence identifies the location as a Century Farm, and the TDOT report which originally surveyed the farm provided the name Smithland Farm (Barnett 2004). The Century Farms program honors and recognizes the contribution of families who have owned and farmed the same land for at least 100 years. According to the Century Farm data, the Smithland Farm was established in 1900, and tax assessment records indicate that the Smith family retains ownership of the ca. 1901 house and surrounding land (TN Century Farms 2020; TN Property Data 2020d). The farm includes the original farmhouse and an additional four buildings and one structure. The house is located approximately 80 feet from Smith Lane and is sited facing west. Most of the current structures were present by 1956 according to assessment of historic aerials and topographic maps (Historic Aerials 2020).

The main house is a one-and-one-half story central hall cottage. The foundation is obscured by boards and the exterior walls are clad in asbestos shingles. The four-bay, west-facing façade features, from north to south, two, one-over-one, wood windows with storm windows; the entrance, which is boarded over; and two, one-over-one wood windows with storm windows. The full-width front porch is covered by an extension of the main roof supported by large, stone, end posts. The same type of stone also forms a solid balustrade along the porch façade. The center of the porch roof is supported by two stone piers topped with two plain, square posts. The porch is accessed on its south end by two steps.

The north elevation of the house contains paired, three-over-one wood windows covered with storm windows. The gable field features a small, rectangular single-pane wood window. The gable on this elevation features decorative wood bargeboard. The addition on the northeast corner of the house extends past the north elevation. This addition contains a west-facing entrance door with storm door and paired north-facing, six-over-six windows with storm windows. The east-facing, rear elevation contains an addition extending the length of the house. The south elevation features paired, three-over-one wood windows and a small, rectangular, single-pane wood window in the gable field. The gable on this elevation features decorative bargeboard. Also found on this elevation is an attached single-width carport. The house is topped with a side gable roof of asphalt shingles with a single front-gable dormer in the center of the façade. This dormer contains a centered, boarded, rectangular wood-cased window; decorative wood bargeboard, and is clad in asbestos shingles. There is one, off-center interior brick chimney in the ridge of the roof.

Approximately 147 feet northeast of the house is a rectangular wood frame shed that appears on the 1956 aerial. The exterior is vertical wood boards, and the structure is topped with a side-gable roof of standing seam metal sheathing. The metal sheathing at the west and east ends of the roof are replacements. The structure is in disrepair and is not in use.

Approximately 70 feet east of the house is a wood frame rectangular structure used for tractor storage. The north end of this structure appears on the 1956 aerial and the southern portion of this structure appears on the 1997 aerial. The original north portion is wood frame with an enclosed area attached to the non-historic portion. The non-historic portion to the south is wood frame and divided into three stalls. The building has a gable roof supported by cylindrical wood posts and topped with standing seam metal sheathing.

Adjacent to the house is a wood frame building with vertical wood boards and a west-facing gable roof. The aerials show that between 1981 and 1997 a three-part shed was constructed attached to the north elevation of the building. Approximately twenty-five feet southeast of the house is a non-historic rectangular wood frame building with stalls that open into a paddock. The stalls do not appear until the 1997 aerial. Approximately 150 feet southeast of the house is a wood frame rectangular barn with vertical wood siding. On the west elevation is a single wood entrance door. The barn is topped with a gable roof of standing seam metal. Adjacent to the barn's south elevation is a concrete stave silo with intact chute and missing roof. The barn and silo appear on the 1956 aerial. TVAR attempted to make contact with residents during the survey, but received no answer at the doors.

NRHP Assessment

MD-IP-4, the Smithland Farm, is a Tennessee Century Farm established in 1900. Given the farm's status as a Century Farm, TVAR considered MD-IP-4 for its eligibility for the NRHP as a farmstead under Criterion A, as well as individual buildings. MD-IP-4 does not appear to possess significance in the area of agriculture. The historic aerials show that additional buildings were razed over time. There is no indication of the associated lands in use for crops, cattle, or horses, thus the original agricultural association has been lost through lack of utilization as a farm operation. Due to this, the landscape no longer conveys as an early-twentieth century historic farmstead, and TVAR's research did not reveal any additional associations with other historic events. Under Criterion B, the research did not find an association with a person or persons important to history. Under Criterion C, the house has undergone additions and changes not in keeping with the historic character of the house, and the other structures on the farm have undergone changes, additions, and/or material replacements which have compromised their integrity. Neither the house nor the buildings and structure exhibit notable architectural significance. Due to a lack of historic or architectural significance and integrity, MD-IP-4 is not eligible for the NRHP under Criteria A, B, or C as a farmstead.

TVAR also assessed the house and the associated buildings and structure, that meet the 50-year age criterion, individually for their eligibility for the NRHP. Research did not reveal an association with historic events or persons important to history, therefore the house and the associated structures are not individually significant under Criteria A or B. The house contains additions to the rear and northeast corner that are not original to the house. On the south elevation is a non-historic attached carport. All of the windows are covered with storm windows, the exterior is covered in asbestos siding which is not original to the house, and the central façade entrance is boarded over. The shed located northeast of the house is a common type and is no longer associated with or used for agricultural purposes. The tractor stalls east of the house include a non-historic addition that changed the design of the building and added new materials. These changes result in a house which is not of a significant type or style and collectively compromise the architectural and material integrity of the house. The house at MD-IP-4 therefore lacks significance under Criterion C. Similarly, the surrounding outbuildings are of common designs or lack architectural significance under Criterion C.

The remaining architectural resources at MD-IP-4 maintain the integrity of location, as none have been moved. MD-IP-4 does not possess integrity in the areas of setting, design, materials, workmanship, and feeling. The integrity of setting is compromised because of the presence of non-historic

commercial development. Directly across the street from the farm is a large distribution center for Kirkland's, a Ryder distribution facility, two manufacturing plants, and an aluminum plant for Toyota. East of the farm is McKellar-Sipes Regional Airport, and the runway is approximately 1,000 ft. from the east boundary of the farm. The airport was originally named McKellar Field, as is seen on historic topographic maps, but was renamed in 1989 to include the name of U.S. Air Force Major Robert Sipes, a Jackson native killed in a 1969 plane crash (Barnett 2004:10). Although aerial imagery shows the field patterns have mostly remained the same, the 1956 aerial shows a small house or other structure further south on the property which is no longer extant, a pond located east of the barn and silo is no longer present, and the horse stalls were added between 1981 and 1997 (Historic Aerials 2020).

The house and individual structures have undergone additions and material replacements. The front-gabled building adjacent to the house has a non-historic addition on its north elevation. The size of the addition completely changed the design of the structure and added new materials. The barn and silo, located southeast of the house, are a common type and do not exhibit notable architectural or artistic characteristics. The addition on the tractor stalls changed this structure from a small square structure to a long rectangular structure and added new materials. The addition of the shed with side extensions to the frame structure adjacent to the house completely changed the shape from a small square structure to an irregularly shaped structure and added new materials. The additions to the rear and northeast corner of the house, coupled with the asbestos siding, storm windows, and attached non-historic carport on the south elevation prevents the house from fully conveying as an early-twentieth century farmhouse. MD-IP-4 no longer conveys the feeling of an early-twentieth century farm because of the loss of structures and the additions and material replacements, as well as the lack of farming activities. Although MD-IP-4 retains its status as a Century Farm, the agricultural buildings appear in disuse and although some surrounding field patterns remain visible, crop rows and animal pastures are no longer apparent. This lack of use and obvious discontinuance of agricultural practices compromises MD-IP-4's association with farming and agriculture.

In its survey report, TDOT recommended the Smithland Farm (MD-IP-4) as ineligible for NRHP listing in 2004 (Barnett 2004:26). Citing the lack of significance and overall compromised integrity of both the individual architectural resources and collective farm, TVAR concurs with the previous recommendation and finds MD-IP-4 ineligible for NRHP listing under Criteria A, B, and C.

Figure 4.25. MD-IP-4 façade (view to the east).

Figure 4.26. MD-IP-4 southwest oblique (view to the east).

Figure 4.27. MD-IP-4 northwest oblique (view to the south).

Figure 4.28. MD-IP-4 barn and concrete stave silo (view to the south).

Figure 4.29. MD-IP-4 stalls and paddock (view to the east).

Figure 4.30. MD-IP-4 shed with multiple additions (view to the south).

Figure 4.31. MD-IP-4 tractor storage stalls (view to the east).

Figure 4.32. MD-IP-4 shed (view to the north).

Conclusions

Over the course of the survey, TVAR identified the previously recorded MD-IP-4 (Smithland Farm); a ca. 1958 currently uninhabited home (MD-IP-3); a ca. 1964 currently uninhabited Neoclassical Revival house with large acreage (MD-IP-2); and a ca. 1950 house (MD-IP-1). Resources MD-IP-1 and MD-IP-2 were once part of the same large farm acreage owned by Don C. Johnson, the majority of which contains the proposed project area. MD-IP-1, however, has been separated into an individual parcel containing only the ca. 1950 house. Yet, this house was clearly associated with the surrounding remains of a dairy farm. MD-IP-2 now contains the ca. 1964 house and approximately 124 acres. MD-IP-2 stands as a representative example of the full-height entry porch subtype of the Neoclassical Revival style but exhibits overall compromised integrity from damages caused by a fire and vandalism, as well as the effects of overgrown vegetation. TVAR recommends all four surveyed properties (MD-IP-1, MD-IP-2, MD-IP-3, and MD-IP-4) as ineligible for NRHP listing due to their lack of significance and/or compromised integrity. TVAR recommends no further investigations of historic architectural resources within the APE.

CHAPTER 5. ARCHAEOLOGICAL SURVEY

In the summer of 2020, TVAR conducted a Phase I cultural resources survey associated with Silicon Ranch's planned solar array project in Madison County, Tennessee. The original 379.7 ha (938.3-acre) archaeological survey area consisted of the 378.5 ha (935.3-acre) tract of land where the solar array is to be constructed, in addition to 1.38 km (0.86 mi) of new transmission line with a 30 m (100 ft) wide ROW. The investigation resulted in the identification of 71 cultural resources within the project area, including including 13 newly recorded sites (40MD267, 40MD268, 40MD269, 40MD270, 40MD271, 40MD272, 40MD273, 40MD274, 40MD275, 40MD276, 40MD277, 40MD278, and 40MD279), five non-site cultural resources (NSCR 1-5), and 53 isolated finds. In the fall of 2020, TVAR surveyed an additional two tracts of land with a combined area of 1 ha (2.47 acres), which were adjacent to the original archaeological survey area. The subsequent survey resulted in the expansion of 40MD270. This chapter provides a review of background information relevant to the project area, a discussion of the field methods employed during the survey, descriptions of the archaeological resources investigated, and assessments of their eligibility for inclusion in the NRHP.

Archaeological Background Literature and Records Search

In May of 2020, TVAR requested background literature and a records information from the TDOA in Nashville to identify documented archaeological sites and previous cultural resources surveys within the background study area, a 0.8 km (0.5 mi) radius surrounding the archaeological survey area (Figure 5.1). According to the records of the TDOA, six previously identified archaeological sites (40MD195, 40MD200, 40MD201, 40MD202, 40MD203, and 40MD258) are within the background study radius, none of which intersect the archaeological survey area (Table 5.1, see Figure 5.1). Additionally, the TDOA identified the survey areas associated with three previously conducted cultural resources investigations within the background study area (Deter-Wolf and Karpynec 2004, McKee and Karpynec 2010, and Thomas et al. 2000), two of which intersect the current project area (McKee and Karpynec 2010 and Thomas et al. 2000) (see Figure 5.1). The first of the cultural resources surveys, all of which were conducted by TRC, was the investigation of TVA's South Jackson-Madison West 161-KV Transmission Line (Thomas et al. 2000). TRC's 2000 survey resulted in the identification of five archaeological sites and four isolated finds. The second investigation was conducted in association with the TVA's McKellar 161-KV Transmission Line relocation project, and did not locate any archaeological resources (Deter-Wolf and Karpynec 2004). The final investigation was conducted by TRC in 2010, and consisted of the survey of TVA's Morris 161-KV Transmission Line, and resulted in the identification of two isolated finds (McKee and Karpynec 2010).

To supplement the information obtained from the TDOA, TVAR also reviewed numerous cartographic and ethnohistoric databases including the NRHP, University of Alabama Historic Maps Archive, and the USGS Earth Explorer data portal. Maps specifically referenced in TVAR's research included D.G. Beers' 1877 map of Madison County, Tennessee, the USDA 1906 soil survey of Madison County, the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles. The Beers map is especially important to the current project given that it provides the locations and

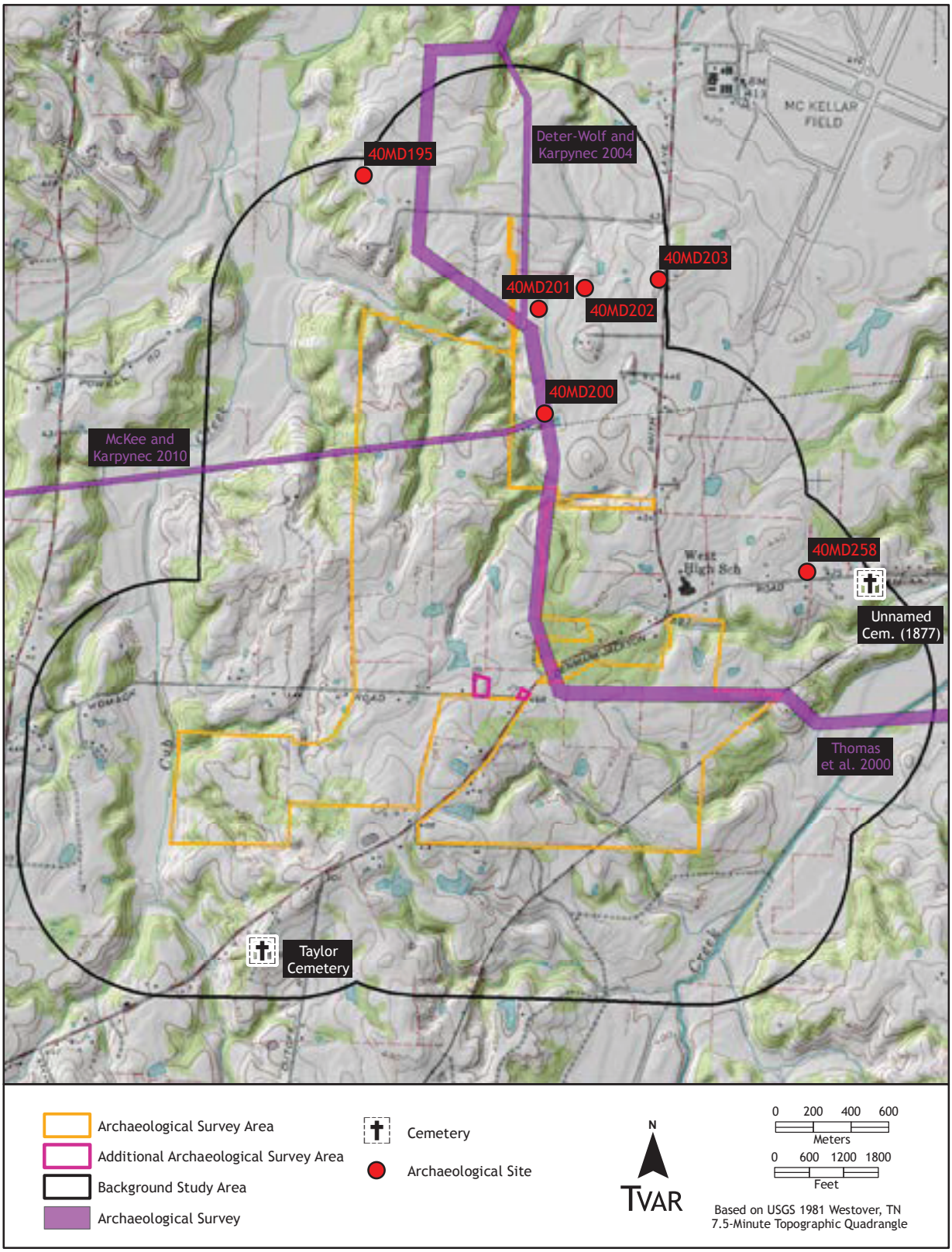

Figure 5.1. Background study area map.

Table 5.1. Archaeological Sites Recorded in the Background Study Area.

Site Number	Cultural/Temporal Affiliation	NRHP Status	Reference
40MD195	Early Woodland	Unknown	TDOA
40MD200	Late Archaic, Woodland	Unknown	TDOA
40MD201	Twentieth Century	Unknown*	TDOA
40MD202	Late Nineteenth to Early Twentieth Century	Unknown*	TDOA
40MD203	Twentieth Century	Unknown*	TDOA
40MD258	Twentienth Century Rosenwald School	Unknown	TDOA

*The records of the TDOA indicate that the site was completely destroyed in 2003.

names of land owners within the survey area in 1877. Notably, roads and railroads are displayed on the 1906 soil survey map of Madison County, but structures are not. TVAR also reviewed USGS historic aerial imagery taken in 1947. TVAR identified two cemeteries within the half-mile background sturdy area (Taylor Cemetery and an unnamed cemetery), neither of which intersects the survey area. According to NRHP records, there are 31 NRHP listed properties in Madison County, none of which lie within the background study area (NRHP 2020).

Methods of Investigation

The Phase I investigation included pedestrian reconnaissance of the entire survey area with a combination of surface inspection and shovel testing as the basis for the identification and delineation of archaeological resources. All areas within the survey area that were accessible by foot and that had surface visibility equal to or greater than 50 percent were examined using pedestrian survey with a transect spacing of no more than 10 m. Systematic testing (herein referred to as planned shovel tests) was conducted at 30 m intervals within the survey area. Shovel tests were 30-x-30 cm square holes and excavated to a maximum depth of 70 cm below surface (cmbs), or until impenetrable substrate, sterile subsoil, or the water table was encountered.

The survey area lies along the rolling hills of the loess plain, which consist of wind blown deposits laid down during the late Pleistocene. As the survey area is primarily situated on the apex of the surrounding landscape, there is very little opportunity for the presence of deeply buried archaeological deposits, and TVAR did not encounter any areas requiring deep auguring. Side slopes were systematically shovel tested and all deep erosional ravines were walked and surface inspected. Planned shovel test locations that fell within areas exhibiting ground disturbance (paved and gravel roads), or were situated in water-covered areas (creeks and standing water) or along steep slopes were visually inspected, when possible, and recorded as no digs. TVAR also conducted judgmental shovel tests within the survey area to investigate areas that fell outside the planned 30 m shovel test interval but were considered likely to contain archaeological resources. Finally, artifacts witnessed on the ground surface were collected and recorded as a surface-collection points. Not all surface artifacts were collected, but their location was recorded and approximate boundaries identified for surface scatters.

When archaeological resources were identified during the survey, TVAR implemented a close interval (10 m) shovel testing program to delineate the boundaries of the resources within the bounds

Table 5.2. Distribution of Data Points Recorded during Archaeological Survey.

Data Collection Point		Planned	Resource Delineation	Judgmental	Total
Shovel Test					
Positive		111	65	8	184
Negative		4,023	310	142	4,475
	Subtotal	4,134	375	150	4,659
No-Dig Point		152	5	--	157
Surface Collection		--	--	27	27
Total		4,286	380	177	4,843

of the archaeological survey area. Artifacts recovered in the screen were bagged and labeled by provenience, including a shovel test number and a temporary site number. As per TVA guidelines, close interval shovel testing continued until two sequential negative tests were completed or the bounds of the survey area precluded further testing. Isolated historic artifacts that were not diagnostic of any specific temporal affiliation (e.g. clear container glass or plain whiteware) and were not located in proximity to a documented historic occupation were not delineated. All isolated finds characterized by Native American artifacts were delineated. At sites that could not be fully delineated via shovel testing due to the constraints of the survey area, recommended site boundaries were based on *National Register Bulletin: Definition of National Register Boundaries for Archeological Properties* guidance (Little et al. 1997).

All locations investigated during the survey were recorded using a field computer (Topcon GRS-1, Trimble Geo7X and Dell Latitude 7212 tablet) equipped with a global positioning system (GPS) receiver with sub-meter precision and specialized data-capturing software tailored to archaeological surveying. The combination of hardware and software provided for realtime data acquisition and visualization while furnishing important information to the field crews, including the locations of environmental features and survey boundaries. Using software developed by TVAR, detailed information such as soil descriptions, survey area features, and photographic information was recorded at the time of observation and linked via geographic coordinates.

Results of the Survey

A total of 4,286 planned shovel test locations were investigated during TVAR's archaeological survey (Table 5.2; Figures 5.2-5.17). Of the 4,286 planned locations, a total of 4,134 (96.4 percent) shovel tests were excavated, 111 of which were positive for cultural material. The remaining 152 planned shovel test locations were recorded as no-dig points due to the natural and anthropogenic disturbances noted above. Another 380 locations were investigated during site delineations, 65 of which were positive for cultural material. An additional 150 shovel test locations were excavated outside of the planned shovel test interval in areas considered likely to contain archaeological resources, eight of which yielded artifacts. Finally, artifacts were collected from the ground surface in 27 locations.

Figure 5.2. Shovel test map (1 of 15).

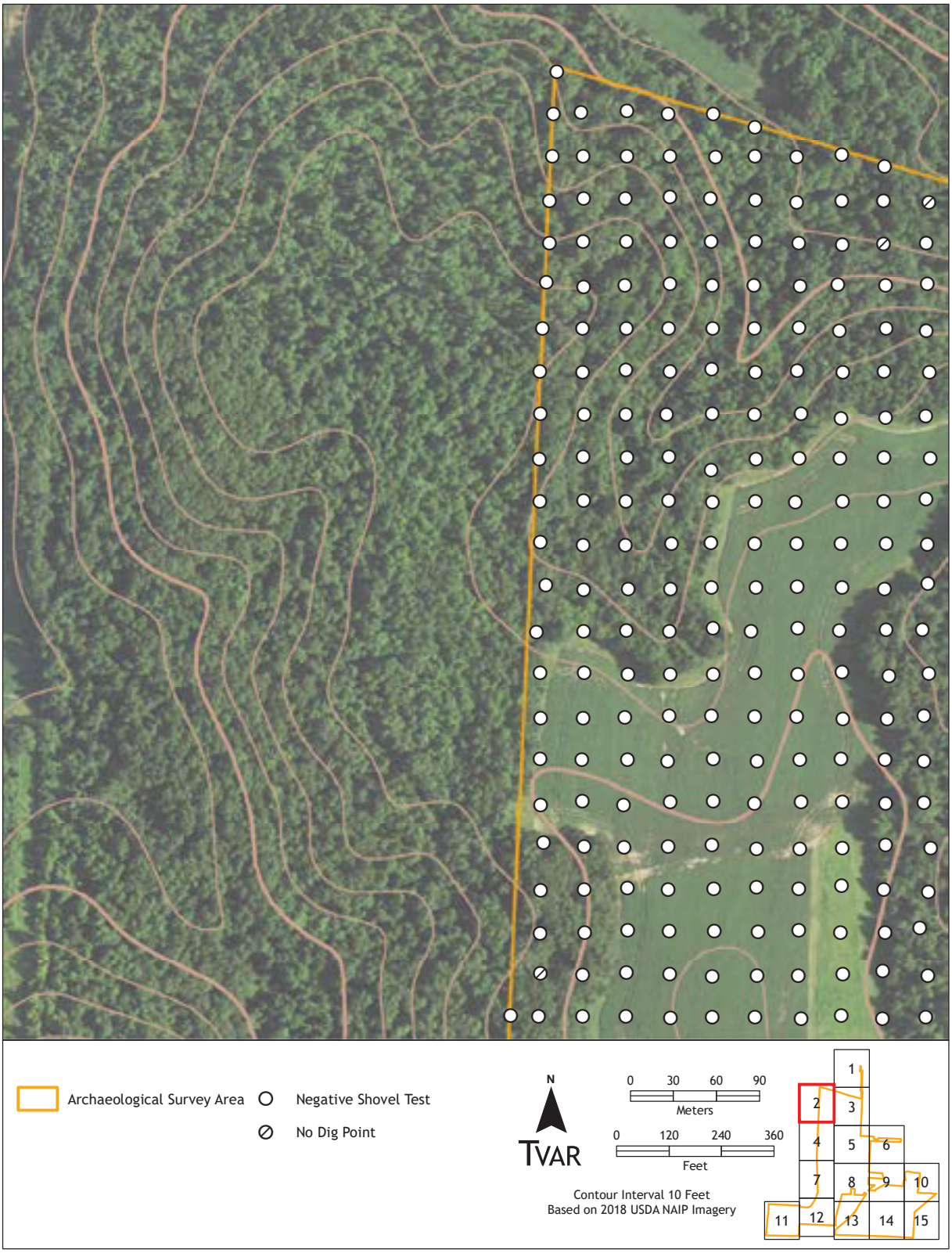

Figure 5.3. Shovel test map (2 of 15).

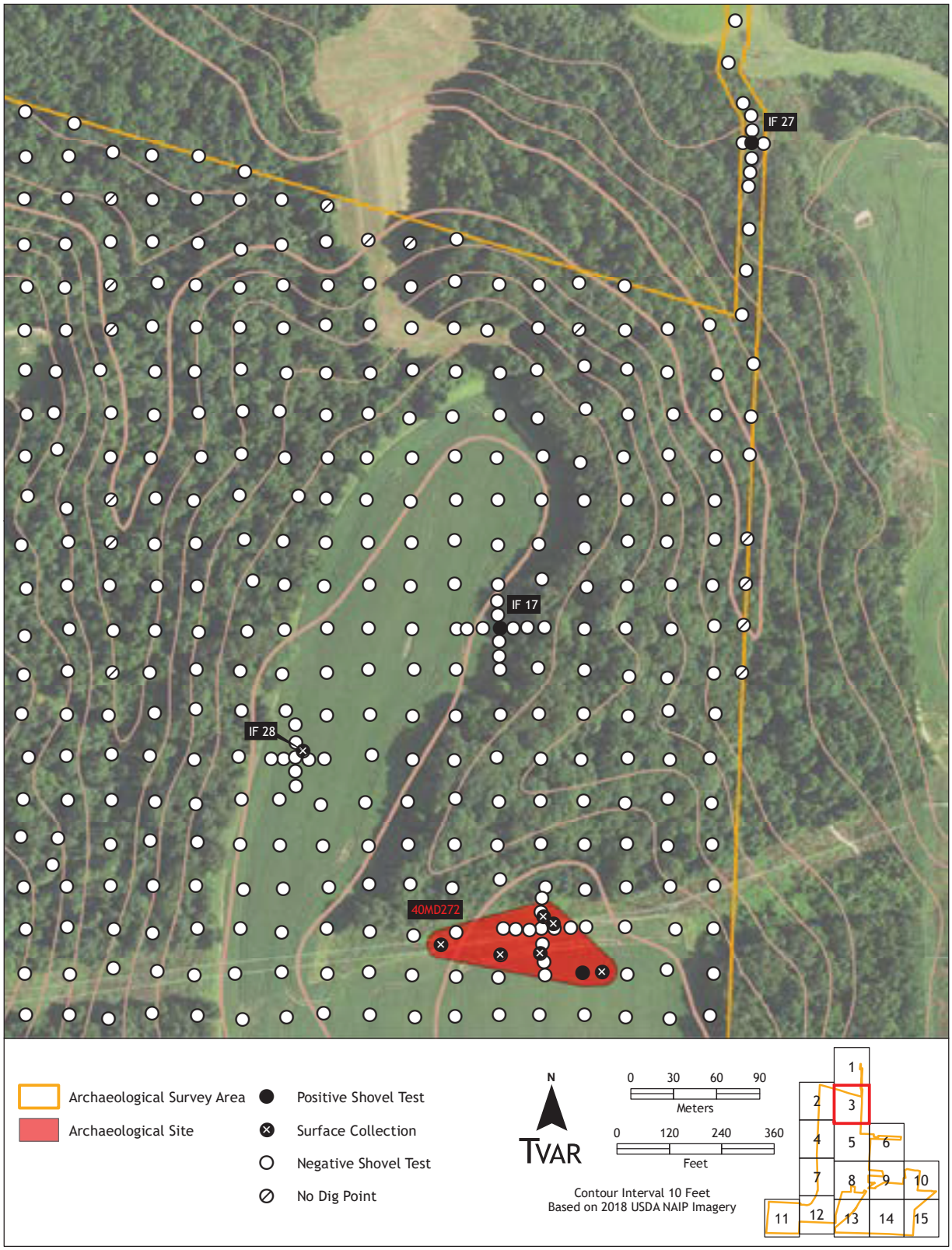

Figure 5.4. Shovel test map (3 of 15).

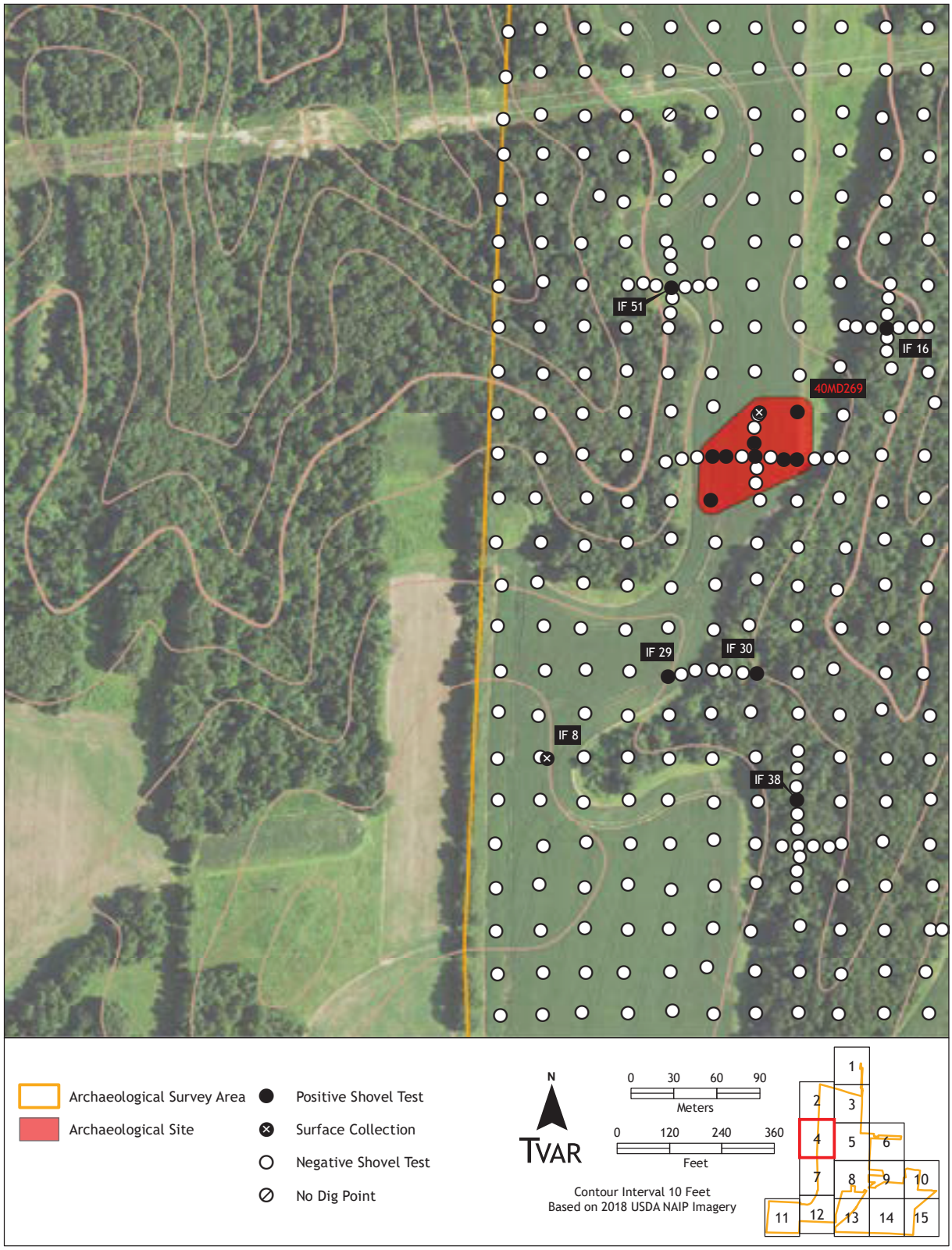

Figure 5.5. Shovel test map (4 of 15).

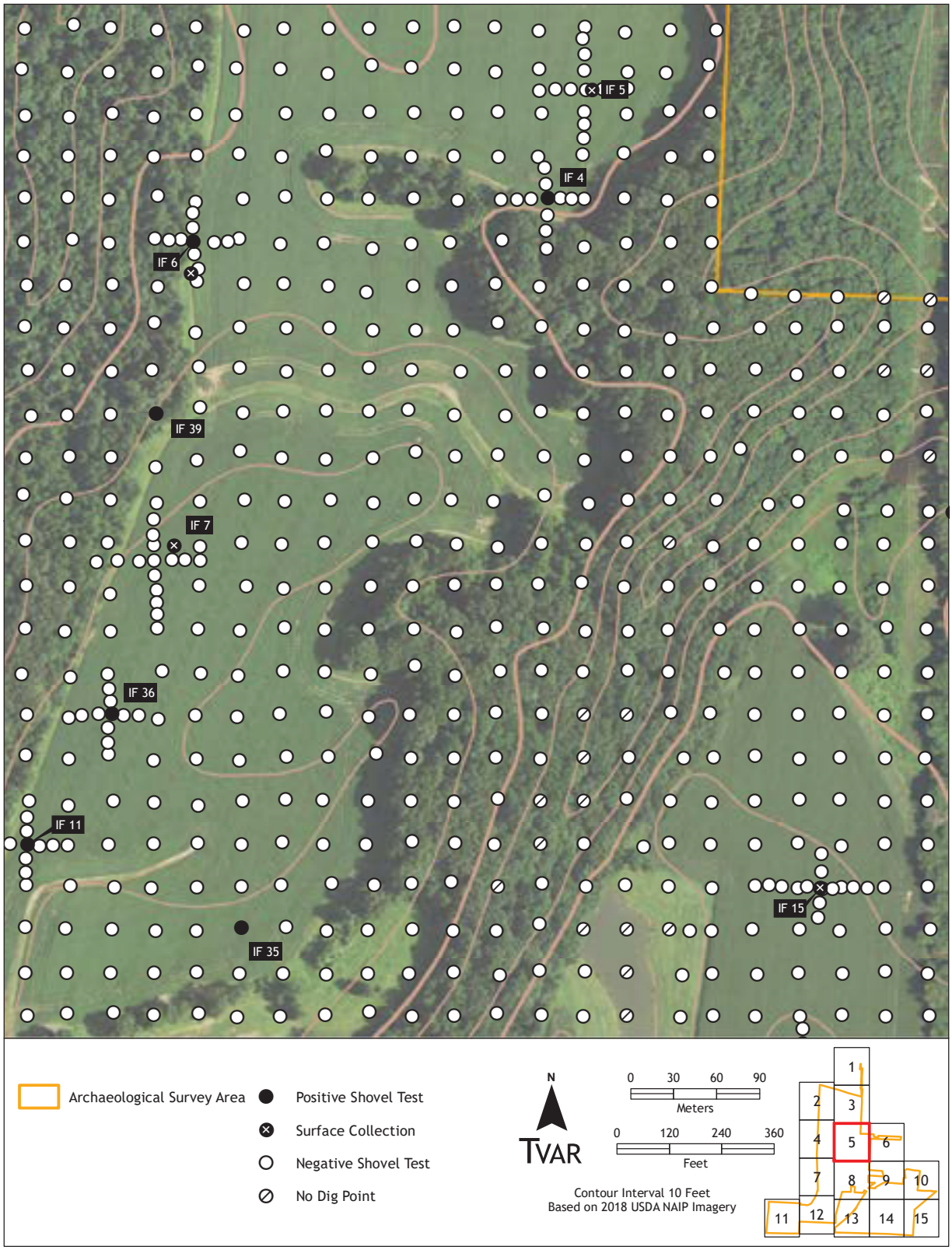

Figure 5.6. Shovel test map (5 of 15).

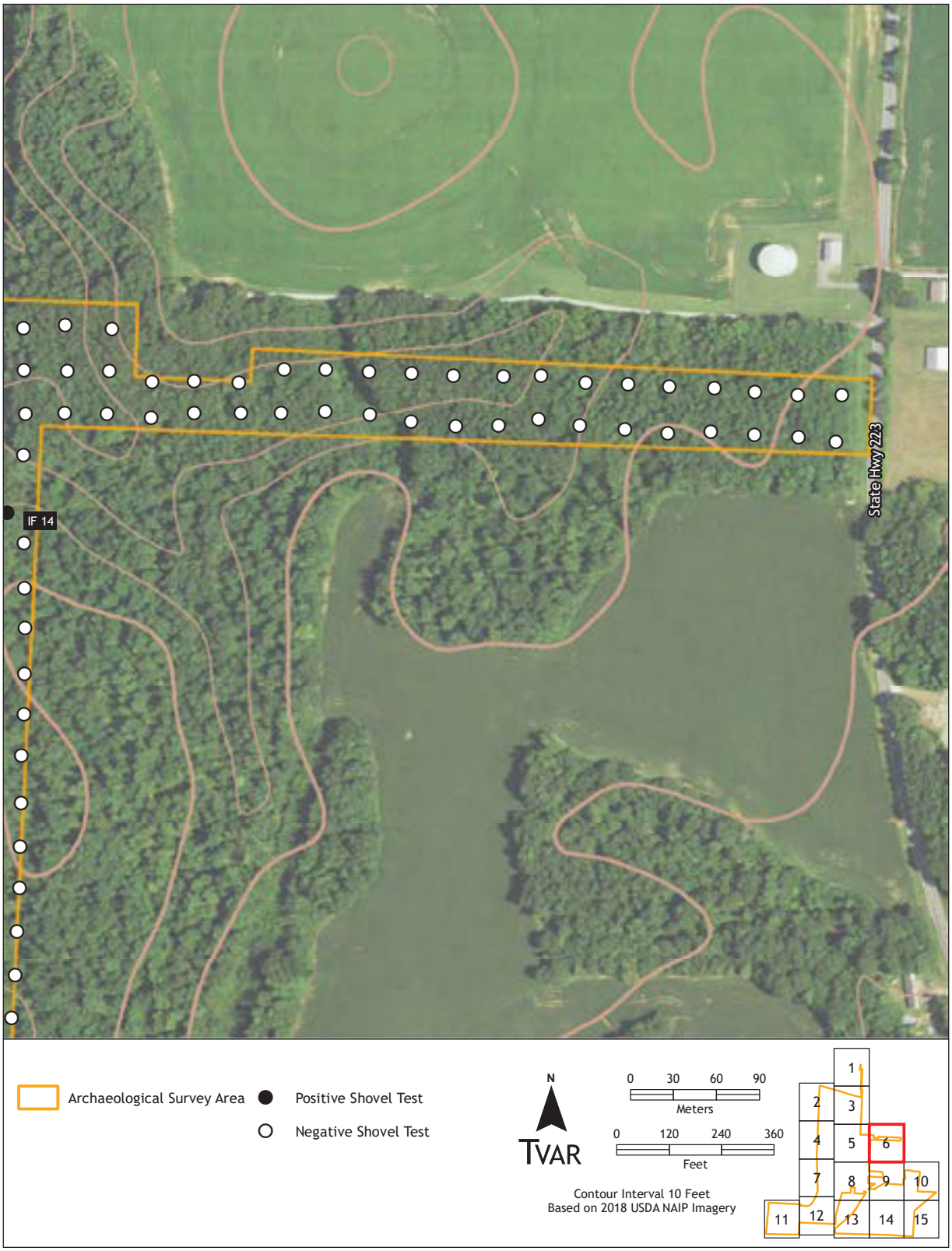

Figure 5.7. Shovel test map (6 of 15).

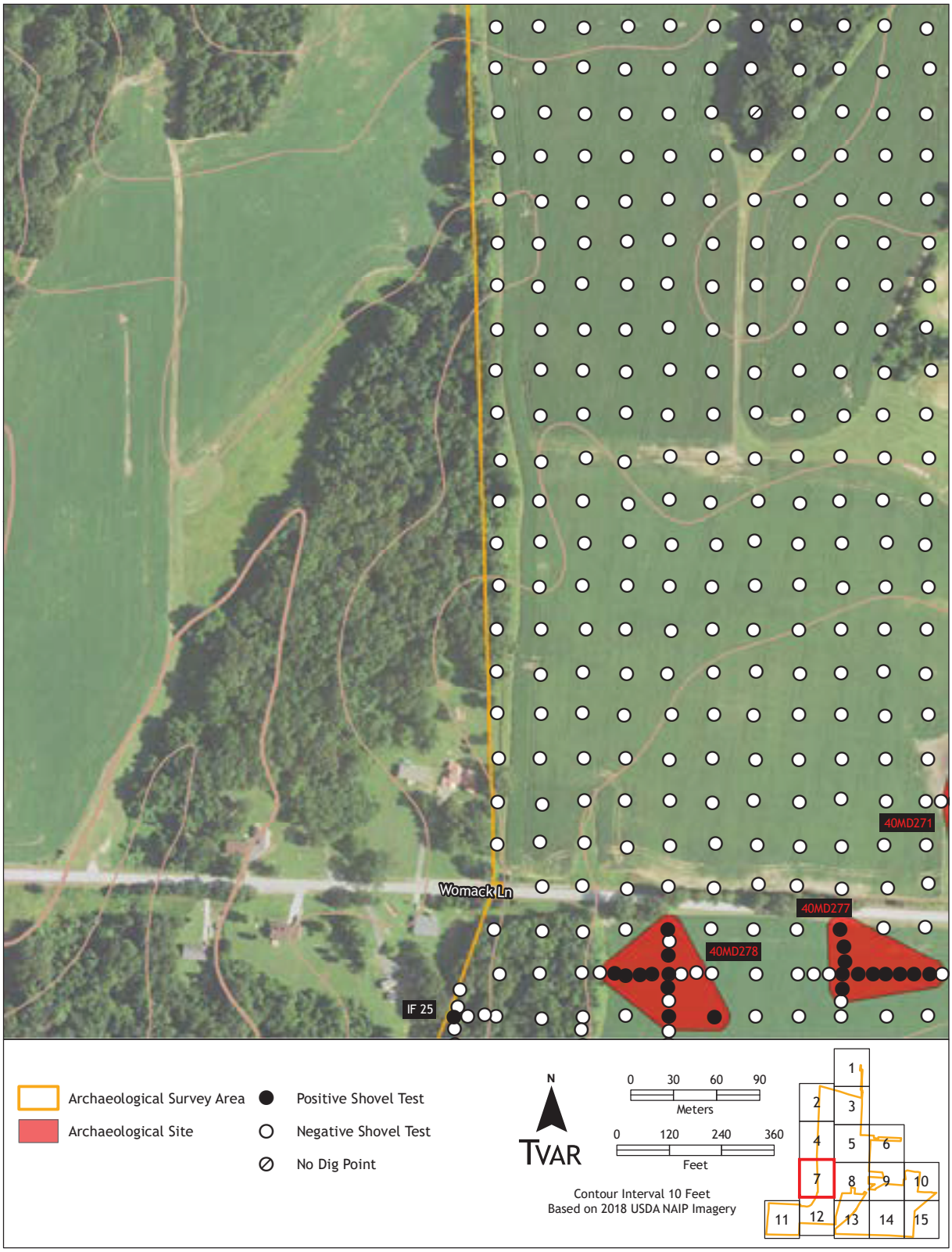

Figure 5.8. Shovel test map (7 of 15).

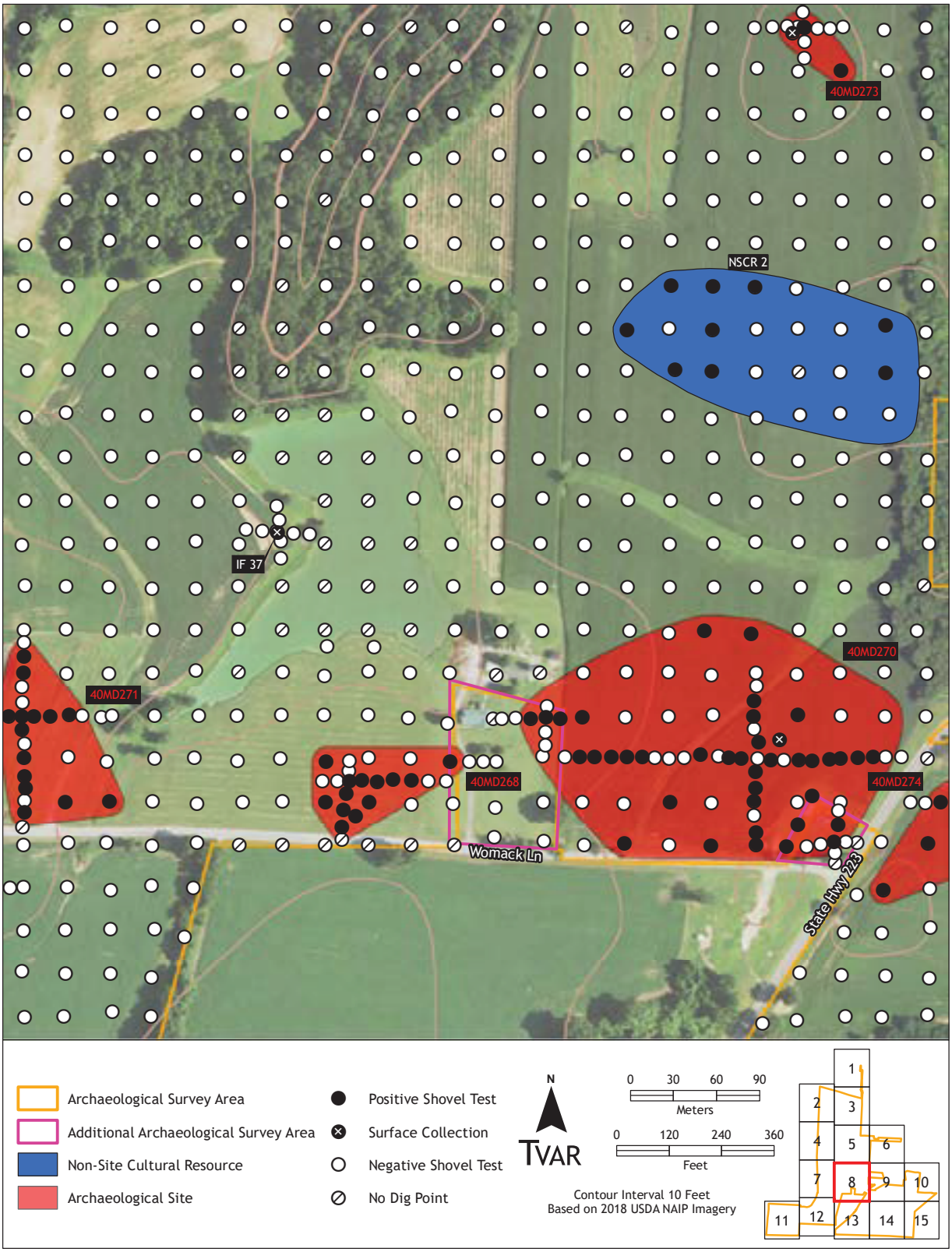

Figure 5.9. Shovel test map (8 of 15).

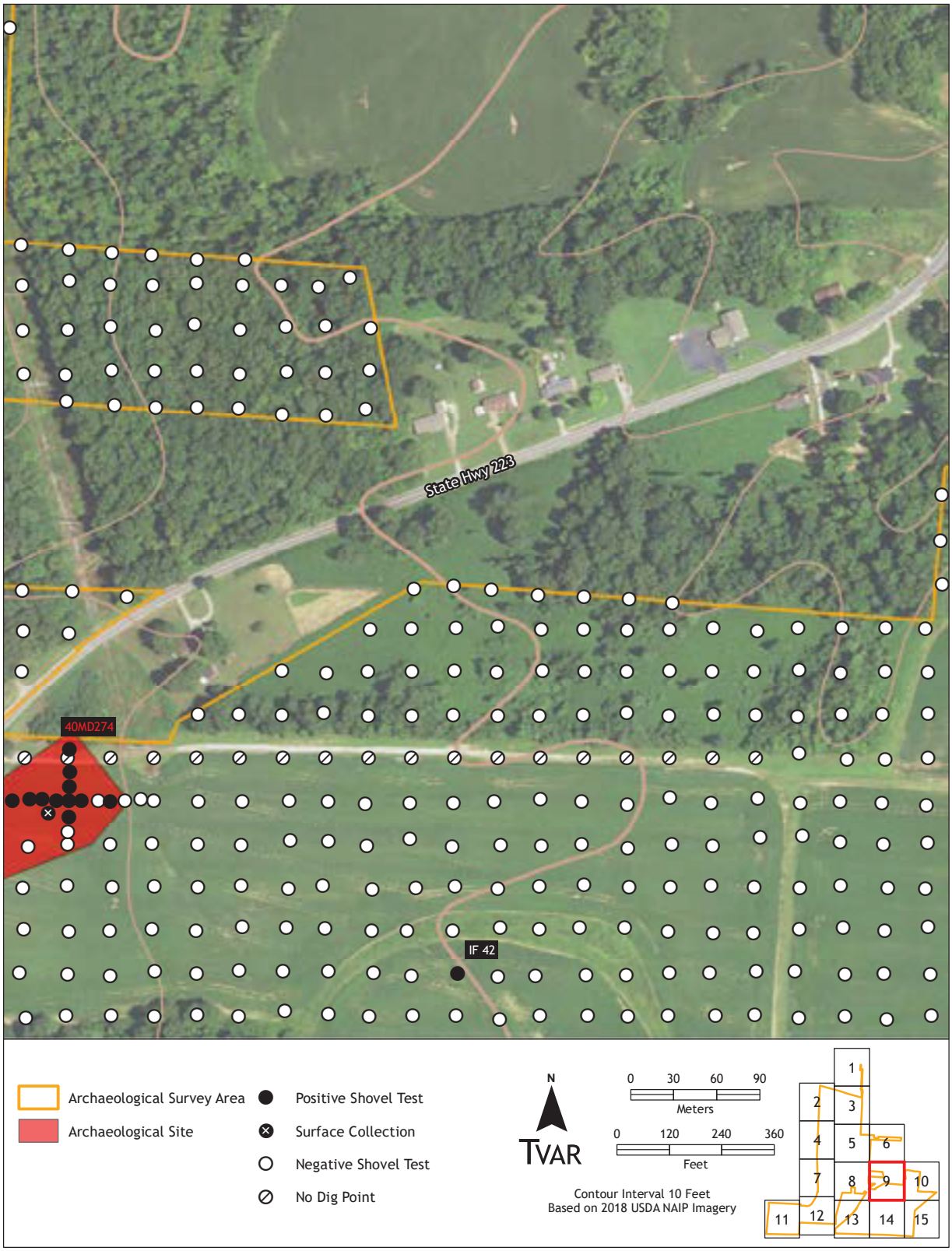

Figure 5.10. Shovel test map (9 of 15).

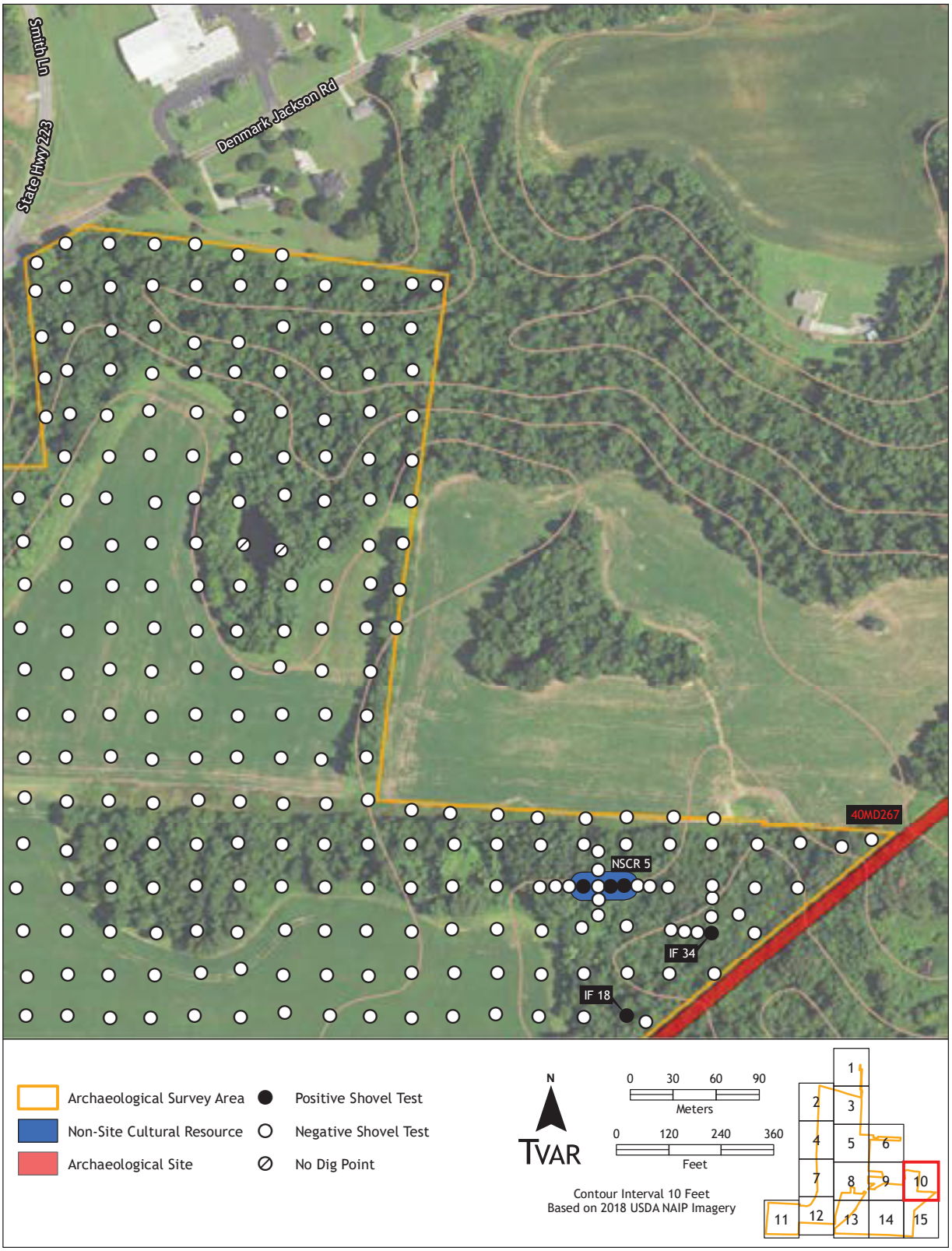

Figure 5.11. Shovel test map (10 of 15).

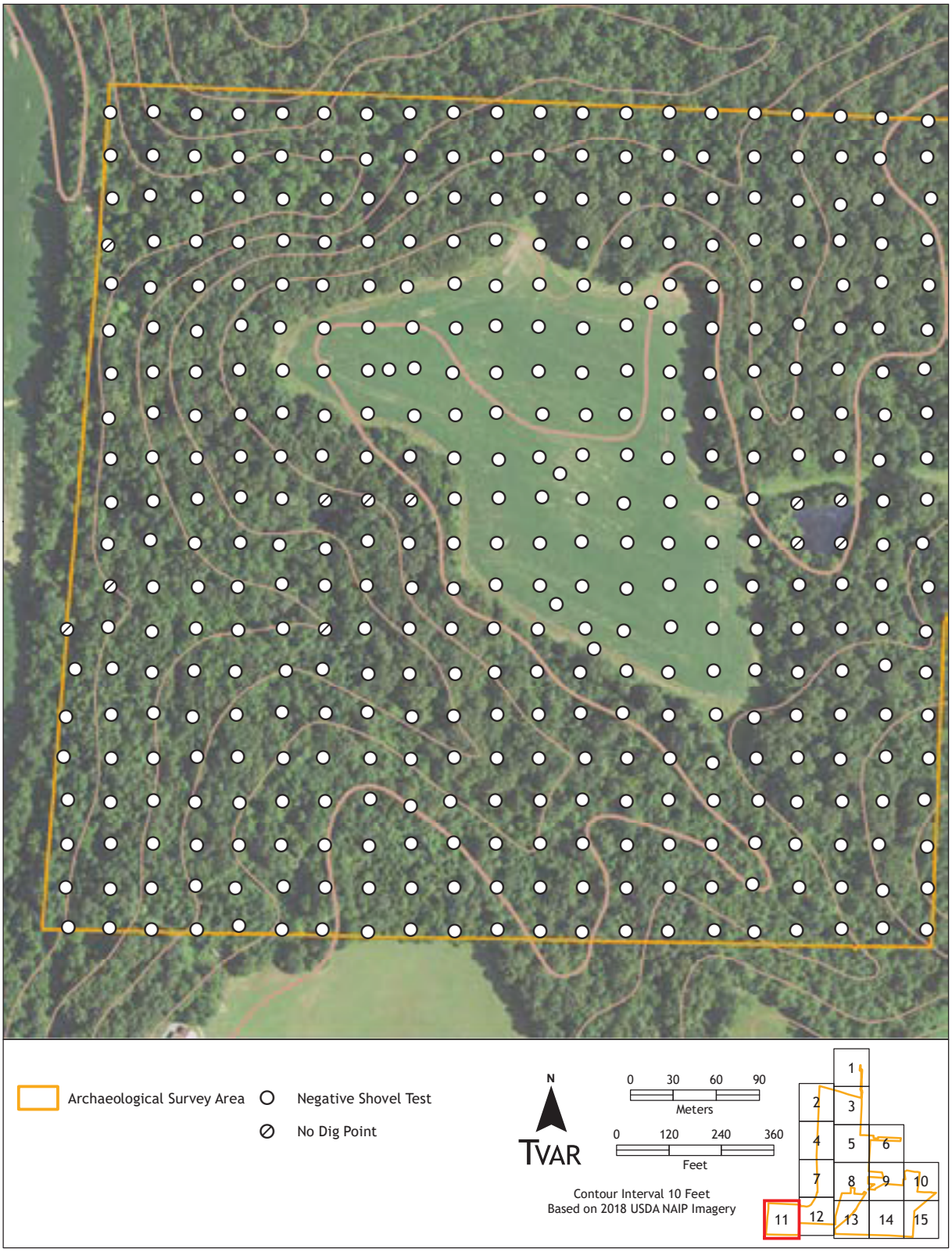

Figure 5.12. Shovel test map (11 of 15).

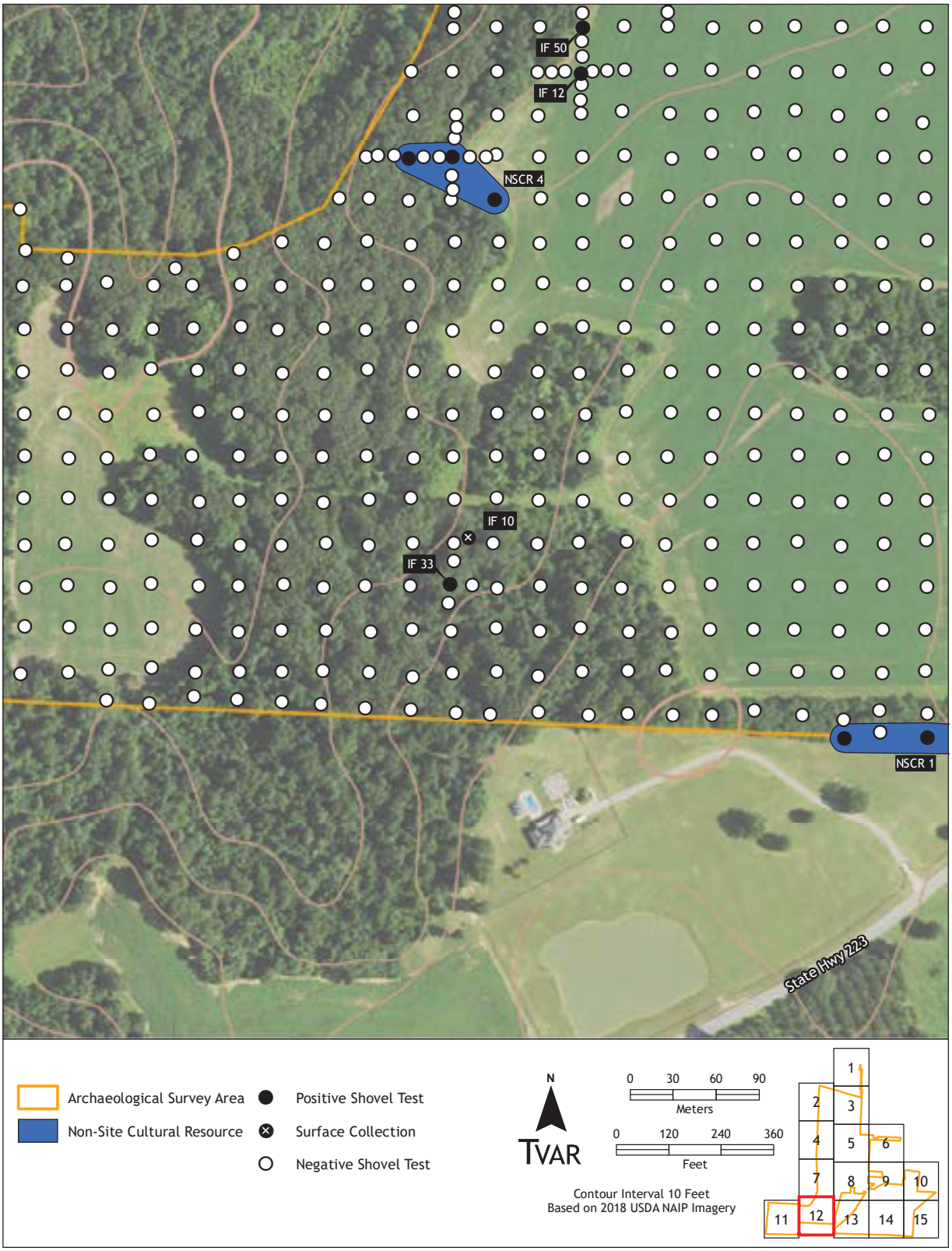

Figure 5.13. Shovel test map (12 of 15).

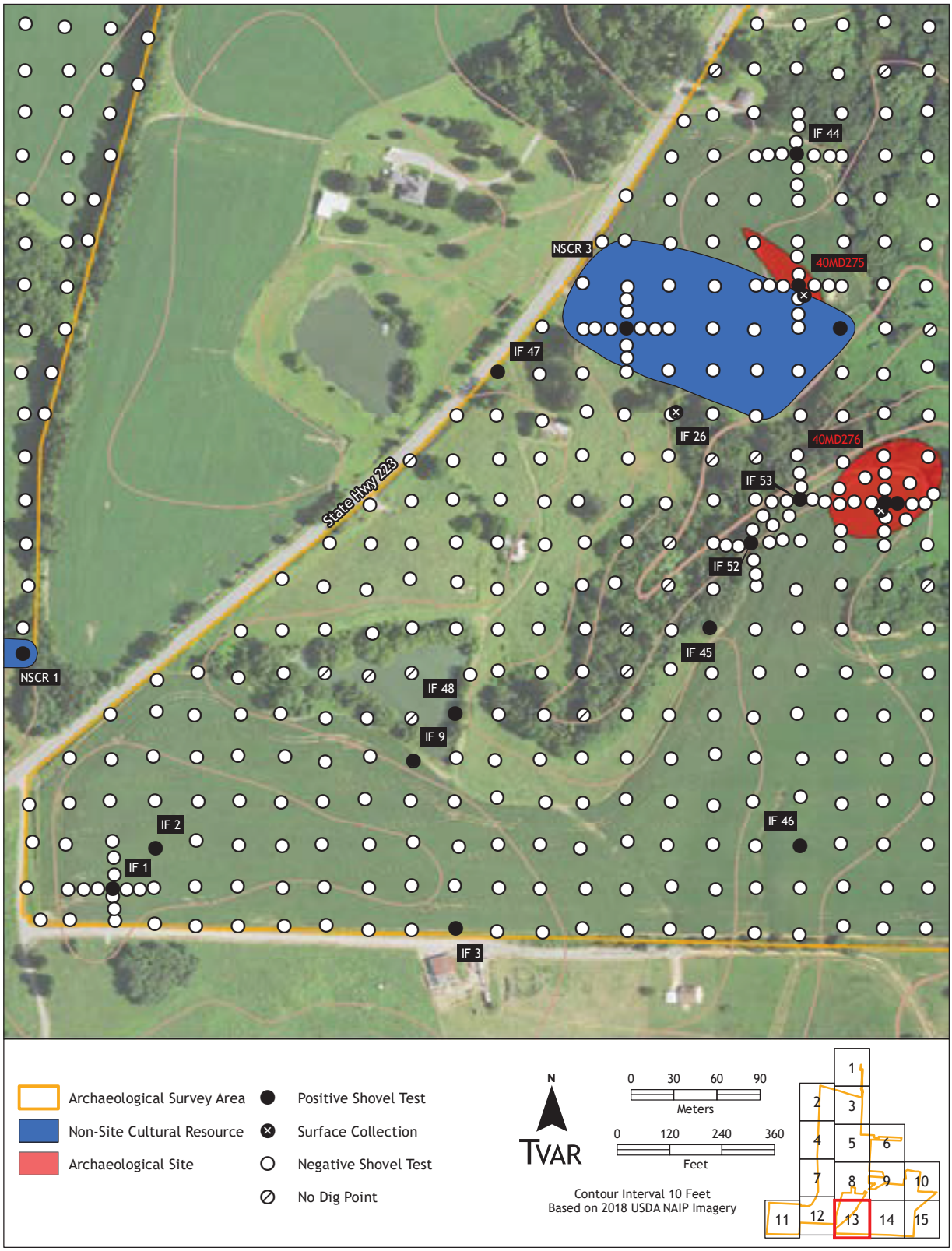

Figure 5.14. Shovel test map (13 of 15).

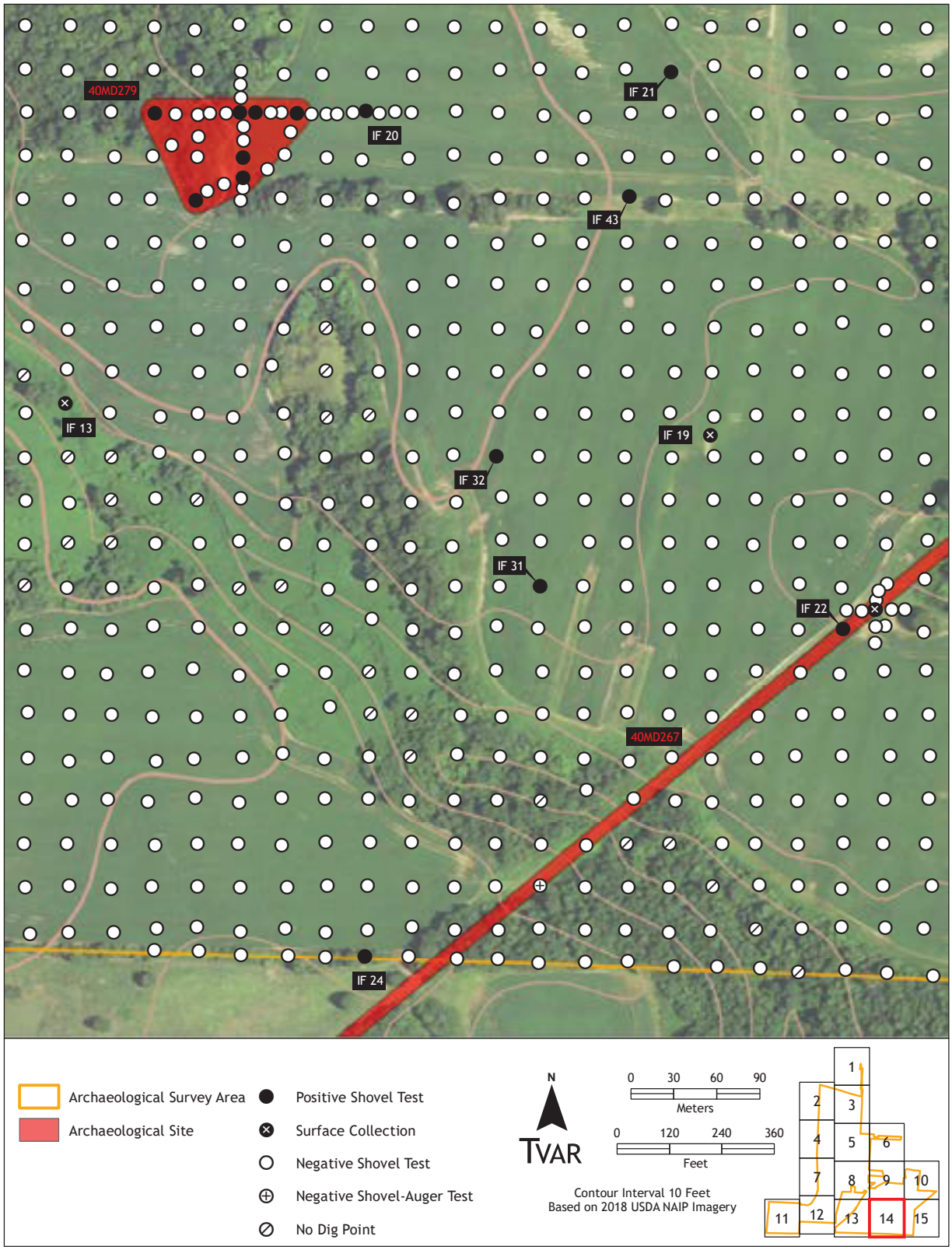

Figure 5.15. Shovel test map (14 of 15).

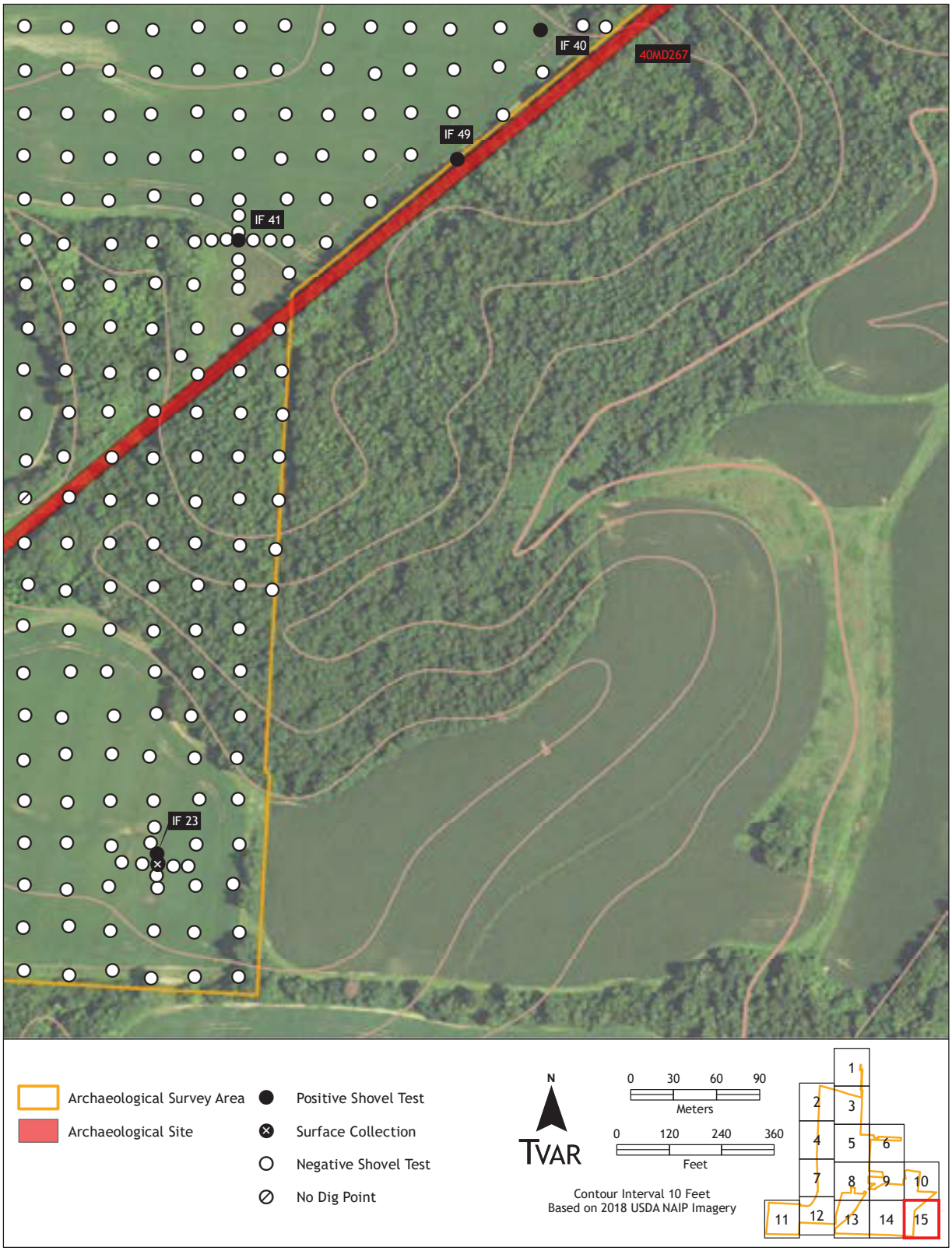

Figure 5.16. Shovel test map (15 of 15).

A detailed shovel test roster is provided in Appendix B, and Appendix C provides the TDOA archaeological site forms for each site investigated during the survey. Pertinent project records and materials will be curated at the Erskine Ramsay Archaeological Repository at Moundville Archaeological Park (Appendix D). As a result of the survey, TVAR identified and evaluated 71 cultural resources within the project area, including including 13 newly recorded sites (40MD267, 40MD268, 40MD269, 40MD270, 40MD271, 40MD272, 40MD273, 40MD274, 40MD276, 40MD277, 40MD278, 40MD279, and 40MD275), five non-site cultural resources (NSCR 1-5), and 53 isolated finds. The recorded boundary of each site reported herein was defined by shovel testing, surface inspection and the limits of the survey area. It is therefore possible that any site that could not be fully delineated extends beyond the current mapped boundary, and accordingly, TVAR's NRHP recommendations for each resource apply only to that portion investigated during the current survey. A description of each resource investigated is provided below.

40MD267

Site 40MD267 consists of a portion of the Tennessee Midland Railroad, which was commissioned ca. 1880 (Figure 5.17). The railroad was completed in June of 1888, and connected the cities of Memphis and Jackson, Tennessee (NRHP 1992). The Louisville & Nashville Railroad purchased the Tennessee Midland in 1895, then leased the line to the Nashville, Chattanooga, and St. Louis Railroad. As part of the Nashville, Chattanooga, and St. Louis Railroad, this segment of rail line became a major part of the connection between Memphis and Nashville. Following World War II, this line was taken over by the Norfolk Southern Railroad. The Nashville, Chattanooga, & St. Louis Railroad merged with the Louisville & Nashville in 1957 and later the Seaboard Line took it over by 1978. Today, it is owned by the CSX Railroad (NRHP 1992). The railroad is depicted as the Chattanooga and St. Louis on the USDA 1906 soil survey map of Madison County, and appears on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles and USGS historic aerial imagery taken in 1947. The rail line is no longer visible in aerial imagery taken in 1997 available on Google Earth, and no intact rails were observed during TVAR's investigation.

The 31,184 m^2 recorded boundary of the resource encompasses the portion of the railroad embankment visible in Lidar imagery within a 0.8 km (0.5 mi) radius surrounding the archaeological survey area (Figure 5.18). However, only the portion of the resource within the survey area was evaluated in regards to its eligibility for listing on the NRHP. At the time of TVAR's investigation, a large portion of the embanked remains of the railroad within the survey area was covered by grass and was used as a field road (Figure 5.19). The remainder of the railroad within the survey area cut through agricultural fields and hardwood forests (Figures 5.20 and 5.21). Two culverts were built into the railroad embankment within the survey area where the line crossed unnamed natural drainages. The first was rectangular in shape and constructed of concrete, measuring 272 cm wide and 208 cm high (Figure 5.22). Notably, a date of 1906 was stamped into the concrete along the top of the culvert, indicating that the rail line was updated at this time (Figure 5.23). The second culvert consisted of two ferrous metal pipes (48 cm in diameter) within a foundation constructed of brick overlain by limestone slabs (Figure 5.24). The exposed portion of the brick foundation measured 264 cm wide and 107 cm tall. A pile of limestone blocks were dumped in the drainage alongside this culvert , likely for erosional control (Figure 5.25). In addition to the culverts, a broken segment of retaining wall con-

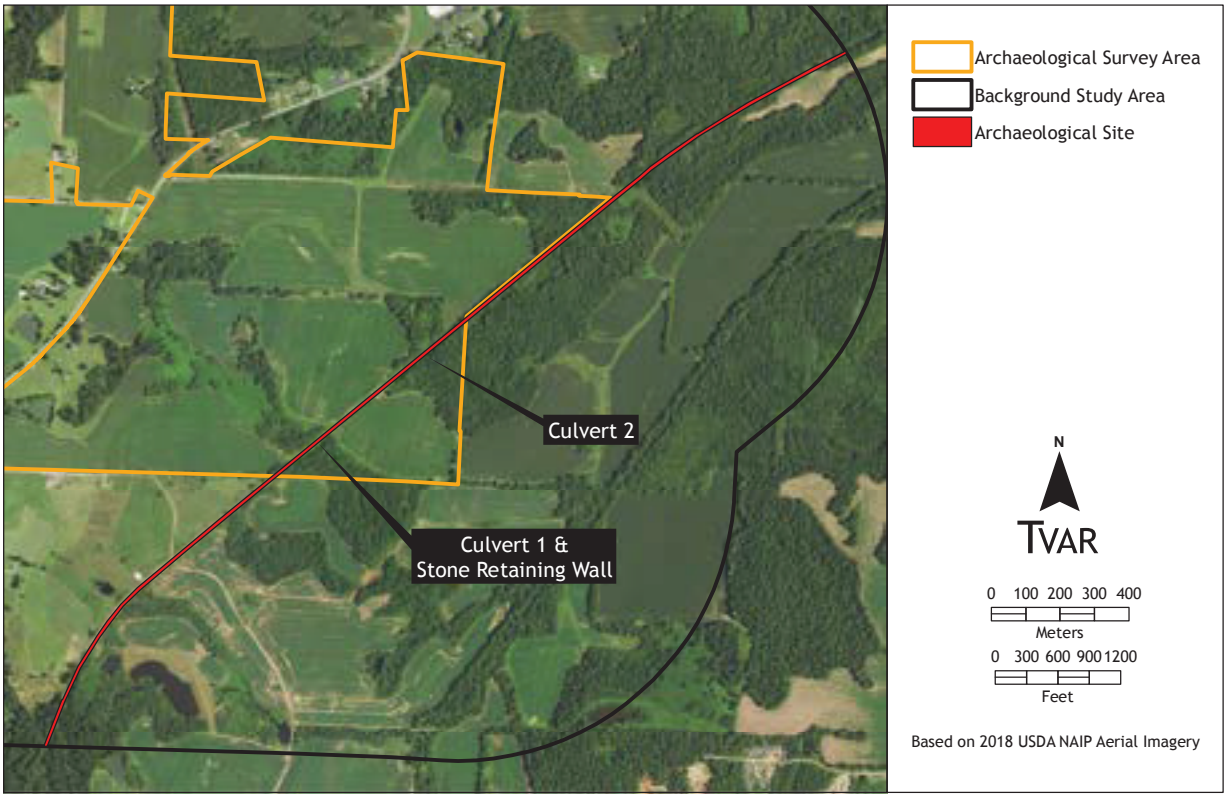

Figure 5.17. Aerial map of 40MD267.

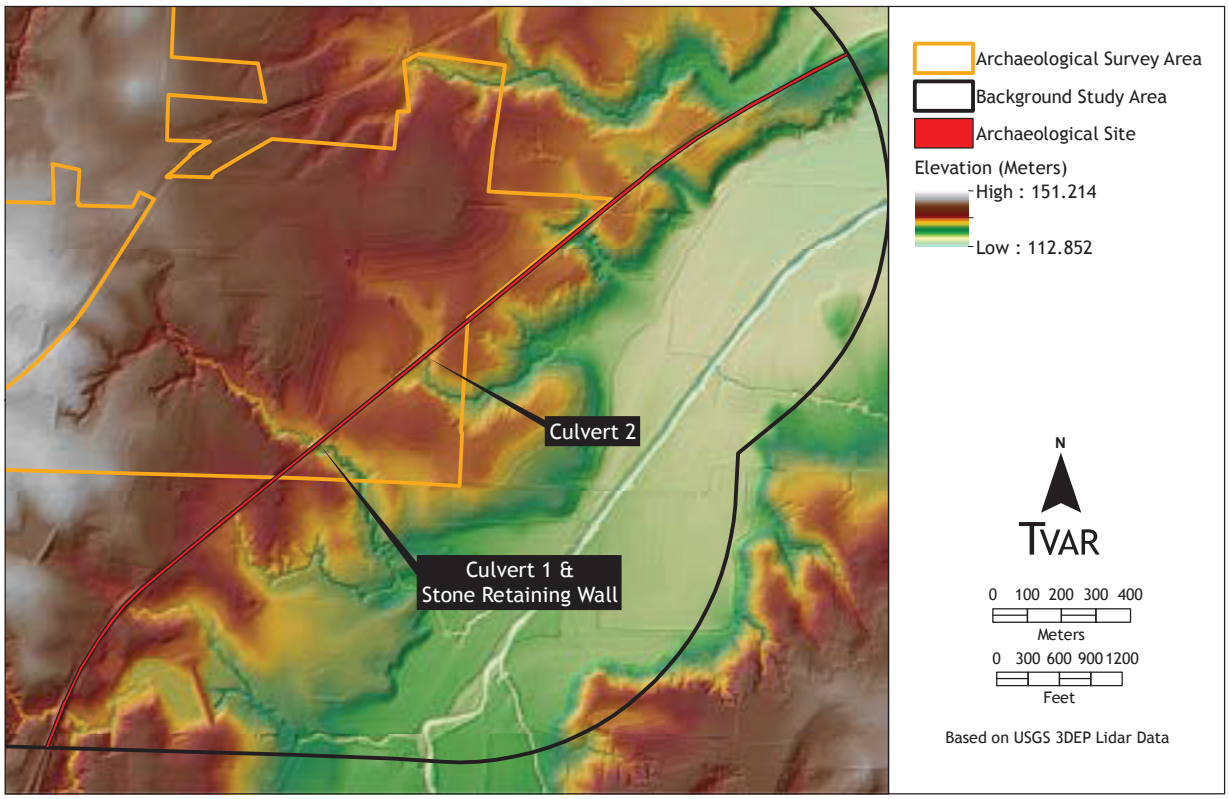

Figure 5.18. Lidar map of 40MD267.

Figure 5.19. Grass field road along the surface of 40MD267 (view to the north).

Figure 5.20. Field road and corn field traversed by 40MD267 (view to the west).

Figure 5.21. Hardwood tree growing into the shoulder of 40MD267 (view to the northwest).

Figure 5.22. Culvert 1 within 40MD267, constructed of concrete (view to the northwest).

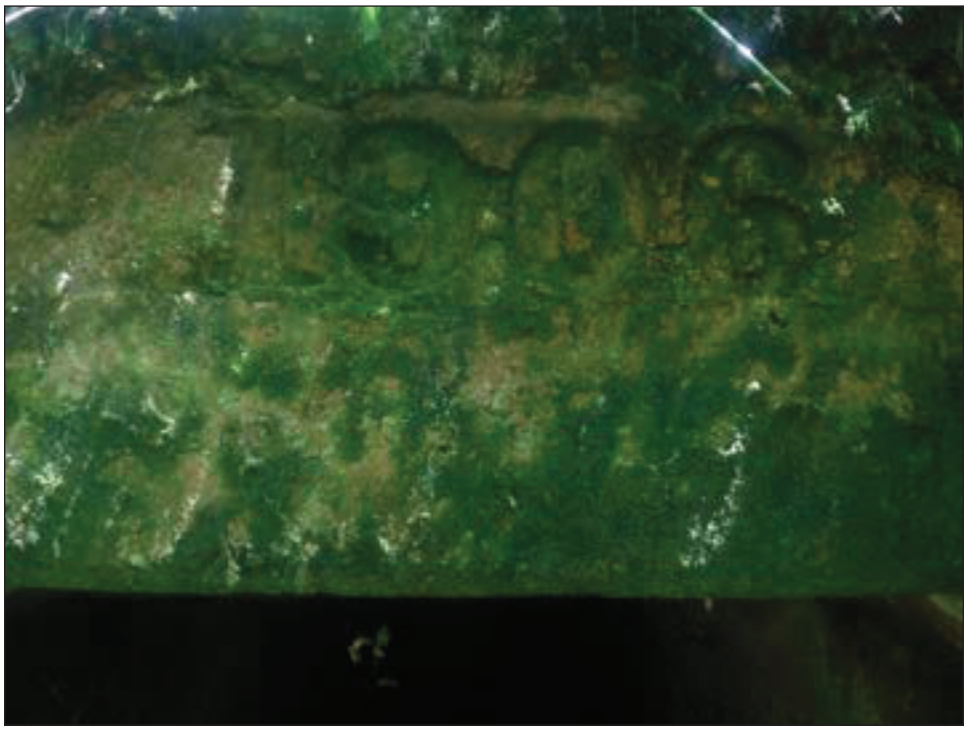

Figure 5.23. A date of "1906" stamped into the concrete of Culvert 1 on 40MD267 (view to the southeast).

Figure 5.24. Culvert 2 in 40MD267, constructed of ferrous metal pipes, brick, and limestone (view to the southwest).

Figure 5.25. Pile of limestone blocks dumped into the drainage associated with Culvert 2 on 40MD267 (view to the northeast).

structed of mortared limestone blocks (approximately 160 cm high and 200 cm wide) was observed along the northwestern bed of the rail road (Figure 5.26). As no structures are depicted in the vicinity of the wall, it was likely constructed to control erosion along the railroad embankment.

Though no trace of intact rail line were observed during the survey, railroad ties and spikes are scattered across the ground surface in some areas (Figure 5.27). One railroad spike was collected from the ground surface during the investigation of the resource, though none were recovered from shovel tests. A total of 34 shovel tests were excavated on or adjacent to 40MD267 within the survey area, one of which produced a fragment of clear container glass reported later in this chapter as Isolated Find 22. The artifact collected during TVAR's investigation of 40MD267 is listed below.

Surface Collection Point 7530
1 197.9 g ferrous metal spike

The integrity of the portion of the railroad within the survey area has been heavily impacted through the removal of the original track infrastructure. Furthermore, the rail bed has been disturbed by the growth of hardwood tree and agriculture. It is TVAR's opinion that the resource within the survey area offers little research potential regarding the area's local or regional history, and accordingly, TVAR recommends that it would not impact the site's overall eligibility for inclusion on the NRHP. No further archaeological investigation of this resource within the survey area is warranted in connection with the proposed project.

Figure 5.26. Limestone retaining wall along the bank of 40MD267 (view to the southeast).

Figure 5.27. Loose, rotted railroad tie observed near 40MD267 (view to the northwest).

40MD268

Site 40MD268, a historic scatter with a lithic isolate, was identified along a hill top adjacent to Womack Lane and 80 m south of a pond formed by impounding an unnamed tributary of Cub Creek (Figure 5.28). At the time of TVAR's survey, the site was located in a grass field, though both historic USGS aerial imagery and a time-lapse of more recent imagery available on Google Earth show that the field has also frequently been cultivated (Figure 5.29).

No structures are depicted in the vicinity of the site on the 1877 map of Madison County. Two structures are discernible on USGS aerial imagery taken in 1947 within the site. The first is adjacent to Womack Lane in the southern extent of the site, and the second, which may be an outbuilding associated with the first, is located in the northwestern extent of the site (Figure 5.30). Only the former is depicted on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles. Neither are visible in USGS aerial imagery taken in 1997, and no evidence of either structure was observed at the time of TVAR's investigation.

A total of 22 shovel tests were excavated during the initial investigation of the site within the survey area, 13 of which yielded artifacts (n=177) from a maximum depth of 45 cmbs. TVAR excavated two additional shovel tests along the eastern boundary of the site during the investigation of the additional survey area, though neither produced artifacts (see Figure 5.28). The site encompasses 4,653 m^2. Memphis silt loam (MeB) is mapped throughout the identified portion of the site. Shovel Test 3181 produced a profile representative of those observed during the testing of 40MD268, consisting of a grayish brown (10YR 5/2) silty clay loam plowzone (0 to 17 cmbs), over a dark yellowish brown (10YR 4/4) silty clay loam (17 to 28 cmbs), underlain by a yellowish brown (10YR 5/4) silty clay loam (28 to 50 cmbs) (Figure 5.31). Notably, a stratum of black silt loam was observed in one test, Shovel Test 5167. All of the artifacts recovered from this test were excavated from this stratum. Shovel Test 5167, which was excavated approximately 15 m north of the structure mapped adjacent to Womack Lane, produced a profile consisting of a black (7.5YR 5/1) silt loam (0 to 15 cmbs), over a yellowish brown (10YR 5/4) silty clay loam plowzone (15 to 24 cmbs), underlain by a yellowish brown (10YR 5/6) silty clay loam (24 to 54 cmbs) (Figure 5.32). This black stratum likely represents the remains of a historic or near modern burn pile, which was disturbed and churned into the underlying soil by plowing and bioturbation from roots. The artifacts recovered during TVAR's investigation of 40MD268 are listed below.

Figure 5.28. Map of TVAR's investigations at 40MD268.

Figure 5.29. The location of 40MD268 in a grass field (view to the east).

Figure 5.30. Excerpts from historic USGS 7.5-minute topographic quadrangles and imagery showing the location of structures within the recorded boundary of 40MD268.

Figure 5.31. Southern profile of Shovel Test 3181 on 40MD268.

Figure 5.32. Western profile of Shovel Test 5167 on 40MD268.

Shovel Test 3179 (0-10 cmbs)

1	1.3 g	light green container glass
1	7.24 g	light green molded container glass with applied color label
1	0.65 g	clear container glass

Shovel Test 3179 (10-20 cmbs)

1	2.67 g	clear molded container glass
1	3.83 g	light green molded container glass
	0.15 g	carbonized wood

Shovel Test 3180 (0-15 cmbs)

1	0.95 g	green pressed glass, tableware with floral design
1	0.52 g	light blue flat glass
4	3 g	clear container glass
1	3.57 g	milk container glass/canning jar lid insert w/illegible embossing
1	0.19 g	plastic fragment

Shovel Test 3180 (15-25 cmbs)

1	0.84 g	clear molded container glass
1	2.21 g	light blue flat glass
2	12.88 g	ferrous metal wire nail

Shovel Test 3181 (0-10 cmbs)

1	0.49 g	clear undifferentiated glass
1	1.83 g	light green molded container glass
1	1.15 g	clear molded container glass, drinking glass
1	1.99 g	clear molded container glass
1	19.97 g	ferrous metal wire, fencing

Shovel Test 3181 (10-20 cmbs)

1	0.47 g	amber container glass
1	0.53 g	amber container glass with stippled design
1	1.14 g	clear container glass

Shovel Test 3184 (0-15 cmbs)

1	1 g	1/4-inch debitage, Fort Payne chert
1	3.5 g	brick fragment

Shovel Test 3187 (10-20 cmbs)

1	0.63 g	clear container glass
2	1.55 g	ferrous metal wire nail fragment

Shovel Test 5159 (20-30 cmbs)

1	1.93 g	clear container glass/machine mold seam, bottle/jar

Shovel Test 5164 (15-30 cmbs)

5	5.08 g	green container glass
1	7.76 g	milk container glass/machine mold seam, bottle/jar
15	25.45 g	light green flat glass
2	0.39 g	green undifferentiated glass
1	4.29 g	green container glass/machine mold seam, bottle/jar with applied color label
2	8.42 g	green container glass/machine mold seam, bottle/jar
7	23.63 g	green container glass with applied color label
1	0.37 g	amber container glass
9	1.61 g	clear undifferentiated glass
1	2.23 g	clear molded container glass/machine mold seam, bottle/jar
6	23.8 g	clear molded container glass
1	0.07 g	clear light bulb glass
1	2.32 g	clear container glass/external thread (large) finish, jar
18	15.64 g	clear container glass
1	0.36 g	amber container glass with stippled design
1	1.43 g	ferrous metal fragment
1	119.64 g	ferrous metal horseshoe fragment
2	9.06 g	ferrous metal wire nail fragment

Shovel Test 5164 (30-45 cmbs)

1	3.3 g	green container glass
1	1.92 g	clear molded container glass with applied color label
2	2.14 g	clear container glass
1	0.57 g	clear molded container glass

Shovel Test 5165 (0-15 cmbs)

1	12.91 g	clear container glass/machine mold seam, bottle/jar
1	53.85 g	light green molded container glass/machine mold seam/crown finish, bottle with applied color label
4	20.64 g	light green molded container glass
2	0.63 g	light green container glass
2	1.25 g	clear undifferentiated glass
3	1.89 g	clear molded container glass
1	0.09 g	light green undifferentiated glass
1	3.3 g	clear container glass
1	0.35 g	aqua container glass
1	1.95 g	amber container glass/machine mold seam, bottle/jar with stippling
1	0.15 g	amber container glass/machine mold seam, bottle/jar
4	2.59 g	amber container glass
1	3.99 g	clear container glass/machine mold seam/external thread (large) finish, jar
2	1.09 g	clear flat glass
1	1.3 g	ferrous metal wire nail fragment
1	3.66 g	ferrous metal wire, fencing

Shovel Test 5165 (15-30 cmbs)

1	2.3 g	amber container glass with stippled design
1	0.65 g	light green flat glass
1	0.12 g	clear undifferentiated glass
1	0.23 g	clear container glass/machine mold seam, bottle/jar
1	0.34 g	clear container glass with stippling
1	3.62 g	clear container glass w/decorative embossing
3	7.48 g	clear container glass
1	1.44 g	amber molded container glass with stippled design
1	0.31 g	amber container glass/machine mold seam, bottle/jar with stippled design
1	2.24 g	light green molded container glass
1	0.18 g	amber molded container glass

Shovel Test 5166 (0-15 cmbs)

1	0.82 g	amber container glass/undifferentiated finish, bottle/jar
1	1.11 g	ferrous metal wire nail fragment
1	7.3 g	ferrous metal wire, fencing
1	1.07 g	ferrous metal wire

Shovel Test 5167 (0-10 cmbs)

1	27.07 g	plain whiteware plate
1	51.7 g	plain whiteware plate with “HOMER LAUGHLIN maker mark”/”MADE IN U.S.A.”/”H34 N6” maker mark
1	30.32 g	clear molded container glass/machine mold seam/cup bottom base, bottle w/”PAT. PNOG.”/”12 Owens-Illinois Glass Company maker mark 5” embossing
1	2.78 g	clear container glass with stippled design
4	1.67 g	clear container glass
1	58.06 g	milk container glass/machine mold seam/cup bottom base/external thread (large) finish/ferrous metal screw cap, jar w/”7” embossing
1	4.94 g	ferrous metal staple, fencing
1	46.79 g	ferrous metal wire nail

Shovel Test 5168 (30-40 cmbs)

1	0.74 g	aqua container glass

Shovel Test 5170 (10-25 cmbs)

1	1.42 g	plain whiteware
2	5.84 g	clear container glass
3	3.25 g	clear molded container glass
1	4.8 g	ferrous metal wire, fencing

Shovel Test 5171 (5-20 cmbs)

3	7.86 g	clear container glass

The lithic isolate at the site was a debitage specimen produced from Fort Payne chert, which was recovered from the first 15 cmbs of Shovel Test 3184 in a mixed context with a brick fragment. Due to artifact paucity and the disturbance indicated by the recovery of historic and lithic artifacts in the same context, TVAR recommends that the lithic isolate on 40MD268 offers little research potential beyond the findings of the Phase I survey and does not contribute to the site's overall NRHP eligibility.

The historic assemblage recovered during TVAR's investigation of the site consisted of clear (n=68), amber (n=15), green (n=15), light green (n=12), milk (n=3), and aqua (n=2) container glass, light green (n=16), clear (n=2), and light blue (n=2) flat glass, clear (n=13), green (n=2), and light green (n=1) undifferentiated glass, green pressed glass tableware (n=1), clear light bulb glass (n=1) whiteware (n=3), one ferrous metal fragment, one ferrous metal horseshoe fragment, one ferrous metal fencing staple, metal wire nails (n=10), ferrous metal wire fragments (n=5), one brick fragment, one plastic fragment, and 0.15 g of carbonized wood. These artifacts largely represent twentieth century occupation, consistent with the structures built at the site prior to 1947 and razed between 1947 and 1997. The majority of the assemblage (n=153, 86.4 percent) of the artifacts recovered at the site consisted of glass fragments. As the materials recovered at the site do not distinguish the assemblage's research potential from other similar sites in the region and were largely confined to a plowzone context, it is the opinion of TVAR that 40MD268 lacks integrity and significant research potential. Accordingly, TVAR recommends that 40MD268 is not eligible for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

40MD269

Site 40MD269, a historic scatter, was identified along the crest of a hill (Figures 5.33 and 5.34). The resource was situated 0.5 km east of an unimproved field road that connected to Womack Lane 1 km to the south, and 400 m southeast of an unnamed tributary of Cub Creek. At the time of TVAR's investigation, 40MD269 was located in a corn field (Figure 5.35). No structures are present in the vicinity of the site on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles. An apparent silo is visible in USGS historic aerial imagery taken in 1947 downslope and to the east of 40MD269, but no other structures are visible. The silo is not visible in later aerial imagery and was not seen at the time of the survey.

A total of 19 shovel tests were excavated during the investigation of the site within the survey area, 8 of which yielded artifacts (n=21) from a maximum depth of 50 cmbs. An additional three artifacts were collected from the ground surface in the northern extent of the site. The site encompasses 4,636 m^2. Memphis silt loam (MeB) is mapped throughout the identified portion of the site. Shovel Test 3428 produced a profile representative of those observed during the testing of 40MD269, consisting of a light yellowish brown (10YR 6/4) silty clay loam plowzone (0 to 23 cmbs) over a yellowish brown (10YR 5/6) silty clay loam (23 to 50 cmbs) (Figure 5.36). The artifacts recovered during TVAR's investigation of 40MD269 are listed below.

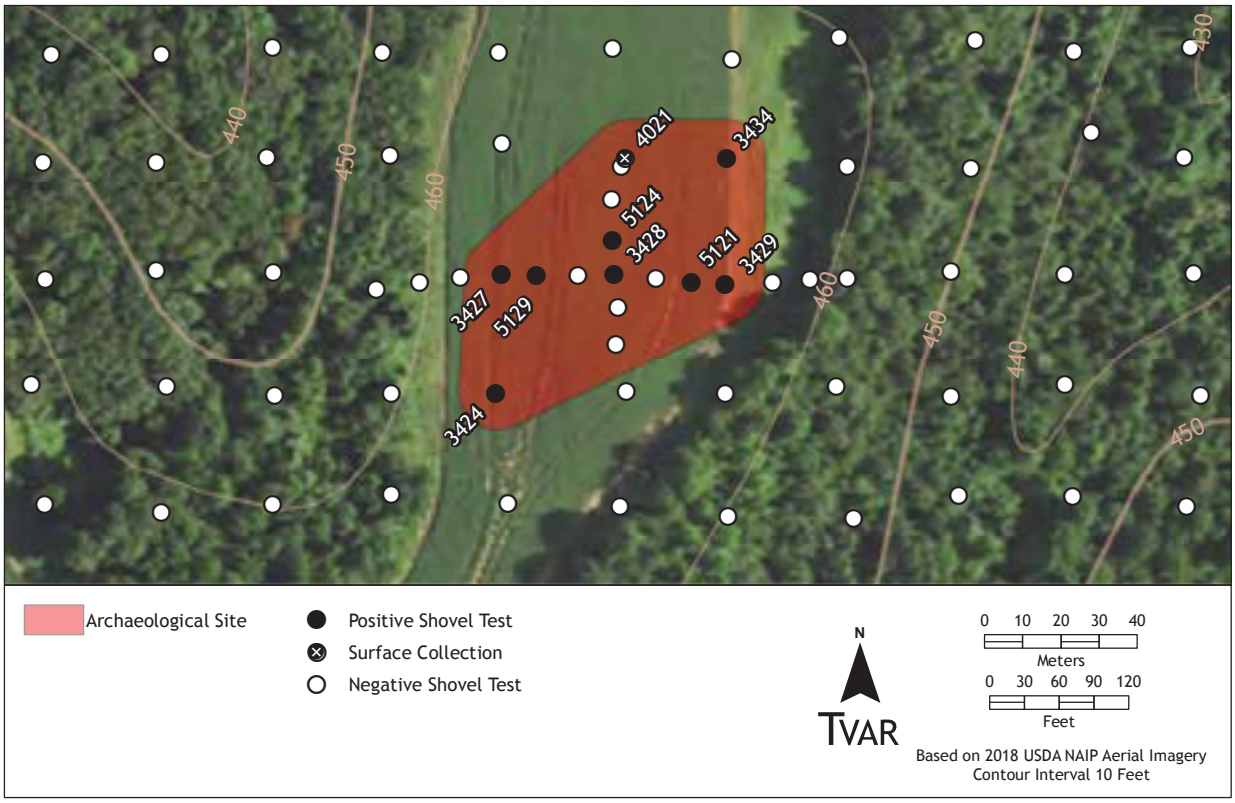

Figure 5.33. Map of TVAR's investigations at 40MD269.

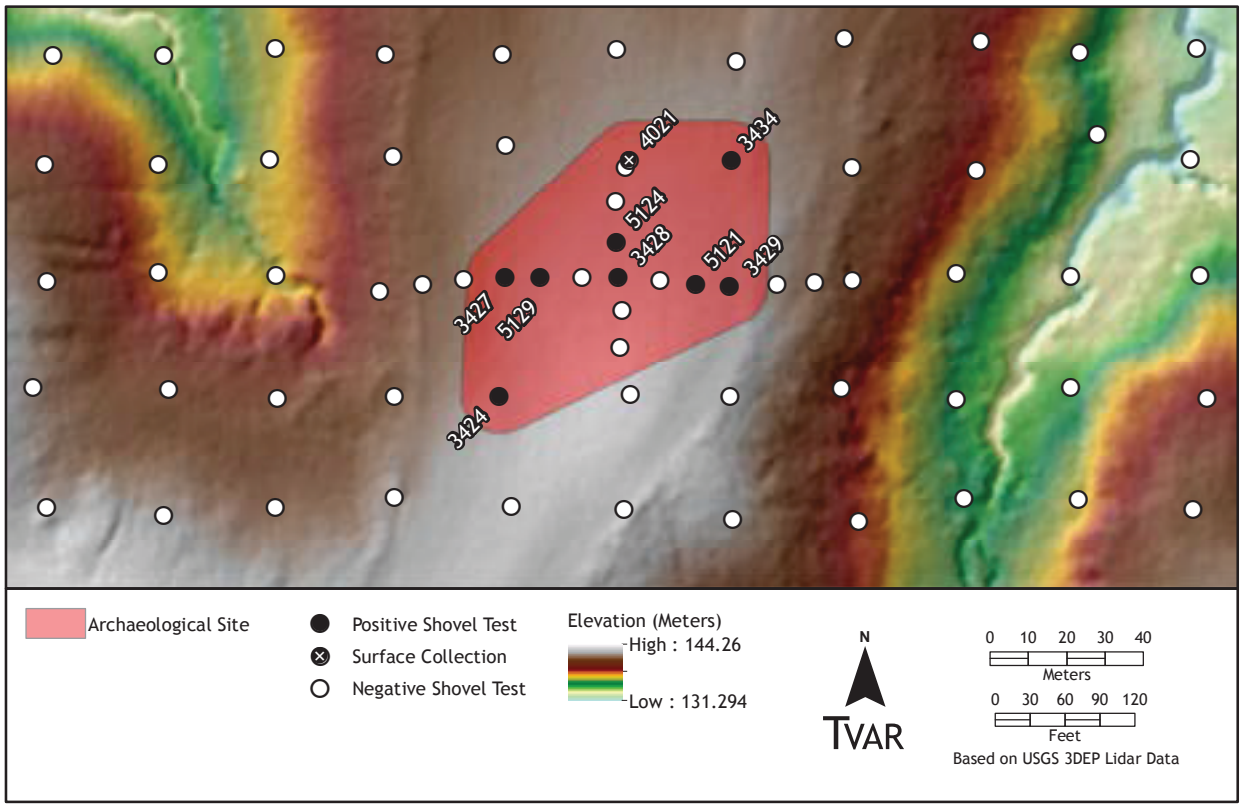

Figure 5.34. Lidar map of TVAR's investigations at 40MD269.

Figure 5.35. The location of 40MD269 in a corn field (view to the south).

Figure 5.36. Southwestern profile of Shovel Test 3428 on 40MD269.

Surface Collection Point 4021

1	1.85 g	plain whiteware
1	16.9 g	amethyst (solarized) container glass
1	0.43 g	cobalt blue container glass

Shovel Test 3424 (0-10 cmbs)

1	6.11 g	amethyst (solarized) container glass
1	9.17 g	aqua container glass/undifferentiated base, bottle/jar
1	6.35 g	amethyst (solarized) molded container glass/machine mold seam, bottle/jar
1	17.9 g	amethyst (solarized) container glass/undifferentiated base, bottle/jar w/"circle"/"11" embossing
1	6.17 g	amethyst (solarized) container glass/undifferentiated base, bottle/jar

Shovel Test 3427 (0-5 cmbs)

1	1.08 g	amber container glass
2	0.87 g	brick fragment

Shovel Test 3428 (0-10 cmbs)

1	4.37 g	amethyst (solarized) container glass
1	6.36 g	amethyst (solarized) container glass/undifferentiated base, bottle/jar w/"N"/"PA..." embossing
1	0.49 g	ferrous metal wire nail fragment
1	0.85 g	ferrous metal cut nail fragment
1	1.71 g	brick fragment

Shovel Test 3428 (10-25 cmbs)

1	3.39 g	molded Albany glazed stoneware
1	0.5 g	ferrous metal cut nail fragment

Shovel Test 3429 (10-20 cmbs)

1	31.63 g	Albany glazed stoneware
1	4.16 g	plain whiteware
1	1.52 g	ferrous metal wire nail fragment

Shovel Test 3434 (0-10 cmbs)

	0.34 g	fired clay

Shovel Test 5121 (0-10 cmbs)

1	10.61 g	Bristol glazed stoneware, crock lid handle

Shovel Test 5124 (40-50 cmbs)

1	1.49 g	amethyst (solarized) container glass

Shovel Test 5129 (0-5 cmbs)

1	0.55 g	amethyst (solarized) container glass

The assemblage recovered at 40MD269 consisted of solarized amethyst (n=9), aqua (n=1), cobalt blue (n=1), and amber (n=1) container glass, whiteware (n=2), Albany glazed (n=2) and Bristol glazed (n=1) stoneware, ferrous metal cut (n=2) and wire (n=2) nail fragments, brick fragments (n=2),

and 0.34 g of fired clay. As discussed in the following chapter, the artifacts broadly corresponded to a late nineteenth to mid-twentieth-century occupation, though the assemblage recovered from site 40MD269 cannot be associated with a documented structure. Cut nails were commonly used from the late eighteenth century until the late nineteenth century. Solarized amethyst glass was produced from 1865 until 1920. The majority of artifacts recovered at the site (n=19, 79 percent) were collected from the ground surface or from the first 10 cm of deposits. Another five artifacts were recovered from between 10 and 25 cmbs, and single artifact, a piece of solarized amethyst container glass, was excavated from 40 to 50 cmbs in Shovel Test 5124.

The artifact assemblage, made up largely of architectural and kitchen related grouping artifacts, indicates that a house was once located at the site. Based on available cartographic and aerial imagery the house was likely built after 1877 and torn down by 1947. The assemblage recovered at the site was relatively light (2.6 artifacts per positive test), the materials recovered at the site do not distinguish the assemblage's research potential from other similar sites in the region, and the assemblage was largely confined to a plowzone context, it is the opinion of TVAR that 40MD269 lacks integrity and significant research potential. Accordingly, TVAR recommends that 40MD269 is not eligible for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

40MD270

Site 40MD270 was documented as a 30,333 m^2 historic scatter during TVAR's investigation of the original survey area (Figure 5.37). TVAR revisited the site during the investigation of the additional survey area, resulting in the expansion of 40MD270 to the east and west to encompass 34,234 m^2. Site 40MD270 spanned two low hill tops at the intersection of Womack Lane and Denmark-Jackson Road. The resource is located 140 m southeast of a pond created by impounding an unnamed tributary of Cub Creek. At the time of TVAR's investigations, the site was located in an agricultural field (Figure 5.38).

One structure is depicted in the southeastern boundary of the site on the 1877 map of Madison County, which further indicates that the structure belongs to "N. Perkins" (Figure 5.39). The sparse details available regarding N. Perkins are detailed in Chapter 3. A structure and two associated outbuildings are discernible in approximately the same location on USGS aerial imagery taken in 1947. The structure and the southernmost of the two outbuildings are also depicted on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles. The northern of the two outbuildings is not depicted on these maps, though a second round outbuilding, possibly a silo, is depicted in both maps. Time-lapse of imagery available on Google earth shows that the structure and outbuildings were demolished between 2007 and 2008. The remains of a brick structure and a concrete slab were observed at the location at the time of TVAR's investigation (Figures 5.40 and 5.41). Additionally, a structure and three associated outbuildings are depicted 25 m northwest of 40MD270 on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles (see Figure 5.39). The structure (MD-IP-1) and outbuildings were still extant at the time of TVAR's investigation (Figure 5.42). As discussed in Chapter 4, MD-IP-1 was constructed ca. 1950 and is recommended as ineligible for listing on the NRHP.

Figure 5.37. Map of TVAR's investigations at 40MD270.

Figure 5.38. The location of 40MD270 in an agricultural field (view to the east).

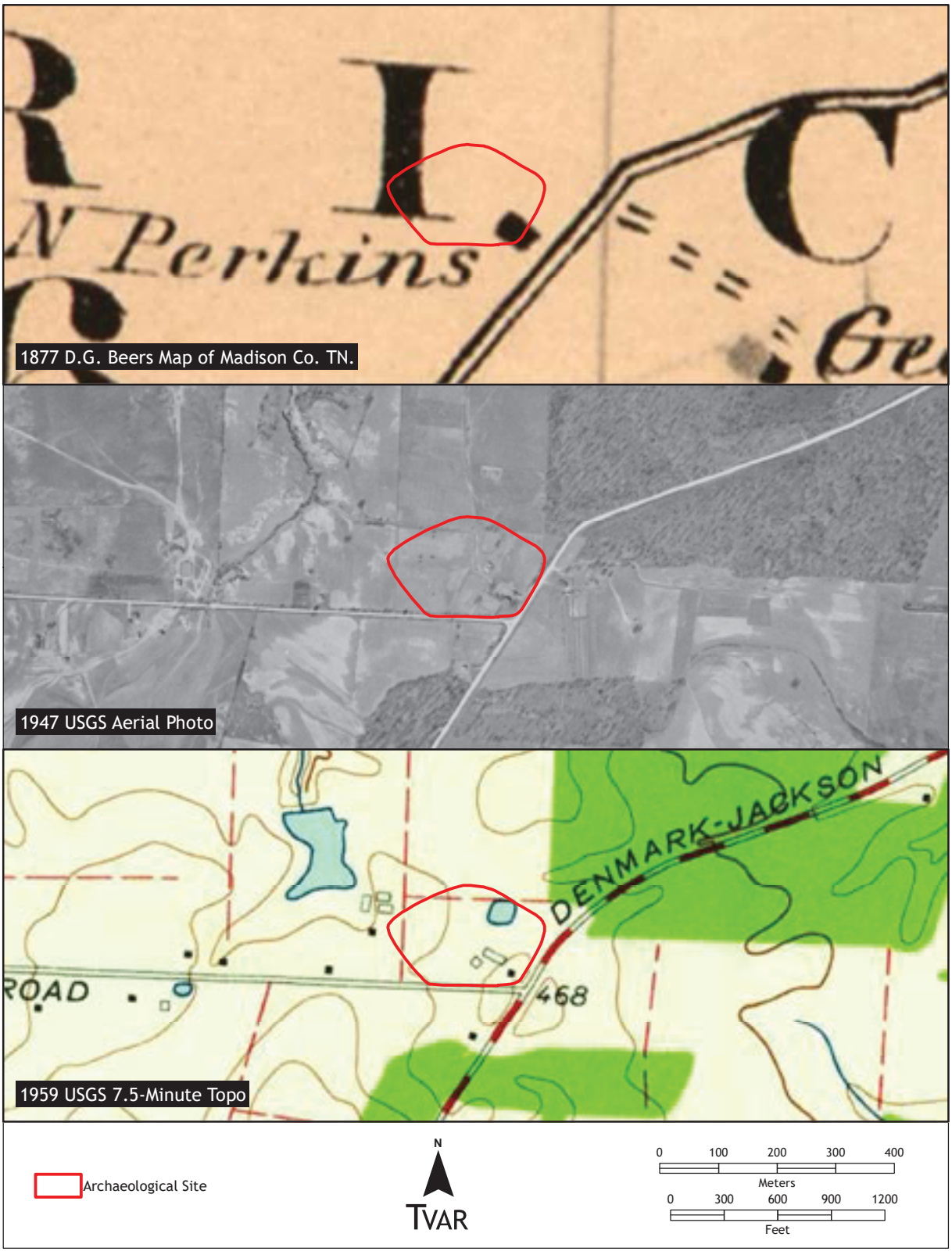

Figure 5.39. Excerpts from historic maps and imagery showing the location of structures within the recorded boundary of 40MD270.

Figure 5.40. Brick foundation and rubble in the location of a structure mapped on 40MD270 (view to the west).

Figure 5.41. Concrete slab attached to brick foundation and rubble in the location of the structure mapped on 40MD270 (view to the east).

Figure 5.42. Farmhouse and outbuildings located immediately northwest of 40MD270 (view to the northwest).

A total of 92 shovel tests were excavated during TVAR's investigation of this site, 38 of which yielded artifacts (n=352) from a maximum depth of 45 cmbs. An additional eight artifacts were collected from the ground surface. Grenada (GrB) and Loring (LoB) silt loams are mapped at the site. Shovel Test 3234 produced a profile representative of those observed throughout the eastern extent of 40MD270 where Loring silt loam was mapped, consisting of a grayish brown (10YR 5/2) silt loam plow zone (0 to 15 cmbs), a mottled pale brown (10YR 6/3) silt loam with mineral concretions (15 to 35 cmbs), and a mottled light gray (10YR 7/2) silty clay loam with mineral concretions (35 to 50 cmbs) (Figure 5.43). Shovel Test 8182 produced a profile representative of those observed in the western extent of 40MD270 where Grenada silt loam was mapped, consisting of a dark grayish brown (10YR 4/2) silt loam plow zone (0 to 7 cmbs), a yellowish brown (10YR 5/4) silty clay loam (7 to 21 cmbs), and a mottled yellowish brown (10YR 5/6) silty clay (21 to 50 cmbs) (Figure 5.44). The artifacts recovered during TVAR's investigation of 40MD270 are listed below.

Figure 5.43. Eastern profile of Shovel Test 3234 on 40MD270.

Figure 5.44. Western profile of Shovel Test 8119 on 40MD270.

Surface Collection Point 4061

1	5.93 g	molded blue Bristol glazed stoneware
1	12.42 g	salt/Albany glazed stoneware, blue painted exterior
1	10.77 g	salt/Albany glazed stoneware
1	26.18 g	Albany glazed stoneware
1	1.04 g	cobalt blue container glass
1	5.12 g	aqua container glass/undifferentiated base, bottle/jar
1	30.05 g	amethyst (solarized) container glass/double ring finish, bottle
1	1.06 g	milk container glass/canning jar lid insert w/"GEN" embossing

Shovel Test 1903 (0-15 cmbs)

2	0.63 g	amethyst (solarized) undifferentiated glass
2	1.78 g	clear container glass
1	0.88 g	ferrous metal wire
2	7.25 g	brick fragment
	0.15 g	carbonized wood

Shovel Test 1903 (15-30 cmbs)

1	0.3 g	aqua container glass
1	25.01 g	clear container glass/brandy finish, bottle
3	10.45 g	ferrous metal wire nail fragment
4	187.71 g	brick fragment

Shovel Test 1904 (0-10 cmbs)

2	2.72 g	plain whiteware
2	4.46 g	brick fragment

Shovel Test 1905 (0-15 cmbs)

1	0.63 g	milk container glass/canning jar lid insert w/"C" embossing
1	0.45 g	clear container glass

Shovel Test 1906 (0-15 cmbs)

1	0.65 g	decal print porcelain vessel fragment, floral design
1	1.79 g	plain ironstone with "royal arms makers mark" maker mark
3	122.37 g	brick fragment

Shovel Test 1908 (0-15 cmbs)

1	0.27 g	clear undifferentiated glass
1	3.02 g	ferrous metal wire nail fragment
1	1.44 g	brick fragment

Shovel Test 1908 (15-30 cmbs)

7	24.04 g	ferrous metal wire nail fragment
1	1.41 g	ferrous metal wire
3	62.03 g	ferrous metal fragment
1	27.2 g	brick fragment

Shovel Test 1908 (30-45 cmbs)

1	3.29 g	ferrous metal wire nail fragment

Shovel Test 1909 (0-15 cmbs)

1	0.16 g	light blue flat glass
1	1.71 g	ferrous metal wire nail fragment
4	4.29 g	brick fragment

Shovel Test 1910 (0-15 cmbs)

1	0.21 g	plain whiteware
1	7.19 g	brick fragment

Shovel Test 1911 (15-30 cmbs)

1	4.36 g	Albany glazed stoneware

Shovel Test 1914 (15-30 cmbs)

1	2.04 g	clear container glass

Shovel Test 1915 (0-10 cmbs)

1	3.51 g	amethyst (solarized) container glass/undifferentiated base, bottle/jar w/"2" embossing
4	134.06 g	brick fragment

Shovel Test 1919 (0-10 cmbs)

1	1.88 g	brick fragment
	0.43 g	fired clay

Shovel Test 1920 (0-15 cmbs)

1	6.61 g	salt/Albany glazed stoneware
1	0.4 g	clear flat glass
1	0.25 g	clear container glass
1	0.7 g	amethyst (solarized) container glass w/"EN..." embossing
1	2.19 g	ferrous metal wire nail fragment
7	7.23 g	brick fragment

Shovel Test 1921 (0-15 cmbs)

1	1.59 g	plain whiteware
1	3.79 g	clear container glass
2	2.7 g	brick fragment

Shovel Test 1923 (0-15 cmbs)

1	0.83 g	blue undifferentiated decorated, undifferentiated white bodied refined earthenware
1	2.08 g	plain undifferentiated white bodied refined earthenware
1	0.48 g	clear undifferentiated glass
2	0.72 g	light green flat glass
1	0.54 g	amethyst (solarized) container glass
1	0.61 g	milk undifferentiated glass
1	2.63 g	ferrous metal cut nail fragment
19	33.82 g	brick fragment
1	0.14 g	coal

Shovel Test 1926 (0-15 cmbs)

1	1.71 g	amethyst (solarized) molded container glass
1	4.94 g	ferrous metal cut nail
1	1.43 g	brick fragment

Shovel Test 1927 (15-30 cmbs)

1	11.91 g	salt/Albany glazed stoneware, incised exterior

Shovel Test 3223 (0-10 cmbs)

1	0.5 g	amber container glass
1	0.51 g	milk container glass/canning jar lid insert
1	9.82 g	light green flat glass
1	4.49 g	clear molded container glass/machine mold seam, bottle/jar
1	1.28 g	cobalt blue molded container glass
1	0.37 g	plastic fragment

Shovel Test 3224 (0-10 cmbs)

1	1.97 g	aqua molded container glass/external thread (large) finish, jar
2	2.1 g	aqua molded container glass/machine mold seam, bottle/jar
1	0.29 g	clear container glass
1	0.25 g	ferrous metal wire
1	2.41 g	brick fragment

Shovel Test 3228 (0-10 cmbs)

1	2.39 g	Albany glazed stoneware

Shovel Test 3229 (0-15 cmbs)

1	7.93 g	aqua container glass/undifferentiated base, bottle/jar

Shovel Test 3230 (0-10 cmbs)

2	7.26 g	brick fragment

Shovel Test 3230 (20-30 cmbs)

1	1.15 g	clear flat glass
1	2.95 g	ferrous metal wire nail fragment
1	1.16 g	brick fragment

Shovel Test 3234 (5-20 cmbs)

1	0.38 g	plain whiteware
1	5.94 g	clear container glass
3	0.71 g	light green undifferentiated glass
1	20.66 g	light green molded container glass/machine mold seam, soda bottle w/"LIM..." embossing
1	0.26 g	clear undifferentiated glass
1	1.83 g	aqua container glass
1	0.92 g	amber container glass
1	0.25 g	ferrous metal fragment
1	0.18 g	ferrous metal wire
5	15.53 g	ferrous metal wire nail fragment
1	0.35 g	shellac record fragment
36	129.27 g	brick fragment

Shovel Test 3235 (0-15 cmbs)

1	1.3 g	plain whiteware
1	1.33 g	plain ironstone
1	1.15 g	clear molded container glass w/undifferentiated embossing

Shovel Test 3239 (0-10 cmbs)

1	3.2 g	plain whiteware
1	5.8 g	amber container glass/machine mold seam/cup bottom base, bottle/jar w/"6 DR."/"28 Armstrong Cork Company maker mark 50"/"U.S.A." embossing

Shovel Test 3241 (5-20 cmbs)

6	9.77 g	brick fragment

Shovel Test 3245 (0-10 cmbs)

1	0.31 g	amethyst (solarized) container glass

Shovel Test 3247 (0-10 cmbs)

1	0.66 g	light blue flat glass
3	12.95 g	ferrous metal wire nail fragment

Shovel Test 3248 (0-10 cmbs)

1	0.92 g	plain whiteware

Shovel Test 3249 (0-10 cmbs)

1	2.71 g	plain whiteware
1	2.25 g	amber container glass
1	0.33 g	clear container glass
1	0.27 g	plastic fragment

Shovel Test 3254 (15-30 cmbs)

1	0.51 g	light green undifferentiated glass
1	0.39 g	ferrous metal cut nail fragment
10	13.86 g	ferrous metal wire nail fragment
48	55.51 g	ferrous sheet metal fragment
30	14.31 g	leather shoe sole fragment with lace holes
1	1490 g	brick fragment, hand-made solid
15	18.67 g	rubber shoe sole fragment, illegible embossing in a diamond

Shovel Test 3255 (20-30 cmbs)

1	0.54 g	light green container glass

Shovel Test 8107 (5-20 cmbs)

3	5.95 g	ferrous metal wire nail fragment
1	2.94 g	cuprous ammunition, 12 gauge shotgun shell head with "1"/"Remington"/"2"/"NEW" headstamp
2	3.15 g	brick fragment

Shovel Test 8107 (25-40 cmbs)

1	0.52 g	clear container glass

Shovel Test 8108 (0-5 cmbs)

1	0.84 g	clear container glass

Shovel Test 8110 (0-15 cmbs)

1	110.35 g	terracotta tile fragment
1	0.1 g	aqua undifferentiated glass
2	11.39 g	ferrous metal wire nail fragment
1	4.66 g	mortar

Shovel Test 8110 (15-30 cmbs)

1	0.67 g	plain whiteware
1	4.92 g	ferrous metal wire nail
1	6.85 g	ferrous metal wire nail fragment

Shovel Test 8115 (5-20 cmbs)

1	0.65 g	clear undifferentiated glass
1	11.85 g	green container glass with stippled design
1	0.12 g	amber container glass/machine mold seam, bottle/jar
3	7.05 g	ferrous metal wire nail fragment
1	4.83 g	brick fragment
1	44.67 g	coal

Shovel Test 8115 (20-30 cmbs)

1	1.16 g	clear container glass w/"...A..."/illegible embossing
3	10.85 g	ferrous metal wire nail fragment

Shovel Test 8119 (5-20 cmbs)

1	0.93 g	clear flat glass
1	1.24 g	clear container glass
8	5.24 g	ferrous metal wire

Shovel Test 8121 (10-20 cmbs)

1	15.08 g	ferrous metal wire nail

Shovel Test 8124 (5-15 cmbs)

2	2.83 g	ferrous metal wire
1	25.19 g	ferrous metal wire nail
1	2.15 g	ferrous metal cut nail
2	5.08 g	ferrous metal barbed wire

The artifacts recovered from 40MD270 were densely distributed (9.3 artifacts per positive test) across a wide areal extent (Figure 5.45). The assemblage recovered during TVAR's investigation of the site consisted of clear (n=16), aqua (n=7), solarized amethyst (n=6), amber (n=5), milk (n=3), light green (n=2), cobalt blue (n=2), and green (n=1) container glass, light green (n=3), clear (n=3), and light blue (n=2) flat glass, light green (n=4), clear (n=4), solarized amethyst (n=2), aqua (n=1), and milk (n=1) undifferentiated glass, whiteware (n=10), stoneware (n=9), ironstone (n=2), undifferentiated white bodied refined earthenware (n=2), porcelain (n=1), terracotta tile fragment (n=1), ferrous metal cut (n=3) and wire nails (n=48), ferrous sheet metal fragments (n=52), ferrous metal wire (n=17), a cuprous 12 gauge shotgun shell head (n=1), brick fragments (n=102), mortar (n=1), coal (n=2), shoe sole fragments (n=45), one shellac record fragment, plastic fragments (n=2), 0.43 g

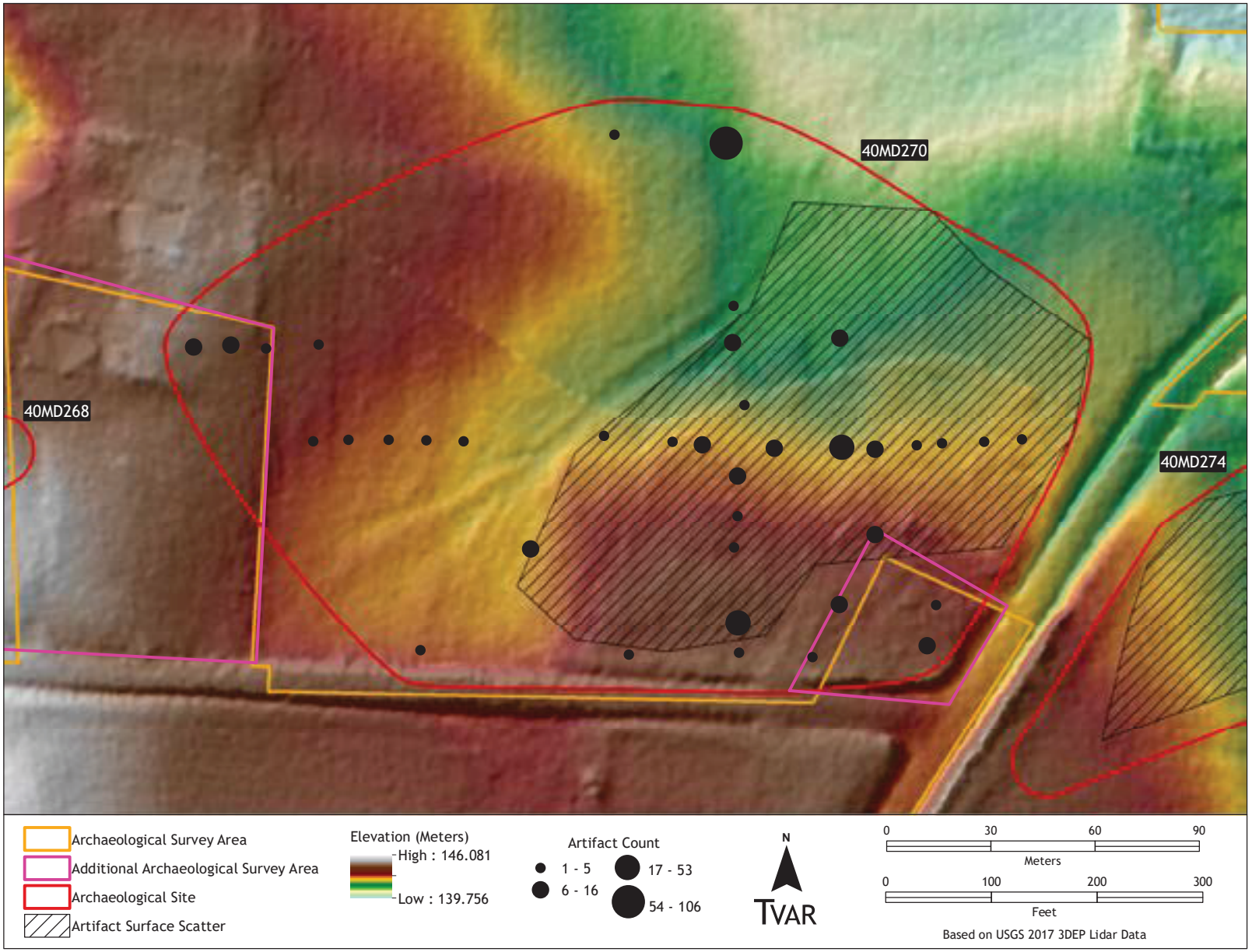

Figure 5.45. Visualization of the density of artifacts recovered during TVAR's investigation of 40MD270 by count.

of fired clay, and 0.15 g of carbonized wood. As discussed in Chapter 6, these artifacts largely represent a mid-nineteenth to mid-twentieth century deposition. This corresponds to at least two different dwellings that are depicted on historic maps. The 1877 Beers map identifies the first as the house site of N. Perkins. Little is known about N. Perkins at this time and this occupation of the site is obscured archaeologically by a later early to mid-nineteenth century occupation of the site. Even so, there are indications within the artifact assemblage of the earlier N. Perkins occupation and with more in depth investigation this house site location could be identified.

Notably, the highest densities of artifacts were recovered from the eastern portion of the site, in proximity to the structures (see Figure 5.45). Cut nails were commonly used from the late eighteenth century until the late nineteenth century. Solarized amethyst glass was produced from 1865 until 1920. Additionally, both mold blown and machine molded glass was recovered at the site, representing specimens produced before and after machine molded glass became dominant in 1910. A significant portion of the assemblage (n=135, 38 percent) was excavated from below the plowzone, indicating that intact subsurface features could be present at the site. Any features identified at the site could provide insights regarding nineteenth century occupation of Madison County. Considering the site is characterized by a dense assemblage associated with the documented mid-to late nineteenth century house site of N. Perkins, it is TVAR's opinion that 40MD270 merits an NRHP status of undetermined and should be avoided. If avoidance is not an option, further investigation of 40MD270 is recommended to better ascertain the site's research potential and eligibility for listing on the NRHP.

40MD271

Site 40MD271, a historic scatter, was identified along a hill immediately north of Womack Lane and 130 m southwest of a pond created by impounding an unnamed tributary of Cub Creek (Figure 5.46). At the time of TVAR's survey, the site occupied an artificially leveled and terraced rise in a grass field (Figures 5.47 and 5.48). Though the field is currently covered by grass, aerial imagery available on Google Earth shows that the field has also been frequently cultivated. A drainage ditch cut across the southeastern extent of the site and ran into a culvert bored under Womack Lane (Figure 5.49).

No structures are depicted in the vicinity of the site on the 1877 map of Madison County. A structure and nearby fenced pen are discernible in the western portion of the site on USGS aerial imagery taken in 1947 (Figure 5.50). The structure is also depicted on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, though the outbuilding is not. An additional structure is depicted in the southeastern extent of the site on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles. No structures are visible at the site in USGS aerial imagery taken in 1997, and no structural remains were observed at the site at the time of the survey.

A total of 35 tests were excavated during TVAR's investigation of the site, 14 of which yielded artifacts (n=205) from a maximum depth of 50 cmbs. The site encompasses 7,406 m^2. Memphis silt loam (MeB) is mapped across the majority of the site, though Lexington silt loam (LeC3) is mapped in the southeastern extent of the site, corresponding to the location of the drainage. Shovel Test 225 produced a profile representative of those observed during testing of 40MD271, consisting of a yel-

Figure 5.46. Map of TVAR's investigations at 40MD271.

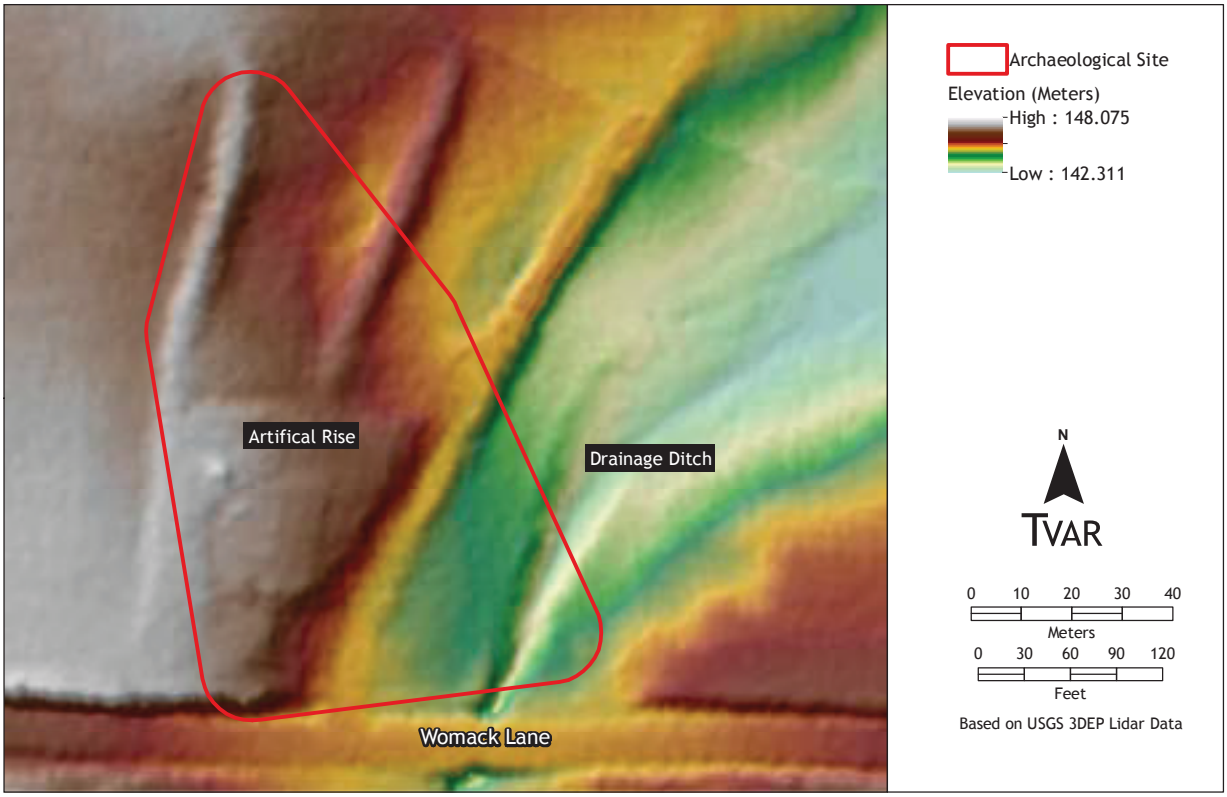

Figure 5.47. Lidar map showing the location of 40MD271 on an artificially leveled rise.

Figure 5.48. The location of a 40MD271 along an artificially flattened rise in a grass field (view to the north).

Figure 5.49. Drainage along the eastern portion of 40MD271, where a structure was mapped in 1959 (view to the north).

Figure 5.50. Excerpts from historic USGS 7.5-minute topographic quadrangles and imagery showing the location of structures within the recorded boundary of 40MD271.

Figure 5.51. Northern profile of Shovel Test 225 on 40MD271.

lowish brown (10YR 5/6) silty clay plowzone (0 to 29 cmbs), a mottled brownish yellow (10YR 6/6) silty clay loam (29 to 43 cmbs), and a mottled very pale brown (10YR 7/3) silt loam (43 to 55 cmbs) (Figure 5.51). Notably, Shovel Test 1886, which was excavated in the mapped location of the western structure, produced a profile consisting of a yellowish brown (10YR 5/6) silty clay loam plowzone (0 to 9 cmbs), a mottled brown (10YR 5/3) silty clay loam (9 to 20), a mottled yellowish brown (10YR 5/6) silty clay loam plowzone (20 to 26 cmbs), and a mottled dark yellowish brown (10YR 4/6) silty clay (26 to 50 cmbs) (Figure 5.52). The second stratum of the test, extending from 9 to 20 cmbs, consisted of a dark soil that produced glass and brick fragments. Considering the location of the test, this stratum likely represents the remnants of a burn pile created during or after the demolition of the structure, which was subsequently flatted and spread by plowing. Artifacts recovered during TVAR's investigation of 40MD271 are listed below.

Figure 5.52. Southern profile of Shovel Test 1886 on 40MD271.

Shovel Test 222 (5-20 cmbs)

1	0.3 g	plain whiteware
1	12.62 g	clear container glass/undifferentiated base, bottle/jar with applied color label
1	28.2 g	clear container glass/undifferentiated base, bottle/jar w/"18 Owens-Illinois Glass Company maker mark 5"/"11"/"C 302" embossing with stippling
2	8.02 g	clear molded container glass
1	3.55 g	clear container glass/undifferentiated base, bottle/jar w/"P..." embossing with stippling
1	4.09 g	clear container glass with stippled design
13	7.1 g	clear container glass
2	2.58 g	amber container glass with stippled design
2	1.24 g	clear container glass with stippling
1	3.15 g	amber container glass w/illegible embossing with stippled design
19	9.27 g	ferrous metal fragment
1	3.87 g	ferrous metal grommet
3	16.13 g	ferrous metal wire nail
29	47.57 g	ferrous sheet metal fragment
1	0.52 g	plastic button, two-hole
2	0.78 g	plastic cap
	0.39 g	fired clay
7	2.3 g	brick fragment
2	0.23 g	plastic fragment

Shovel Test 224 (5-20 cmbs)

1	1.22 g	plain whiteware
1	0.32 g	milk molded container glass

Shovel Test 225 (8-23 cmbs)

1	148.45 g	cuprous lock with latch

Shovel Test 225 (40-50 cmbs)

1	4.01 g	light green molded container glass/machine mold seam, bottle/jar

Shovel Test 248 (15-30 cmbs)

2	2.57 g	clear container glass

Shovel Test 1874 (10-20 cmbs)

1	0.47 g	clear container glass
1	5.84 g	ferrous metal barbed wire

Shovel Test 1878 (5-20 cmbs)

1	4.28 g	clear container glass

Shovel Test 1880 (10-25 cmbs)

1	9.97 g	light green molded container glass
1	0.79 g	clear undifferentiated glass
2	4.84 g	clear container glass with stippled design
3	3.71 g	clear container glass

Shovel Test 1881 (0-15 cmbs)

3	3.7 g	clear container glass
1	2.98 g	clear container glass w/"...H..." embossing

Shovel Test 1885 (5-20 cmbs)

1	3.11 g	polychrome decal print whiteware, floral design
1	0.46 g	light blue milk container glass
1	2.89 g	amber container glass with stippled design
2	7.05 g	clear container glass
1	8.56 g	clear container glass/external thread (large) finish, jar
1	6.06 g	clear undifferentiated glass
1	6.56 g	ferrous metal fragment
1	2.56 g	ferrous metal wire nail

Shovel Test 1886 (5-20 cmbs)

1	0.25 g	clear container glass
1	0.47 g	clear molded container glass
3	0.64 g	clear undifferentiated glass
29	44.97 g	light green flat glass
9	11.95 g	brick fragment

Shovel Test 1887 (0-15 cmbs)

1	3.47 g	green hand-painted whiteware
1	3.05 g	clear molded container glass
1	1.24 g	clear container glass/external thread (large) finish, jar

Shovel Test 1887 (15-30 cmbs)

2	1.31 g	clear container glass
1	0.48 g	light green undifferentiated glass
1	2.25 g	ferrous metal wire nail
1	0.93 g	ferrous metal wire nail fragment

Shovel Test 1888 (0-15 cmbs)

1	0.91 g	light green container glass
14	6.44 g	clear container glass
1	0.05 g	clear undifferentiated glass
4	44.04 g	ferrous metal clothing iron fragment
1	0.26 g	plastic bottle fragment with small external thread finish

Shovel Test 3173 (5-15 cmbs)

1	1.21 g	amber container glass
1	0.78 g	clear container glass
1	1.68 g	clear molded container glass

Shovel Test 3174 (0-15 cmbs)

1	2.56 g	light green container glass
1	0.95 g	amber molded container glass/machine mold seam, bottle/jar
4	3.88 g	clear container glass
1	0.36 g	light green undifferentiated glass
1	22.37 g	ferrous metal wire nail
2	11.64 g	ferrous metal wire nail fragment
1	1.12 g	plastic cap

The historic assemblage recovered during TVAR's investigation of the site consisted of clear (n=63), amber (n=6), light green (n=4), and milk (n=2) container glass, light green flat glass (n=29), light green (n=3) and clear (n=3) undifferentiated glass, whiteware (n=4), ferrous metal fragments (n=20), ferrous sheet metal fragments (n=29), ferrous metal grommet (n=1), ferrous metal clothing iron fragments (n=4), ferrous metal wire nails (n=9), ferrous metal barbed wire (n=1) one cuprous lock with a latch, brick fragments (n=16), plastic fragments (n=7), and 0.39 g of fired clay. As discussed in Chapter 6, these artifacts largely represent a twentieth century deposition, consistent with the structure constructed in the southeastern portion of the site prior to 1947 and razed between 1981 and 1997 and the structure built in the southwestern extent of the resource between 1947 and 1959 and demolished between 1981 and 1997.

A large portion of the assemblage (n=89, 43 percent) of the artifacts recovered at the site were excavated from Shovel Test 222, which was dug immediately north of the structure mapped in the southeastern portion of 40MD271. Most of the assemblage (n=204) was excavated from the first 30 cm of deposits, which were disturbed by plowing at the site and the razing of multiple structures. A single artifact, a fragment of light green container glass, was recovered from 40 to 50 cmbs in Shovel Test 225. As the materials recovered at the site do not distinguish the assemblage's research potential from other similar sites in the region and were largely confined to disturbed contexts, it is the opinion

of TVAR that 40MD271 lacks integrity and significant research potential. Accordingly, TVAR recommends that 40MD271 is not eligible for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

40MD272

Site 40MD272, a Woodland artifact scatter with a historic isolate, was identified in a corn field along the crest of a large hill (Figures 5.53 and 5.54). The site is located 285 m east of an unnamed tributary of Cub Creek. The site is partially situated within the existing TVA Morris 161-kV Transmission Line, but was not previously identified (McKee and Karpynec 2010). During the initial visit to this location by TVAR surface visibility was excellent (approximately 50 percent visibility).

A total of 30 tests were excavated during TVAR's investigation of this site, one of which yielded one piece of mortar from 0 to 5 cmbs. An additional 17 artifacts were collected from the ground surface as a representative sample of the artifacts observed, and the site's boundary represents the areal extent of the observed surface scatter. The site encompasses 4,571 m^2. Loring silt loam (LoB3) is mapped across the site. Shovel Test 5080 produced a profile representative of those observed during the testing of 40MD272, consisting of a weak red (10YR 5/4) silty clay loam plow zone (0 to 19 cmbs) underlain by a red (10YR 4/6) silty clay (19 to 50 cmbs) (Figure 5.55). The artifacts recovered during TVAR's investigation of 40MD272 are listed below.

Surface Collection Point 5008
- 3 9.97 g Baytown Plain
- 1 16.18 g 1/2-inch debitage with possible unifacial retouch, St. Louis chert
- 1 15.21 g core, Fort Payne chert

Surface Collection Point 5009
- 1 47.4 g lead/manganese glazed terracotta drainage pipe fragment

Surface Collection Point 5010
- 1 1.69 g coarse grog-tempered sherdlet

Surface Collection Point 5011
- 1 6.7 g uniface, Fort Payne chert
- 1 5.55 g uniface, St. Louis chert
- 1 0.24 g 1/4-inch debitage, St. Louis chert

Surface Collection Point 5012
- 1 3.44 g coarse grog/coarse sand-tempered eroded
- 1 2.61 g coarse grog/fine sand-tempered eroded
- 1 11.18 g coarse sand-tempered eroded, rim
- 1 2.53 g 1/2-inch debitage, Citronelle gravel chert, cortex

Surface Collection Point 5013
- 1 2.95 g Baytown Plain
- 1 2.81 g coarse grog/coarse sand-tempered eroded
- 1 0.36 g sherdlet

Shovel Test 562 (0-5 cmbs)
- 1 3.24 g mortar

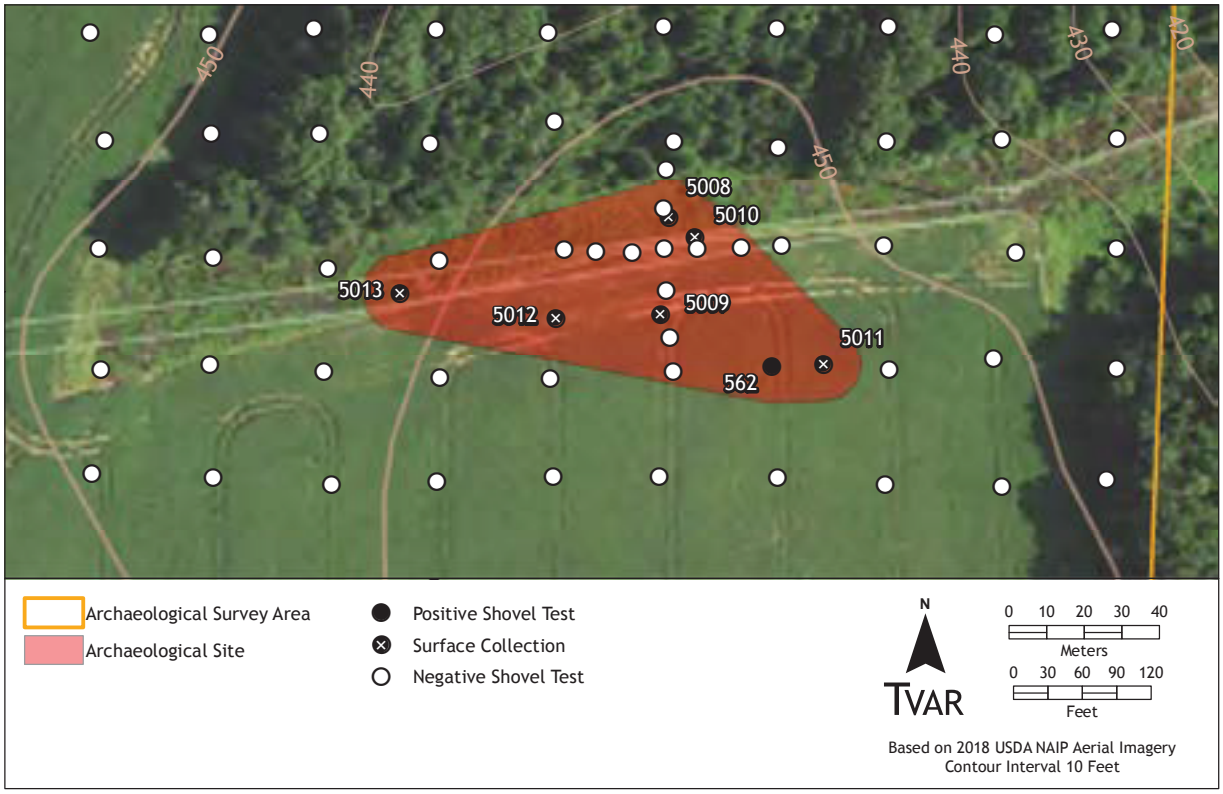

Figure 5.53. Map of TVAR's investigations at 40MD272.

Figure 5.54. The location of 40MD272 in a corn field (view to the west).

Figure 5.55. Western profile of Shovel Test 5080 on 40MD272.

The historic isolate at the site consisted of a piece of mortar and a terracotta pipe fragment. No structures were mapped in the vicinity of the resource on any available cartographic resource. The terracotta pipe fragment is likely associated with twentieth-century efforts to drain water off agricultural fields. Due to artifact paucity TVAR recommends that the historic isolate on 40MD272 offers little research potential beyond the findings of the Phase I survey and does not contribute to the site's overall NRHP eligibility.

The Native American ceramic assemblage consisted of Baytown Plain (n=4), coarse grog/coarse sand-tempered eroded (n=2), coarse grog/fine sand-tempered eroded (n=1), coarse sand-tempered (n=1), coarse grog-tempered sherdlet (n=1), and one sherdlet. As further discussed in the following chapter, the ceramic assemblage is likely indicative of a Madison Series Middle Woodland occupation of the site, possibly representing a single Native American component. The lithic assemblage consisted of debitage produced from St. Louis (n=2) and Citronelle gravel (n=1) chert, a core produced from Fort Payne chert, and unifaces produced from Fort Payne (n=1) and St. Louis (n=1) chert. Though the assemblage was recovered from the ground surface, the amount of pottery sherds recovered from the site indicates that 40MD272 may correlate to a sustained and/or repeatedly visited Native American occupation that could result in the formation of subsurface features. Such features might include the remains a house patterns, storage pits, and hearth's. Additionally, it is also possible that several burials might be present at the site. Though likely truncated by the plowing noted at the site, such cultural features could contribute significant information to research concerning

Middle Woodland occupation of Madison County. While small, the artifact assemblage from the site suggests a Middle Woodland occupation. These artifacts include pottery with clay bodies containing grog and sand and a varied assemblage of lithic raw materials (Mainfort 1994:15-16). This occupation could be contemporaneous with activities at the nearby Pinson Mounds and would therefore enhance the limited information currently available about settlement patterning associated with the this large ceremonial center. Consequently, TVAR recommends that 40MD272 merits an NRHP status of undetermined and should be avoided. If avoidance is not an option, further investigation 40MD272 is recommended to better ascertain the site's research potential and eligibility for listing on the NRHP.

40MD273

Site 40MD273, a Woodland artifact scatter with a minor historic component, was identified in a soy field on a low hill (Figures 5.56 and 5.57). The site is located 285 m east of an unnamed tributary of Cub Creek. During the initial visit to this location by TVAR surface visibility was excellent (approximately 60 percent visibility). A total of 17 tests were excavated during TVAR's investigation of this site, two of which yielded artifacts (n=7) from the first 10 cm of deposits. An additional 48 artifacts were collected from the ground surface as a representative sample of artifacts observed there, and the site's boundary includes the areal extent of the observed surface scatter. The site encompasses 1,477 m^2. Memphis silt loam (MeB) is mapped across the site. Shovel Test 7549 produced a profile representative of those observed during the testing of 40MD273, consisting of a pale red (10YR 6/4) silt loam plow zone (0 to 13 cmbs), over a brown (7.5YR 5/4) silty clay loam (13 to 19 cmbs), underlain by brown (7.5YR 4/4) silty clay loam (19 to 57 cmbs) (Figure 5.58). The artifacts recovered during TVAR's investigation of 40MD273 are listed below.

Surface Collection Point 4001

1	1.08 g	1/4-inch debitage, undifferentiated chert

Surface Collection Point 6800

5	17.58 g	Baytown Plain
2	6.23 g	Withers Fabric Marked
30	39.23 g	sherdlet
1	2.45 g	coarse grog-tempered possible fabric marked
3	7.85 g	coarse grog-tempered eroded
1	1.11 g	1/4-inch debitage, undifferentiated chert
2	1.93 g	1/4-inch debitage, Citronelle gravel chert
1	0.04 g	<1/4-inch debitage, Fort Payne chert
1	0.13 g	<1/4-inch debitage, Citronelle gravel chert
1	0.98 g	brick fragment

Shovel Test 3092 (0-10 cmbs)

1	2.5 g	salt glazed stoneware
3	8.29 g	brick fragment

Shovel Test 7549 (0-10 cmbs)

3	1.96 g	sherdlet

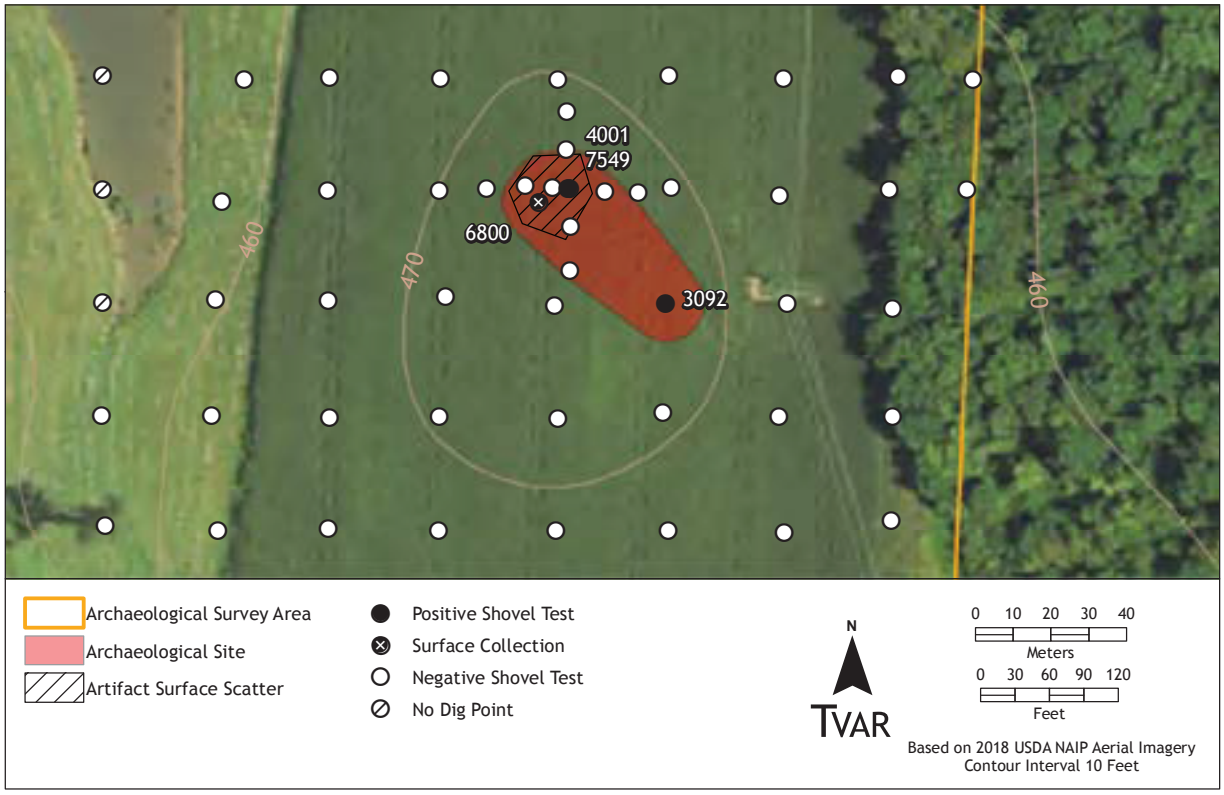

Figure 5.56. Map of TVAR's investigations at 40MD273.

Figure 5.57. The location of 40MD273 in a soy field (view to the north).

Figure 5.58. Southern profile of Shovel Test 7549 on 40MD273.

The historic component at the site consisted of one fragment of salt glazed stoneware and brick fragments (n=4). No structures were mapped in the vicinity of the resource on any available cartographic resource. The fragment of stoneware and three brick fragments were recovered from the first 10 cmbs of Shovel Test 3092 in the southwestern portion of the site. Considering that the test produced artifacts representative of wide periods of manufacture and use and that no structures are located near the resource, no additional delineation tests were conducted in this portion of the site. However, the site's surface was intensively inspected. Due to artifact paucity and lack of historic context, TVAR recommends that the historic component at 40MD273 offers little research potential beyond the findings of the Phase I survey and does not contribute to the site's overall NRHP eligibility.

The Native American ceramic assemblage consisted of Baytown Plain (n=5), Withers Fabric Marked (n=2), coarse grog-tempered eroded (n=3), coarse grog-tempered possible fabric marked (n=1), and sherdlets (n=33). As further discussed in the following chapter, the ceramic assemblage is likely indicative of a Madison Series Middle Woodland occupation of the site, possibly representing a single Native American component. The lithic assemblage consisted of debitage produced from

Citronelle gravel (n=3), Fort Payne (n=1) and undifferentiated (n=2) chert. Though most of the assemblage was recovered from the ground surface, the amount of pottery sherds recovered from the site indicates that 40MD273 may correlate to a sustained and/or repeatedly visited Native American occupation that could result in the formation of subsurface features. Such features might include the remains a house patterns, storage pits, and hearth's. Additionally, it is also possible that several burials might be present at the site. Though likely truncated by the plowing noted at the site, such cultural features could contribute significant information to research concerning Middle Woodland occupation of Madison County. While small, the artifact assemblage from the site suggests a possible Middle Woodland occupation. These artifacts include pottery with clay bodies containing grog and fabric marked surface impressions (Mainfort 1994:15-16). This occupation could be contemporaneous with activities at the nearby Pinson Mounds and would therefore enhance the limited information currently available about settlement patterning associated with the this large ceremonial center. Consequently, TVAR recommends that 40MD273 merits an NRHP status of undetermined and should be avoided. If avoidance is not an option, further investigation of 40MD273 is recommended to better ascertain the site's research potential and eligibility for listing on the NRHP.

40MD274

Site 40MD274, a historic scatter, was identified along a hill immediately east of the intersection of Womack Lane and Denmark-Jackson Road. The resource is located 332 m west of an unnamed tributary of Johnson Creek (Figure 5.59). At the time of TVAR's survey, the site was located in an agricultural field (Figure 5.60). A gravel road, which has been present since at least 1947, intersected the northern extent of the site (Figures 5.61 and 5.62) No structures are depicted within the site on the 1877 map of Madison County. A structure is discernible in the northern portion of the site on USGS aerial imagery taken in 1947 (see Figure 5.61). The structure is not depicted on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, and no structural remains were observed at the site at the time of the survey.

A total of 30 tests were excavated during TVAR's investigation of the site, 14 of which yielded artifacts (n=41) from a maximum depth of 50 cmbs. Two additional artifacts were collected from the ground surface. The site was delineated to the south, east, and west; however, due to the constraints of the survey area, the full extent of 40MD274 could not be fully defined during the current investigation. The identified portion of the site within the survey area encompasses 8,160 m^2. Loring (LoB) and Calhoun (Ca) silt loams are mapped at the site. Shovel Test 1000 produced a profile representative of those observed during testing of 40MD274, consisting of a dark yellowish brown (10YR 4/4) silty clay loam plowzone (0 to 22 cmbs) and a mottled light yellowish brown (10YR 6/4) silty clay (22 to 62 cmbs) (Figure 5.63). Artifacts recovered during TVAR's investigation of 40MD274 are listed below.

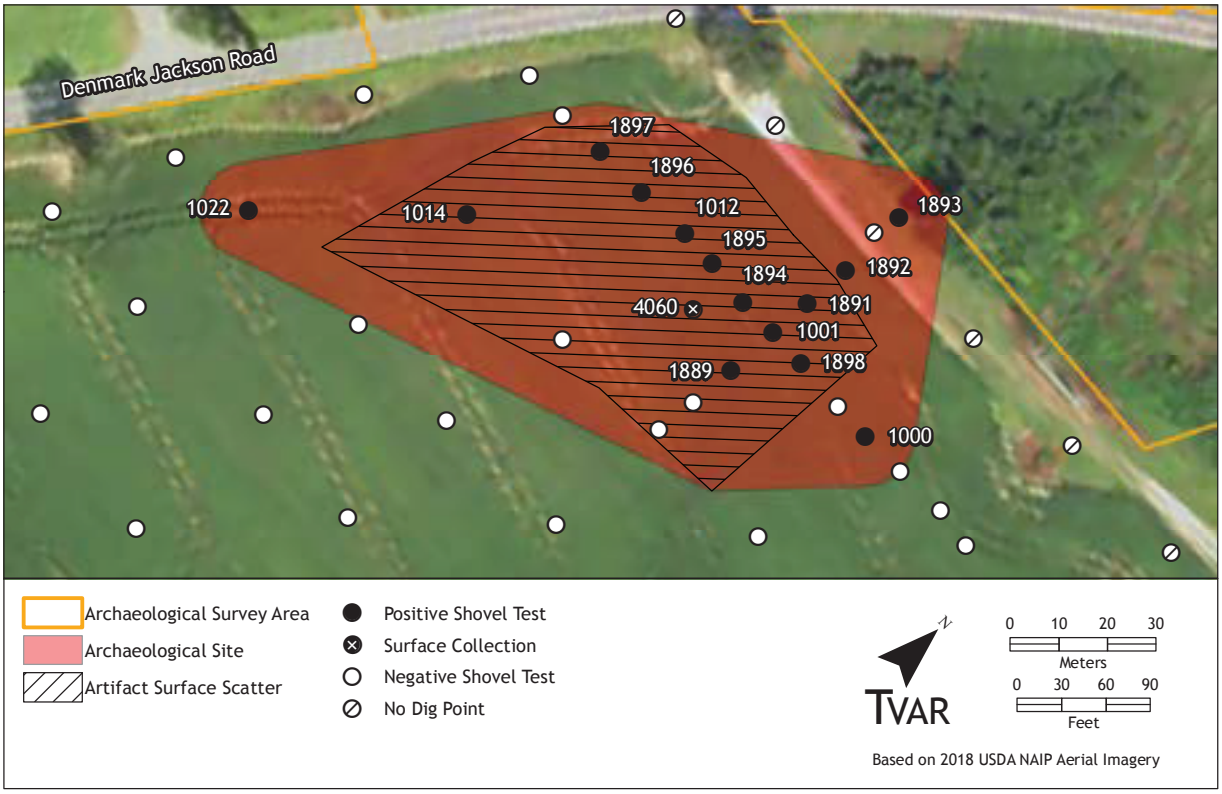

Figure 5.59. Map of TVAR's investigations at 40MD274.

Figure 5.60. The location of 40MD274 in an agricultural field (view to the east).

Figure 5.61. Excerpts from historic USGS 7.5-minute topographic quadrangles and imagery showing the location of structures within the recorded boundary of 40MD274.

Figure 5.62. Gravel road in the northern extent of 40MD274 (view to the south).

Figure 5.63. Eastern profile of Shovel Test 1000 on 40MD274.

Surface Collection Point 4060

1	0.92 g	plain whiteware with “Homer-Laughlin maker mark” maker mark
1	49.51 g	aqua insulator glass

Shovel Test 1000 (0-15 cmbs)

1	3.99 g	clear undifferentiated glass
1	1.12 g	clear molded container glass
2	1.3 g	clear container glass
1	5.13 g	cobalt blue container glass/machine mold seam/cup bottom base, bottle/jar w/”VA…”/”Vicks Vaporub maker mark” embossing
1	1.11 g	ferrous metal fragment

Shovel Test 1001 (35-50 cmbs)

1	1.6 g	clear container glass/machine mold seam, bottle/jar

Shovel Test 1012 (0-18 cmbs)

1	2.1 g	aqua container glass
1	1.37 g	clear container glass

Shovel Test 1014 (15-30 cmbs)

1	2.38 g	clear container glass

Shovel Test 1022 (0-10 cmbs)

1	34.51 g	brick fragment

Shovel Test 1889 (30-40 cmbs)

1	2.32 g	milk container glass/canning jar lid insert w/”…ARS” embossing

Shovel Test 1891 (0-15 cmbs)

1	1.3 g	plain whiteware
1	0.41 g	milk container glass/canning jar lid insert w/”CA” embossing
1	9.03 g	clear container glass/machine mold seam/external thread (large) finish, jar
3	3.42 g	clear container glass
1	12.89 g	brick fragment

Shovel Test 1892 (15-30 cmbs)

1	1.35 g	clear pressed glass, tableware

Shovel Test 1893 (0-15 cmbs)

1	1.16 g	decal print whiteware, floral design
1	6.4 g	ferrous metal wire nail
1	6.31 g	ferrous metal fragment

Shovel Test 1894 (15-30 cmbs)

1	5.52 g	buff colored porcelain vessel fragment
4	8.61 g	clear container glass
1	0.84 g	clear container glass w/undifferentiated embossing
1	7.11 g	clear container glass/external thread (large) finish, jar
1	2.55 g	clear molded container glass
1	3.24 g	ferrous metal wire nail

Shovel Test 1895 (0-15 cmbs)

4	3.12 g	clear container glass
1	1.22 g	ferrous metal wire nail fragment

Shovel Test 1896 (0-15 cmbs)

1	0.62 g	clear container glass
1	0.96 g	clear container glass/machine mold seam, bottle/jar

Shovel Test 1897 (10-20 cmbs)

1	5.64 g	clear molded container glass

Shovel Test 1898 (25-40 cmbs)

1	0.39 g	clear container glass/machine mold seam, bottle/jar

The assemblage recovered at the site included clear (n=25), milk (n=2), aqua (n=1), and cobalt blue (n=1) container glass, clear pressed glass tableware (n=1), clear undifferentiated glass (n=1), aqua insulator glass (n=1), whiteware (n=3), porcelain (n=1), ferrous metal fragments (n=2), ferrous metal wire nails (n=3), and brick fragments (n=2). As further detailed in the following chapter, these artifacts largely represent a twentieth century site occupation, consistent with the structure constructed in the northern portion of the site prior to 1947 and razed between 1947 and 1959 (Figure 5.64). Most of the assemblage (n=40, 93 percent) was recovered from the ground surface or confined to the plowzone at the site. As the materials recovered at the site do not distinguish the assemblage's research potential from other similar sites in the region and were largely confined to contexts disturbed by plowing and the demolition of a structure, it is the opinion of TVAR that the identified portion of 40MD274 lacks integrity and significant research potential. Accordingly, TVAR recommends that the identified portion of 40MD274 would not contribute to the site's overall eligibility for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

40MD275

Site 40MD275, a lithic scatter, was identified in a shallow wash that drains into an unnamed tributary of Johnson Creek 30 m to the southeast (Figures 5.64 and 5.65). At the time of TVAR's survey, the site was located in a corn field (Figure 5.66). Surface visibility was clear beneath the corn, and a scatter of debitage was observed across the site's surface.

A total of 15 tests were excavated during TVAR's investigation of this site, one of which yielded artifacts (n=10) from a maximum depth of 20 cmbs. An additional nine artifacts were recovered as a sample of the debitage seen across the site's surface. The site encompasses 1,302 m^2, which includes the full areal extent of the artifact scatter observed at the site. Notably, the boundary of site 40MD275 intersects the northern boundary of NSCR 3. It was determined that the two assemblages should be considered separate resources due to the distinct concentrations of lithic and historic artifacts recovered from the respective scatters. Memphis (MeB2) and Lexington (LeC3) silt loams are mapped at the site. Shovel Test 1572 produced a profile representative of those observed during testing of 40MD275, consisting of a pale brown (10YR 6/3) silty clay loam plow zone (0 to 35 cmbs), over a light yellowish brown (10YR 6/4) silty clay loam (35 to 43), underlain by yellowish brown (10YR 5/4) silty

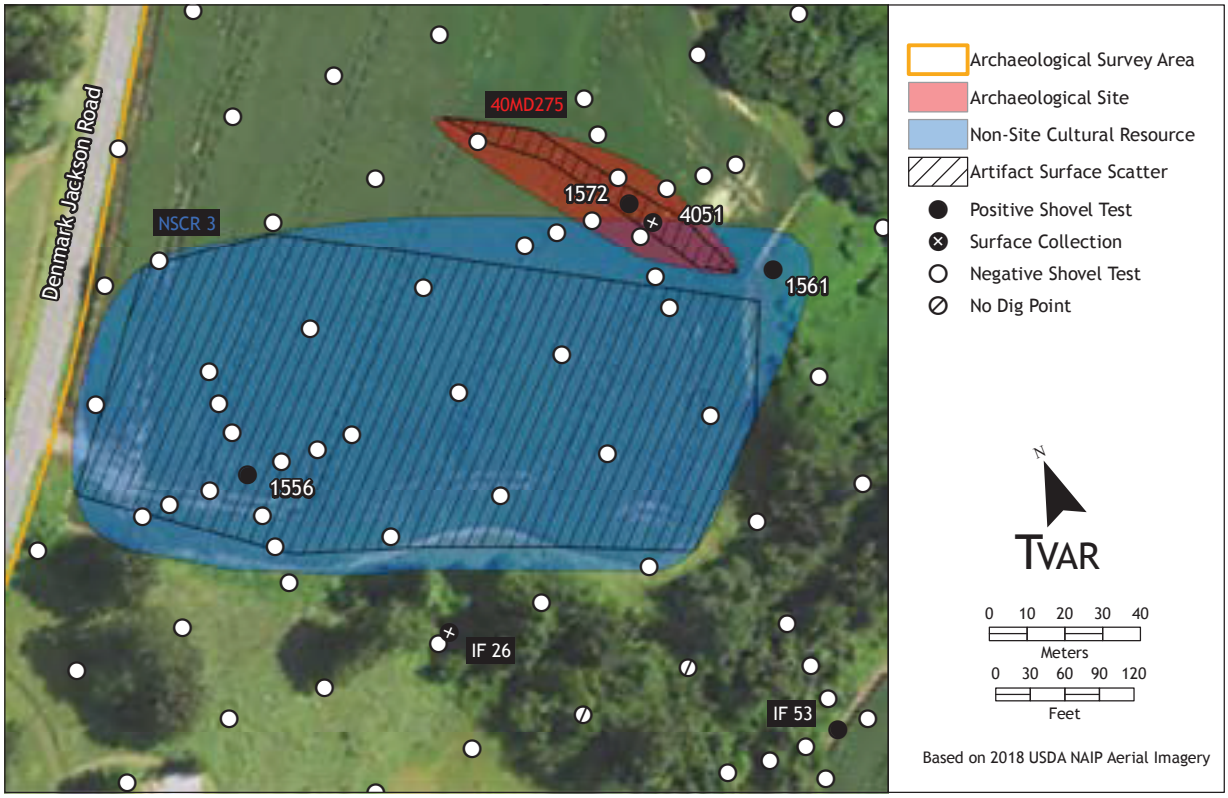

Figure 5.64. Map of TVAR's investigations at 40MD275 and NSCR 3.

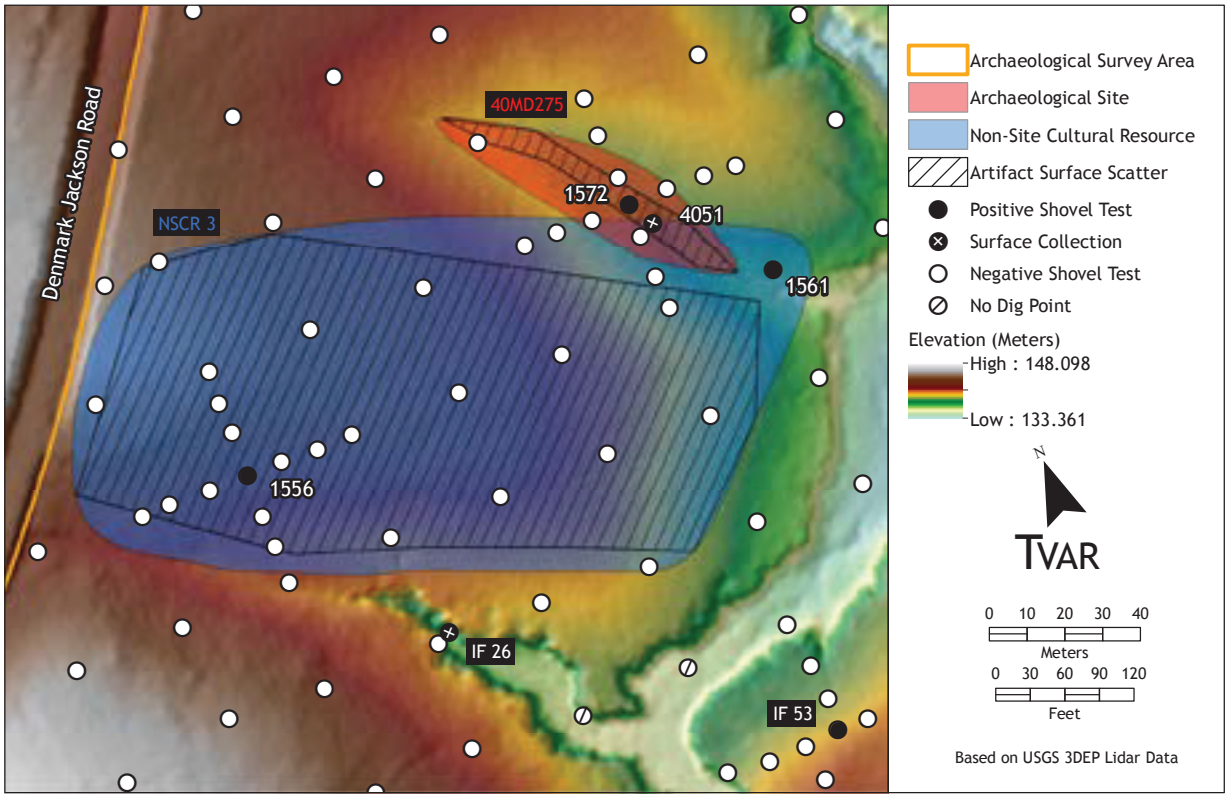

Figure 5.65. Lidar map of TVAR's investigations at NSCR 3 and 40MD275.

Figure 5.66. The location of 40MD275 in shallow wash in a corn field (view to the southeast).

clay with mineral concretions (43 to 70 cmbs) (Figure 5.67). The artifacts recovered during TVAR's investigation of 40MD275 are listed below.

Surface Collection Point 4051

4	134.14 g 1-inch debitage, undifferentiated chert, cortex
1	13.34 g 1/2-inch debitage, undifferentiated chert
3	16.91 g 1/2-inch debitage, undifferentiated chert, cortex
1	0.49 g 1/4-inch debitage, undifferentiated chert

Shovel Test 1572 (0-10 cmbs)

5	73.58 g 1/2-inch debitage, undifferentiated chert, cortex
1	19.4 g 1-inch debitage, undifferentiated chert, cortex
1	47.64 g 1-inch debitage, undifferentiated chert, cortex, blocky debris

Shovel Test 1572 (10-20 cmbs)

3	14.89 g 1/2-inch debitage, undifferentiated chert, cortex, blocky debris

The assemblage recovered from 40MD275 consisted of debitage produced from undifferentiated chert (n=19) collected from the ground surface or shallowly deposited within a plowzone in a single test. Considering the paucity of artifacts, lack of diagnostic tools, and limited horizontal distribution of artifacts, TVAR recommends that the identified portion of the site is not eligible for listing on the NRHP. No further investigations of site 40MD275 are recommended in connection with the proposed project.

Figure 5.67. Southeastern profile of Shovel Test 1572 on 40MD275.

40MD276

Site 40MD276, a Woodland artifact scatter, was identified on a hill top flanked by unnamed tributaries of Johnson Creek 20 n to the northwest and 40 m to the southeast, respectively (Figures 5.68 and 5.69). At the time of TVAR's investigation, the site was situated in a corn field (Figure 5.70). During the initial visit to this location by TVAR surface visibility was excellent (approximately 60 percent visibility). A concrete slab was located along the edge of the cornfield on the southwestern boundary of 40MD276 (Figure 5.71). The slab was partially covered by soil washed over its surface from the surrounding corn field during wet weather. Two 4-inch square post holes were molded into the visible portion of the slab (Figure 5.72). No structures are visible in the vicinity of the resource on any available cartographic resource or aerial image, and no historic artifacts were recovered at the site. The concrete slab was likely associated with an agricultural outbuilding, though it cannot be assigned a temporal affiliation, due to the lack of cartographic context or diagnostic artifacts.

A total of 30 tests were excavated during TVAR's investigation of this site, two of which yielded artifacts (n=6) from a maximum depth of 15 cmbs. An additional eight artifacts were collected from the ground surface as a representative sample of the artifacts observed, and the site's boundary represents the areal extent of the observed surface scatter. The site encompasses 3,970 m^2. Memphis silt loam (MeB2) is mapped across the site. Shovel Test 1657 produced a profile representative of those observed during the testing of 40MD276, consisting of a dark yellowish brown (10YR 3/4) silty clay loam (0 to 22 cmbs) underlain by a dark yellowish brown (10YR 3/6) silty clay (22 to 50 cmbs) (Figure 5.73). The artifacts recovered during TVAR's investigation of 40MD276 are listed below.

Figure 5.68. Map of TVAR's investigations at 40MD276.

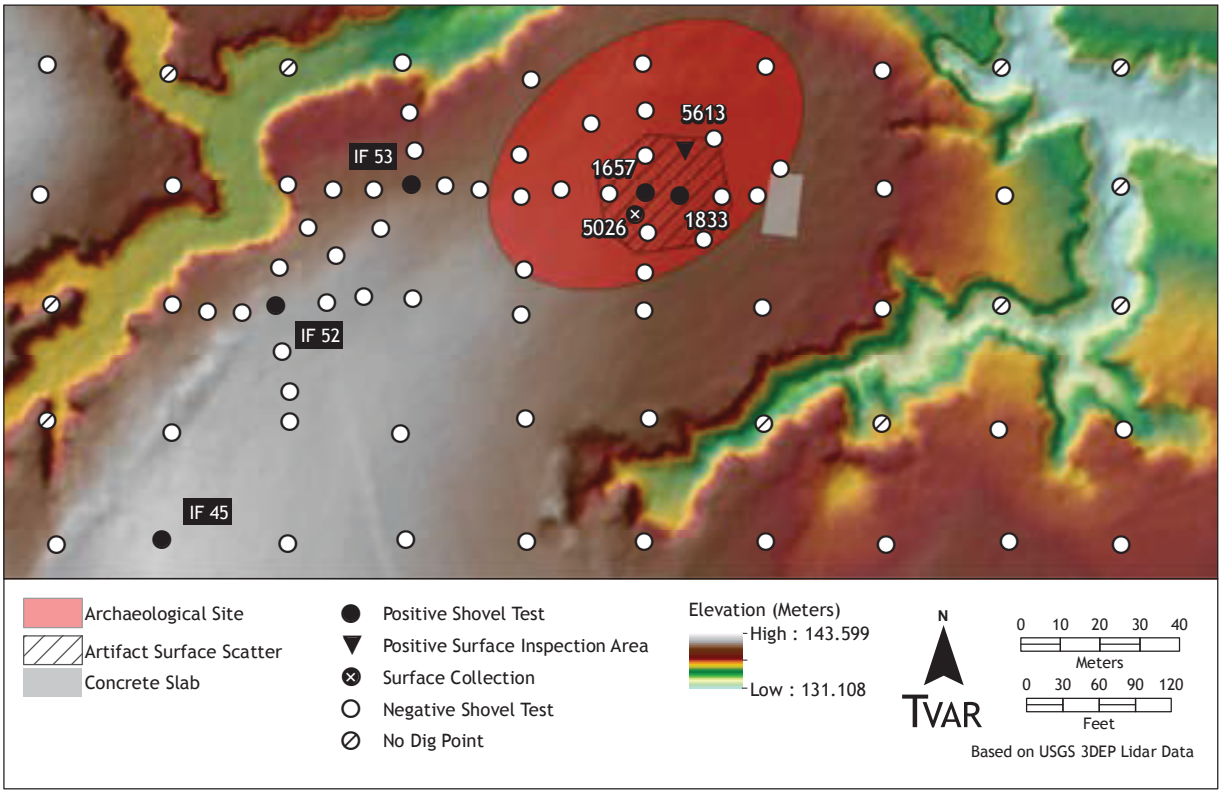

Figure 5.69. Lidar of TVAR's investigations at 40MD276.

Figure 5.70. The location 40MD276 in a corn field (view to the southwest).

Figure 5.71. Concrete slab along the southwestern boundary of 40MD276 in a corn field (view to the north).

Figure 5.72. Square post holes molded into the concrete slab along the southwestern boundary of 40MD276 in a corn field (view to the north).

Figure 5.73. Southwestern profile of Shovel Test 1657 on 40MD276.

Surface Collection Point 5026

1	6.63 g	coarse grog/coarse sand-tempered eroded
2	5.21 g	Baytown Plain
1	33.47 g	Biface I, Citronelle gravel chert

Surface Inspection Area 5613

1	3.07 g	grog-tempered eroded
2	15.06 g	1/2-inch debitage, Fort Payne chert, cortex
1	0.17 g	unmodified slate

Shovel Test 1657 (0-10 cmbs)

2	2.98 g	coarse grog-tempered sherdlet
1	3.42 g	1/2-inch debitage, Citronelle gravel chert, cortex

Shovel Test 1833 (0-15 cmbs)

1	4.76 g	coarse grog/coarse sand-tempered eroded

The Native American ceramic assemblage consisted of Baytown Plain (n=2), coarse grog-tempered eroded (n=1), coarse grog/coarse sand-tempered eroded (n=2), and coarse grog-tempered sherdlets (n=2). As further discussed in the following chapter, the ceramic assemblage is likely indicative of a Madison Series Middle Woodland occupation of the site, possibly representing a single Native American component. The lithic assemblage consisted of a Biface I produced from Citronelle gravel chert, debitage produced from Citronelle gravel (n=1) and Fort Payne (n=1) chert. Though the assemblage was largely recovered from the ground surface, the pottery sherds recovered from the site indicates that 40MD276 may correlate to a sustained and/or repeatedly visited Native American occupation that could result in the formation of subsurface features. Such features might include the remains a house patterns, storage pits, and hearth's. Additionally, it is also possible that several burials might be present at the site. Though likely truncated by the plowing noted at the site, such cultural features could contribute significant information to research concerning Middle Woodland occupation of Madison County. While small, the artifact assemblage from the sites suggests a possible Middle Woodland occupation. These artifacts include pottery with clay bodies containing grog and sand and a varied assemblage of lithic raw materials (Mainfort 1994:15-16). This occupation could be contemporaneous with activities at the nearby Pinson Mounds and would therefore enhance the limited information currently available about settlement patterning associated with the this large ceremonial center. Consequently, TVAR recommends that 40MD276 merits an NRHP status of undetermined and should be avoided. If avoidance is not an option, further investigation 40MD276 is recommended to better ascertain the site's research potential and eligibility for listing on the NRHP.

40MD277

Site 40MD277, a historic scatter, was identified on a hill slope adjacent to Womack Lane and 253 m southwest of a pond created by impounding an unnamed tributary of Cub Creek (Figure 5.74). At the time of TVAR's investigation, the site was located in a harvested wheat field that had been recently replanted with soy (Figure 5.75). No structures are depicted in the vicinity of the site on the 1877 map of Madison County. Historic USGS aerial imagery taken in 1947 shows a structure

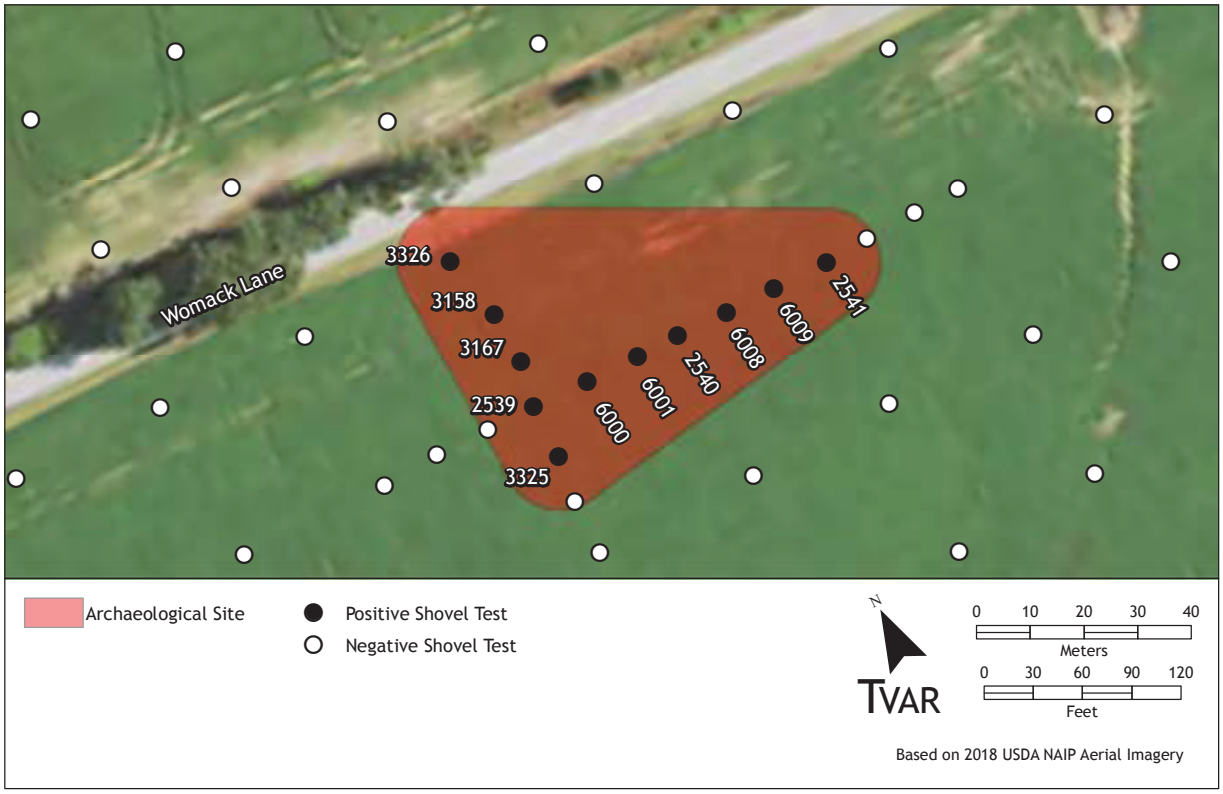

Figure 5.74. Map of TVAR's investigations at 40MD277.

Figure 5.75. The location of 40MD277 in an agricultural field with Womack Lane visible in the background (view to the north).

Figure 5.76. Eastern profile of Shovel Test 2540 on 40MD277.

and an associated outbuilding in the northwestern extent of the site and a second outbuilding in the southeastern extent of the site. The outbuilding seen in the northwestern portion of the site was not depicted on the USGS 1959 Westover 7.5-minute topographic quadrangle, though both the structure and the other outbuilding are shown on the map. The USGS 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangle also shows this structure and outbuilding. No structure is visible within or near the site in USGS aerial imagery taken in 1997, and no structural remains were observed at the time of TVAR's survey.

A total of 23 shovel tests were excavated during TVAR's investigation of this site, 11 of which yielded artifacts (n=90) from a maximum depth of 30 cmbs. The site encompasses 3,311 m^2. Memphis silt loam (MeB) is mapped throughout the site. Shovel Test 2540 produced a profile representative of those observed during testing of 40MD277, consisting of a brown (7.5YR 5/3) silty clay loam plow zone (0 to 13 cmbs), over a mottled brown (7.5YR 5/4) silty clay loam (13 to 24 cmbs), underlain by a mottled brown (7.5YR 5/4) silty clay loam (24 to 50 cmbs) (Figure 5.76). The artifacts recovered during TVAR's investigation of 40MD277 are listed below.

Shovel Test 2522 (0-15 cmbs)

1	0.69 g	clear container glass/machine mold seam, bottle/jar
1	0.05 g	clear undifferentiated glass
2	1.81 g	clear container glass
1	13.35 g	aqua undifferentiated glass

Shovel Test 2539 (15-30 cmbs)

1	0.51 g	clear container glass/machine mold seam, bottle/jar
1	0.49 g	aqua container glass

Shovel Test 2540 (0-15 cmbs)

1	2.85 g	clear container glass w/illegible embossing
1	0.85 g	amber container glass
2	1.47 g	amber molded container glass
1	0.91 g	amethyst (solarized) container glass
2	1.45 g	clear container glass
1	0.24 g	clear container glass with applied color label
1	6.72 g	clear container glass/undifferentiated base, bottle/jar with stippling
1	0.57 g	ferrous metal wire nail fragment

Shovel Test 2540 (15-30 cmbs)

1	2.18 g	ferrous metal wire nail fragment
1	0.46 g	coal

Shovel Test 2541 (15-30 cmbs)

1	9.69 g	salt/Bristol glazed stoneware
1	2.69 g	ferrous metal wire nail fragment

Shovel Test 6000 (0-15 cmbs)

1	0.13 g	red slip whiteware
1	2.73 g	plain whiteware
2	1.66 g	terracotta
2	1.18 g	clear molded container glass
3	2.38 g	clear container glass
2	0.58 g	ferrous metal fragment
1	0.63 g	ferrous metal wire nail fragment
1	0.73 g	brick fragment

Shovel Test 6001 (0-10 cmbs)

1	2.22 g	aqua container glass
1	1.99 g	clear molded container glass

Shovel Test 6001 (20-30 cmbs)

1	2.36 g	light green flat glass

Shovel Test 6002 (0-15 cmbs)

1	1.35 g	aqua container glass
8	3.54 g	clear container glass
1	0.55 g	clear container glass with applied color label
1	5 g	clear container glass/machine mold seam/crown finish, bottle
1	0.86 g	clear molded container glass/machine mold seam, bottle/jar
1	0.32 g	ferrous metal wire
4	1.05 g	ferrous metal fragment
3	1.21 g	brick fragment
6	3.06 g	coal

Shovel Test 6003 (0-15 cmbs)

1	0.42 g	clear container glass
1	1.8 g	clear flat glass
1	0.59 g	ferrous metal wire
3	1.61 g	brick fragment

Shovel Test 6003 (15-19 cmbs)

5	13.16 g	brick fragment

Shovel Test 6006 (0-10 cmbs)

1	0.08 g	clear undifferentiated glass
2	1.89 g	clear container glass
1	6.17 g	clear molded container glass with stippled design

Shovel Test 6008 (0-10 cmbs)

1	3.32 g	clear molded container glass/undifferentiated base, bottle/jar

Shovel Test 6008 (10-20 cmbs)

1	2.92 g	clear molded container glass
1	1.77 g	clear container glass w/decorative embossing

Shovel Test 6009 (0-10 cmbs)

1	0.33 g	amber molded container glass
2	0.73 g	clear container glass
1	2.19 g	clear container glass w/illegible embossing
1	0.84 g	light green container glass
1	0.29 g	amber container glass
1	0.78 g	aluminum wire
1	1.43 g	ferrous metal wire nail fragment

The assemblage recovered at the site included clear (n=36), amber (n=5), aqua (n=3), light green (n=1), solarized amethyst (n=1) container glass, clear (n=1) and light green (n=1) flat glass, clear (n=2) and aqua (n=1) undifferentiated glass, salt/Bristol glazed stoneware (n=1), whiteware (n=2), terracotta (n=2), ferrous metal fragments (n=6), ferrous metal wire (n=2), ferrous metal wire nail fragments (n=5), aluminum wire (n=1), coal (n=7), and brick fragments (n=12). The assemblage is likely associated with the non-extant twentieth century structure and outbuildings present at the site by 1947 and demolished between 1981 and 1997 (Figure 5.77). The assemblage was shallowly deposited within a context disturbed by plowing and the demolition of three structures. As the materials recovered at the site do not distinguish the assemblage's research potential from other similar sites in the region and were shallowly deposited in disturbed contexts, it is the opinion of TVAR that 40MD277 lacks integrity and significant research potential. Accordingly, TVAR recommends that 40MD277 is not eligible for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

Figure 5.77. Excerpts from historic USGS 7.5-minute topographic quadrangles and imagery showing the location of structures within the recorded boundary of 40MD277.

Figure 5.78. Map of TVAR's investigations at 40MD278.

40MD278

Site 40MD278, a historic scatter, was identified on a hill slope adjacent to Womack Lane and 271 northeast of an unnamed tributary of Cub Creek (Figure 5.78). At the time of TVAR's investigation, the site was located in a harvested wheat field that had been replanted with soy (Figure 5.79). A total of 26 shovel tests were excavated during TVAR's investigation of this site, 10 of which yielded artifacts (n=63) from a maximum depth of 20 cmbs. The site encompasses 4,372 m^2. Memphis silt loam (MeB) is mapped throughout the site. Shovel Test 2534 produced a profile representative of those observed during testing of 40MD278, consisting of a weak red (10YR 4/3) silty clay loam plow zone (0 to 9 cmbs) underlain by a strong brown (7.5YR 5/6) silty clay (9 to 50 cmbs) (Figure 5.80).

No structures are depicted in the vicinity of the site on the 1877 map of Madison County. Historic USGS aerial imagery taken in 1947 shows a structure along the southern boundary of the site (Figure 5.81). This structure was not depicted on the USGS 1959 Westover 7.5-minute topographic quadrangle, though a structure was shown along the western boundary of the site on the map. The USGS 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangle also shows this structure. Given the slight discrepancies inherent to historic mapping, it is possible that the structure depicted on the quadrangles is the same as that seen on the 1947 aerial imagery. No structure is visible within or near the site in USGS aerial imagery taken in 1997, and no structural remains were observed at the time of TVAR's survey. The artifacts recovered during TVAR's investigation of 40MD278 are listed below.

Figure 5.79. The location of 40MD278 in an agricultural field with Womack Lane visible in the background (view to the north).

Figure 5.80. Eastern profile of Shovel Test 2534 on 40MD278.

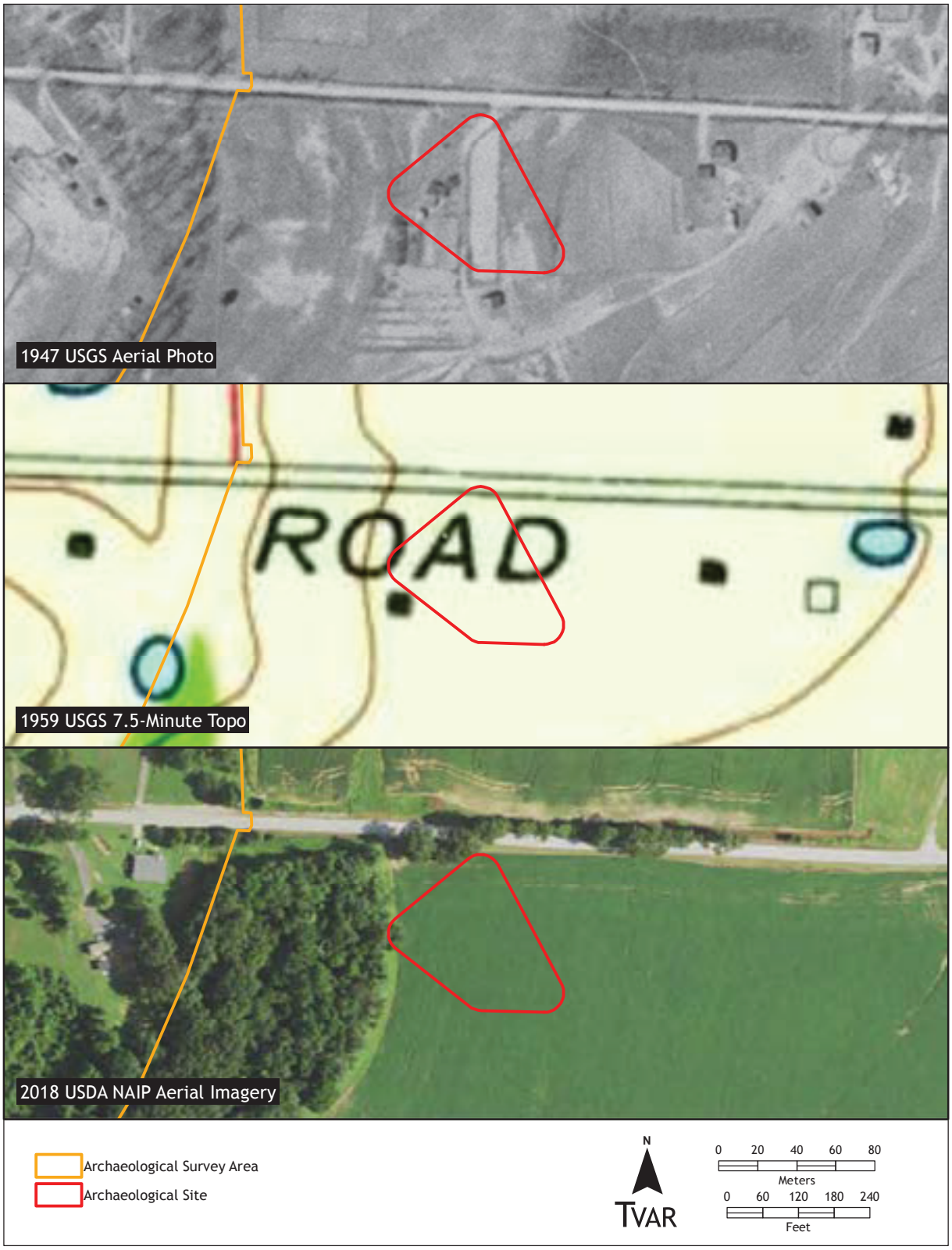

Figure 5.81. Excerpts from historic USGS 7.5-minute topographic quadrangles and imagery showing the location of structures within the recorded boundary of 40MD278.

Shovel Test 2526 (5-15 cmbs)

1	0.29 g	plain whiteware
1	0.53 g	clear container glass

Shovel Test 2534 (10-25 cmbs)

1	0.53 g	aqua container glass
3	4.8 g	clear container glass
1	0.47 g	clear container glass, drinking glass
2	5.25 g	light green container glass
2	51.99 g	brick fragment

Shovel Test 2535 (0-15 cmbs)

1	0.43 g	clear container glass

Shovel Test 2556 (5-15 cmbs)

1	5.2 g	clear container glass/undifferentiated base, bottle/jar
1	20.54 g	brick fragment

Shovel Test 2557 (15-30 cmbs)

1	1.54 g	ferrous metal wire nail fragment
1	0.31 g	brick fragment

Shovel Test 6012 (0-14 cmbs)

2	1.09 g	clear container glass
1	1.44 g	clear container glass/machine mold seam, bottle/jar
7	2.04 g	clear undifferentiated glass
2	24.37 g	light blue flat glass
1	1.37 g	ferrous metal wire
2	5.08 g	ferrous metal wire nail fragment
8	163 g	brick fragment

Shovel Test 6014 (0-1 cmbs)

1	33.83 g	glazed brick fragment

Shovel Test 6014 (1-10 cmbs)

1	0.98 g	plain whiteware
1	0.5 g	clear container glass/external thread (small) finish, bottle w/”5” embossing
1	3.83 g	clear flat glass
1	0.92 g	clear undifferentiated glass
2	5.3 g	ferrous metal wire nail fragment
5	8.15 g	brick fragment

Shovel Test 6015 (0-10 cmbs)

1	1.38 g	aqua cased glass
2	2.24 g	clear flat glass
1	0.62 g	bright green cased glass
1	1.99 g	amethyst (solarized) container glass/machine mold seam, bottle/jar
2	1.39 g	clear container glass
1	0.11 g	coal

Shovel Test 6018 (0-15 cmbs)

1	1.52 g	aqua molded container glass
1	0.76 g	green container glass
1	0.25 g	ferrous metal fragment

Shovel Test 6020 (10-20 cmbs)

1	7.15 g	clear container glass/external thread (large) finish, jar

The assemblage recovered at the site included clear (n=14), aqua (n=2), light green (n=2), green (n=1), and solarized amethyst (n=1) container glass, clear (n=3) and light blue (n=2) flat glass, clear undifferentiated glass (n=8), aqua (n=1) and bright green (n=1) cased glass, whiteware (n=2), ferrous metal fragments (n=1), ferrous metal wire nails (n=6), coal (n=1), and brick fragments (n=18). These artifacts largely correspond to broad periods of manufacture and use, though the assemblage is likely associated with the non-extant twentieth century structure(s) identified in the southern extent of the site. The assemblage was shallowly deposited within a context disturbed by plowing and the demolition of two structures. As the materials recovered at the site do not distinguish the assemblage's research potential from other similar sites in the region and were shallowly deposited in disturbed contexts, it is the opinion of TVAR that 40MD278 lacks integrity and significant research potential. Accordingly, TVAR recommends that 40MD278 is not eligible for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

40MD279

Site 40MD279, a historic scatter, was identified along a hill top 250 m southeast of the intersection of Womack Lane and Denmark-Jackson Road (Figure 5.82). The resource is located 260 m west an unnamed tributary of Johnson Creek. At the time of TVAR's investigation, the site spanned a hardwood forest and an agricultural field (Figures 5.83 and 5.84). The remnants of a fence ran through the trees along the edge of the agricultural field (Figure 4.85).

One structure is depicted approximately 100 m east of the site on the 1877 map of Madison County, which further indicates that the structure belongs to "Geo. Williamson" (Figure 5.86). George Williamson and his family are discussed in greater detail in Chapter 3. This structure is not discernible on USGS aerial imagery taken in 1947 and is not shown on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles. No additional structures are mapped in the vicinity of the site.

A total of 41 shovel tests were excavated during TVAR's investigation of this site, six of which yielded artifacts (n=16) from a maximum depth of 30 cmbs. The site encompasses 6,431 m^2. Grenada (GrB), Loring (LoB), and Memphis (MeB) silt loams are mapped at the site. Shovel Test 1359 produced a profile representative of those observed during testing of 40MD279, consisting of a yellowish brown (10YR 5/4) silty clay plow zone (0 to 10 cmbs), a yellowish brown (10YR 5/6) silty clay (10 to 44 cmbs), and a mottled very pale brown (10YR 7/3) silty clay loam (44 to 66 cmbs) (Figure 5.87). The artifacts recovered during TVAR's investigation of 40MD279 are listed below.

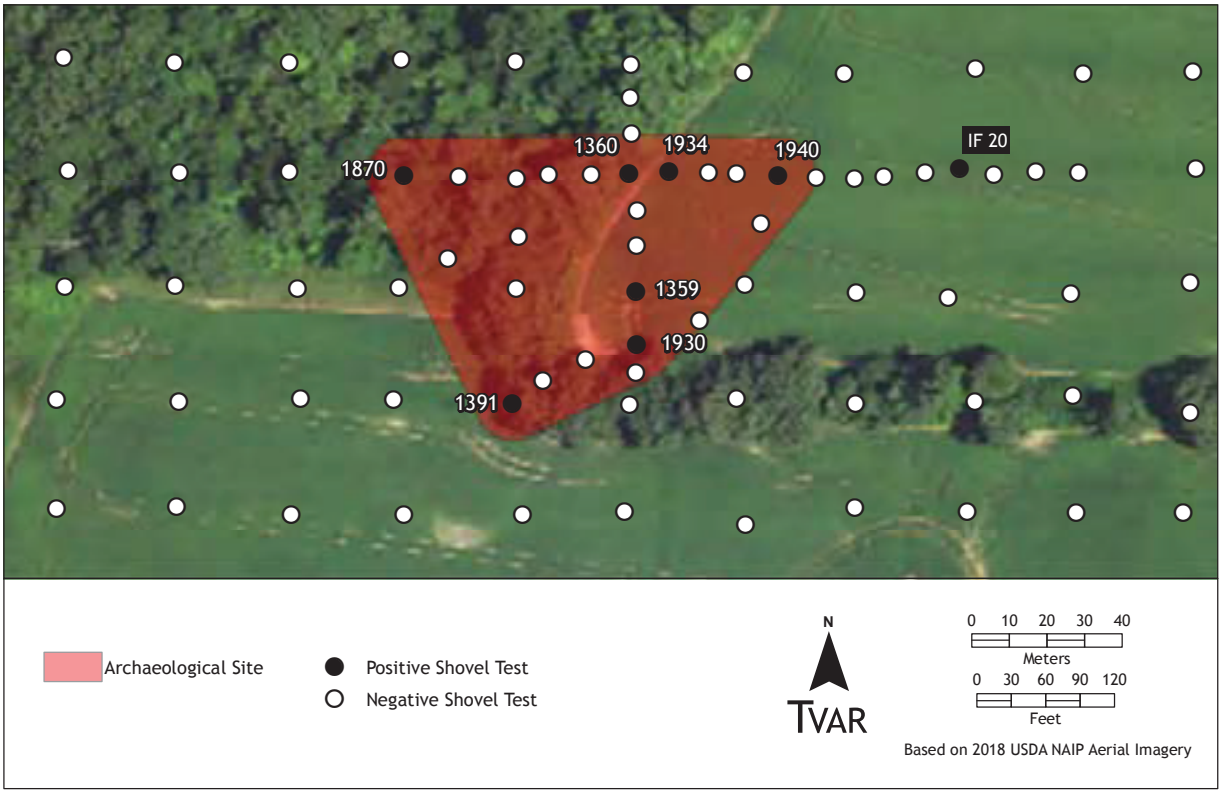

Figure 5.82. Map of TVAR's investigations at 40MD279.

Figure 5.83. The eastern extent of 40MD279 in an agricultural field (view to the north).

Figure 5.84. Northwestern extent of 40MD279 in a hardwood forest (view to the west).

Figure 5.85. Fenceline along the edge of the agricultural field on 40MD279 (view to the south).

Figure 5.86. Excerpts from historic maps and imagery showing the location of a structure mapped near 40MD279 in 1877.

Figure 5.87. Northern profile of Shovel Test 1359 on 40MD279.

Shovel Test 1359 (0-10 cmbs)
- 1 3.73 g molded , blue-edged pearlware
- 1 3.3 g light green molded container glass
- 1 12.04 g glazed brick fragment
- 2 75.68 g brick fragment

Shovel Test 1360 (0-15 cmbs)
- 1 12.15 g brick fragment

Shovel Test 1391 (0-10 cmbs)
- 1 117.75 g brick fragment

Shovel Test 1870 (0-20 cmbs)
- 1 186.95 g glazed brick fragment, solid

Shovel Test 1930 (0-10 cmbs)
- 3 4.47 g aqua container glass
- 1 1.27 g brick fragment

Shovel Test 1930 (10-20 cmbs)
- 1 2.59 g ferrous metal wire nail fragment
- 1 1.95 g brick fragment

Shovel Test 1934 (10-25 cmbs)
- 1 3.24 g aqua molded container glass

Shovel Test 1940 (20-30 cmbs)
- 1 370.64 g brick fragment, solid

The assemblage recovered from 40MD279 consisted of pearlware (n=1), aqua (n=4) and light green (n=1) container glass, one ferrous metal wire nail fragment, and brick fragments (n=9). As discussed in Chapter 6, these artifacts largely represent a mid-nineteenth to mid-twentieth century deposition. Notably, a fragment of pearlware was recovered from the site. Pearlware was produced from 1779 until 1820 and was largely out of circulation by 1840. These artifacts are consistent with the structure mapped near the site, which was constructed prior to 1877 and razed between 1877 and 1947. Given the mapping resolution of the 1877 Beers map it is possible that 40MD279 represents the house site of Geo. Williamson as identified on the map. While sparse, the artifact assemblage supports this hypothesis. As detailed in Chapter 3 George Williamson was a prominent local individual. Though the assemblage was relatively sparse and shallowly deposited, a specimen of pearlware was recovered from the site near the location a structure was mapped in 1877. As such, any features identified at the site could provide insights regarding nineteenth century occupation of Madison County. Consequently, it is TVAR's opinion that 40MD279 merits an NRHP eligibility status of undetermined and should be avoided. If avoidance is not an option, further investigation of the identified portion of 40MD279 is recommended to better ascertain the site's research potential and eligibility for listing on the NRHP.

NSCR 1

Non-Site Cultural Resource 1, a historic scatter, was identified along a hill top 40 m northeast of Denmark-Jackson Road and 197 m west of a pond formed by impounding an unnamed tributary of Johnson Creek (Figure 5.88). At the time of TVAR's survey, the resource was located in a band of dense hardwood trees between two fields (Figure 5.89). A light scatter of glass was observed among the leaves on the ground surface of the resource.

No structures are depicted in the vicinity of the resource on the 1877 map of Madison County. One outbuilding is discernible on USGS aerial imagery taken in 1947 within the southern boundary of the site (Figure 5.90). Two additional outbuildings and one structure are also located within 50 m of the site. All are also depicted on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles and are visible in USGS aerial imagery taken in 1997. No evidence of any structure was observed in aerial imagery taken in 2007 or at the time of TVAR's investigation.

No systematic shovel tests within the scatter of glass observed at the resource produced artifacts, so four judgemental shovel tests were placed to delineate the scatter within the survey area. In total, eight shovel tests were excavated during the investigation of NSCR 1 within the survey area, and three of the judgemental delineation tests yielded artifacts (n=5) from a maximum depth of 15 cmbs. The resource was delineated to the north and west; however, due to the constraints of the survey area, the full extent of NSCR 1 could not be fully defined during the current investigation. The identified portion of the resource within the survey area encompasses 2,089 m^2. Memphis silt loam (MeB) is mapped throughout the identified portion of the resource. Shovel Test 2873 produced a profile representative of those observed during the testing of NSCR 1, consisting of a light yellowish brown (10YR 6/4) silty clay loam plowzone (0 to 25 cmbs) over a yellowish brown (10YR 5/6) silty clay loam (25 to 50 cmbs). The artifacts recovered during TVAR's investigation of NSCR 1 are listed below.

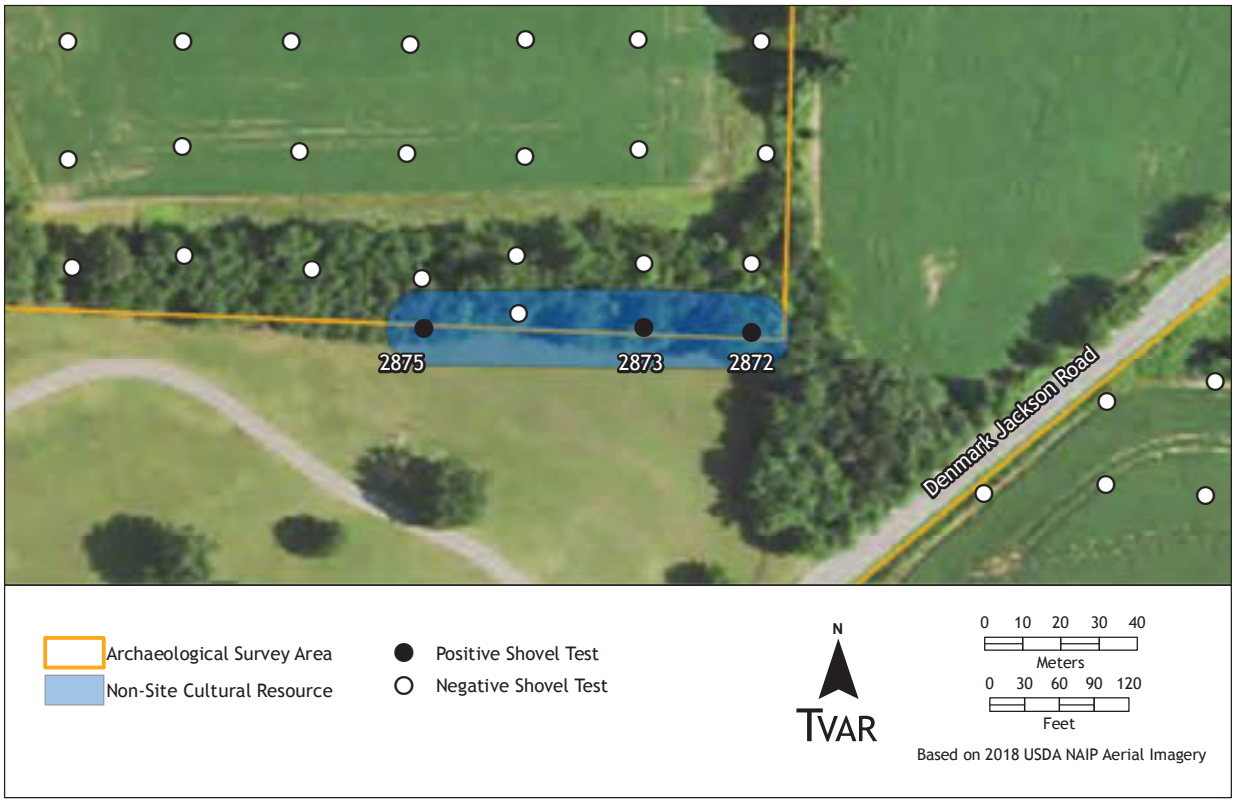

Figure 5.88. Map of TVAR's investigations at NSCR 1.

Figure 5.89. The location of NSCR 1 in a dense hardwood forest (view to the north).

Figure 5.90. Excerpts from historic USGS 7.5-minute topographic quadrangles and imagery showing the location of structures within the recorded boundary of NSCR 1.

Shovel Test 2872 (0-10 cmbs)

1	2.39 g	clear container glass with stippled design

Shovel Test 2873 (5-15 cmbs)

1	750 g	ferrous metal/wood/rubber hammer

Shovel Test 2875 (0-15 cmbs)

1	1.13 g	clear container glass w/undifferentiated embossing
1	9.15 g	light green flat glass
1	49.57 g	milk container glass/machine mold seam/cup bottom base/external thread (large) finish, jar w/"18" embossing

The historic assemblage recovered during TVAR's investigation of NSCR 1 consisted of clear (n=2) and milk (n=1) container glass, light green flat glass (n=1), and one hammer. As discussed in Chapter 6, these artifacts largely represent twentieth century deposition, consistent with the structure built near the resource prior to 1947 and razed between 1997 and 2007. Artifacts recovered from the resource are likely associated with refuse disposal from occupants of the farmstead immediately to the south of NSCR 1. TVAR submitted a record of NSCR 1 to the TDOA; however, the TDOA would not assign a Tennessee site number to the resource due to a lack of sufficient evidence to support a pre-1950 occupation at NSCR 1. As the materials recovered at the resource do not distinguish the assemblage's research potential from previously identified sites in the region and were confined to a plowzone context, it is the opinion of TVAR that NSCR 1 lacks integrity and significant research potential. Accordingly, TVAR recommends that the identified portion of NSCR 1 is not eligible for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

NSCR 2

Non-Site Cultural Resource 2, a historic scatter, was identified along a hill top 210 m north of Denmark-Jackson Road (Figure 5.91). The resource is situated 172 m east of a pond formed by impounding an unnamed tributary of Cub Creek. At the time of TVAR's survey, the resource spanned an agricultural field, the lawn of an abandoned house (MD-IP-2), and a stand of hardwood trees (Figure 5.92). No structures are visible in the vicinity of the resource on the 1877 map of Madison County, USGS aerial imagery taken in 1947, or the USGS 1959 and Westover 7.5-minute topographic quadrangle. One structure is depicted within the southern boundary of NSCR 2 on the 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangle. TVAR's assessment of architectural resource MD-IP-2 indicates it was constructed ca. 1964. This structure was still present at the time of TVAR's survey, though it was not occupied and was overgrown by vines (Figure 5.93). As discussed in Chapter 4, TVAR recommends that MD-IP-2 is ineligible for listing on the NRHP. A wire animal enclosure associated with the structure was located within a stand of hardwood trees growing to the east of the structure, in the eastern extent of the resource (Figure 5.94).

A total of 34 tests were excavated during TVAR's investigation of the resource, nine of which yielded artifacts (n=33) from a maximum depth of 40 cmbs. The resource encompasses 18,597 m^2. Memphis silt loam (MeB) is mapped throughout the site. Shovel Test 3172 produced a profile rep-

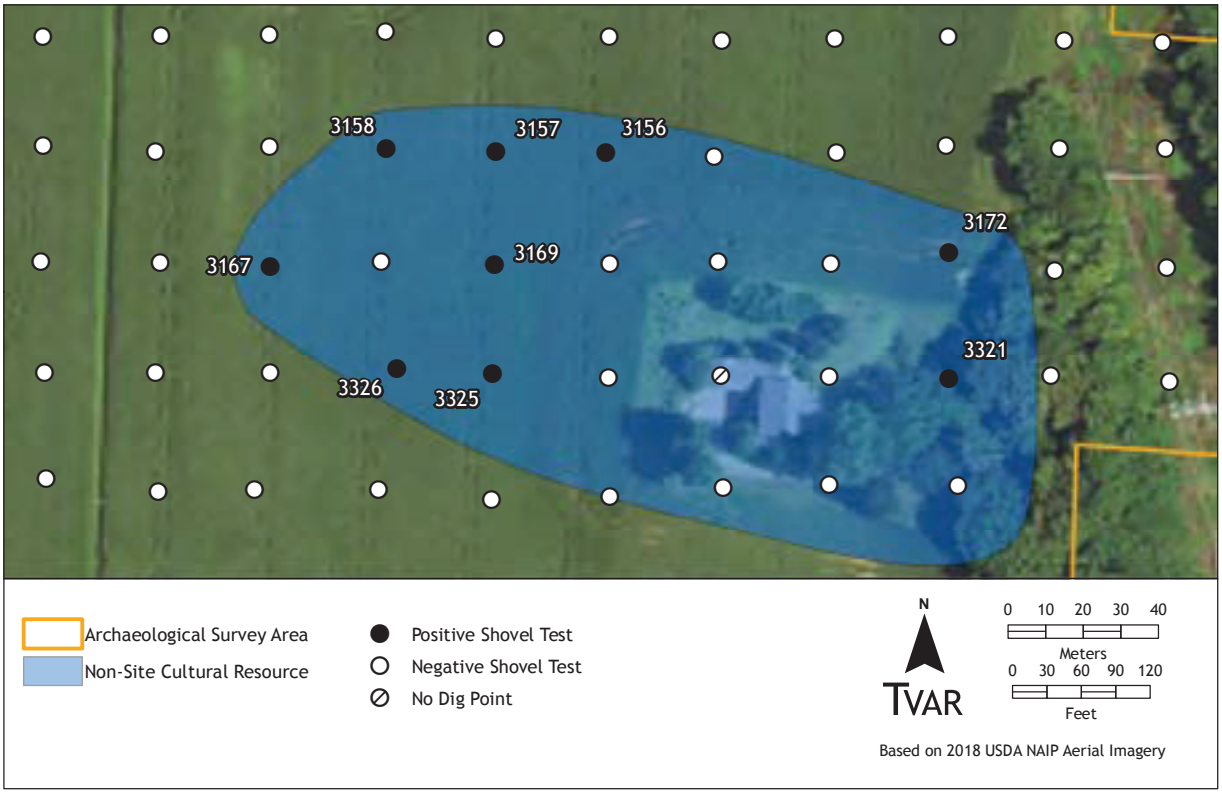

Figure 5.91. Map of TVAR's investigations at NSCR 2.

Figure 5.92. The location of NSCR 2 in an agricultural field (view to the west).

Figure 5.93. Abandoned brick house on NSCR 2 (view to the west).

Figure 5.94. Overgrown wire animal enclosure on NSCR 2 under hardwood trees (view to the north).

resentative of those observed during testing of NSCR 2, consisting of a yellowish brown (10YR 5/4) silty clay loam plowzone (0 to 20 cmbs) over a brownish yellow (10YR 6/6) silty clay (20 to 50 cmbs). Artifacts recovered during TVAR's investigation of NSCR 2 are listed below.

Shovel Test 3156 (15-30 cmbs)
- 1 0.79 g amethyst (solarized) container glass

Shovel Test 3157 (0-10 cmbs)
- 1 1.05 g clear container glass
- 2 3.83 g amethyst (solarized) container glass

Shovel Test 3158 (15-25 cmbs)
- 1 0.56 g light green flat glass

Shovel Test 3167 (0-20 cmbs)
- 1 0.24 g brick fragment

Shovel Test 3169 (30-40 cmbs)
- 1 0.48 g brick fragment

Shovel Test 3172 (0-10 cmbs)
- 10 19.44 g brick fragment
- 3 20.88 g glazed brick fragment

Shovel Test 3321 (0-10 cmbs)
- 1 8.58 g brick fragment

Shovel Test 3325 (0-10 cmbs)
- 1 0.45 g clear container glass
- 2 2.27 g ferrous metal wire nail fragment
- 2 1.24 g brick fragment

Shovel Test 3326 (0-10 cmbs)
- 7 11.84 g brick fragment

The assemblage recovered at the resource included clear (n=2) and solarized amethyst (n=3) container glass, light green flat glass (n=1), one ferrous metal wire nail fragment, and brick fragments (n=26). As discussed in the following chapter, these artifacts largely correspond to broad periods of manufacture and use, though the assemblage is likely associated with the extant mid-twentieth century structure located in the resource's southern extent. Most of the assemblage (n=26, 84 percent) consisted of brick fragments shallowly deposited within a plowzone. TVAR submitted a record of NSCR 2 to the TDOA; however, the TDOA would not assign a Tennessee site number to the resource because the resource corresponds to a post-1950 occupation. As the materials recovered at the resource were largely confined in contexts disturbed by plowing, it is the opinion of TVAR that NSCR 2 lacks integrity and significant research potential and is not eligible for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

NSCR 3

Non-Site Cultural Resource 3, a historic scatter, was identified along a hill top adjacent to Denmark-Jackson Road (see Figure 5.64). The resource is situated 20 m northwest of an unnamed tributary of Johnson Creek. At the time of TVAR's survey, the resource was located in a corn field, and the remnants of a gravel road disturbed by plowing were observed in the northwestern extent of the resource along Denmark-Jackson Road (Figures 5.95 and 5.96). Surface visibility was clear (approximately 50 percent visibility) beneath the corn, and a broad scatter of historic artifacts was observed across the resource's surface. No artifacts were collected during the survey, as all observed surface materials appeared to be near modern in age.

No structures are depicted in the vicinity of the resource on the 1877 map of Madison County. A cluster of three structures are visible approximately 140 m southwest of the resource on USGS aerial imagery taken in 1947 and the USGS 1959 Westover 7.5-minute topographic quadrangle. Three additional structures are depicted within this cluster on the 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangle, the nearest of which is located 75 m southwest of NSCR 3. As seen in aerial imagery available on Google earth, four of these structures were demolished between 1997 and 2007, though two were still present at the time of the survey. It is possible that NSCR 3 represents a refuse disposal area associated the cluster of structures southwest of the site. Interestingly no artifacts were recovered from the area where the structures were located during shovel testing.

A total of 36 tests were excavated during TVAR's investigation of the resource, two of which yielded artifacts (n=22) from a maximum depth of 40 cmbs. The resource encompasses 15,901 m^2, which includes the full areal extent of the artifact scatter observed at NSCR 3. Notably, the boundary of site 40MD275 intersects the northern boundary of NSCR 3. It was determined that the two assemblages merited separate site numbers due to the distinct concentrations of lithic and historic artifacts recovered from the respective resources. Memphis (MeB2) and Lexington (LeC3) silt loams are mapped at the site. Shovel Test 1556 produced a profile representative of those observed during testing of NSCR 3, consisting of a brown (10YR 5/3) silt loam plowzone (0 to 17 cmbs) underlain by a yellowish brown (10YR 5/6) silty clay loam (17 to 35 cmbs) (Figure 5.97). Brick fragments were present throughout the first stratum, and are visible in the profile of the test. Artifacts recovered during TVAR's investigation of NSCR 3 are listed below.

Shovel Test 1556 (0-15 cmbs)
- 5 — 91.79 g brick fragment

Shovel Test 1556 (15-30 cmbs)
- 3 — 4.16 g ferrous metal wire nail fragment
- 4 — 142.51 g brick fragment

Shovel Test 1556 (30-40 cmbs)
- 8 — 12.27 g brick fragment

Shovel Test 1561 (0-10 cmbs)
- 2 — 0.56 g clear container glass

Figure 5.95. The location of NSCR 3 in a corn field (view to the south).

Figure 5.96. The remains of a plowed down gravel road in the western extent of NSCR 3 (view to the west).

Figure 5.97. Southeastern profile of Shovel Test 1556 on NSCR 3, with brick fragments visible in Stratum I.

The assemblage recovered at the resource included clear container glass (n=2), ferrous metal wire nail fragments (n=3), and brick fragments (n=19). These artifacts largely correspond to broad periods of manufacture and use, though the assemblage could not be directly associated with a documented occupation. Most of the assemblage (n=19, 86 percent) consisted of brick fragments shallowly deposited within a plowzone. TVAR submitted a record of NSCR 3 to the TDOA; however, the TDOA would not assign a Tennessee site number to the resource due to a lack of sufficient evidence to support a pre-1950 occupation at NSCR 3. As the materials recovered at the resource do not distinguish the assemblage's research potential from known sites in the region and were largely confined contexts disturbed by plowing, it is the opinion of TVAR that NSCR 3 lacks integrity and significant research potential. Accordingly, TVAR recommends that NSCR 3 is not eligible for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

NSCR 4

Non-Site Cultural Resource 4, a historic scatter, was identified along a hill slope 204 m south of Womack Lane and 166 m east of an unnamed tributary of Cub Creek (Figure 5.98). At the time of TVAR's investigation, the resource spanned the border of an agricultural field and a hardwood forest (Figures 5.99 and 5.100). No structures are visible in the vicinity of the resource on the 1877 map of Madison County, Tennessee, the USGS 1959 or 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS aerial imagery taken in 1947.

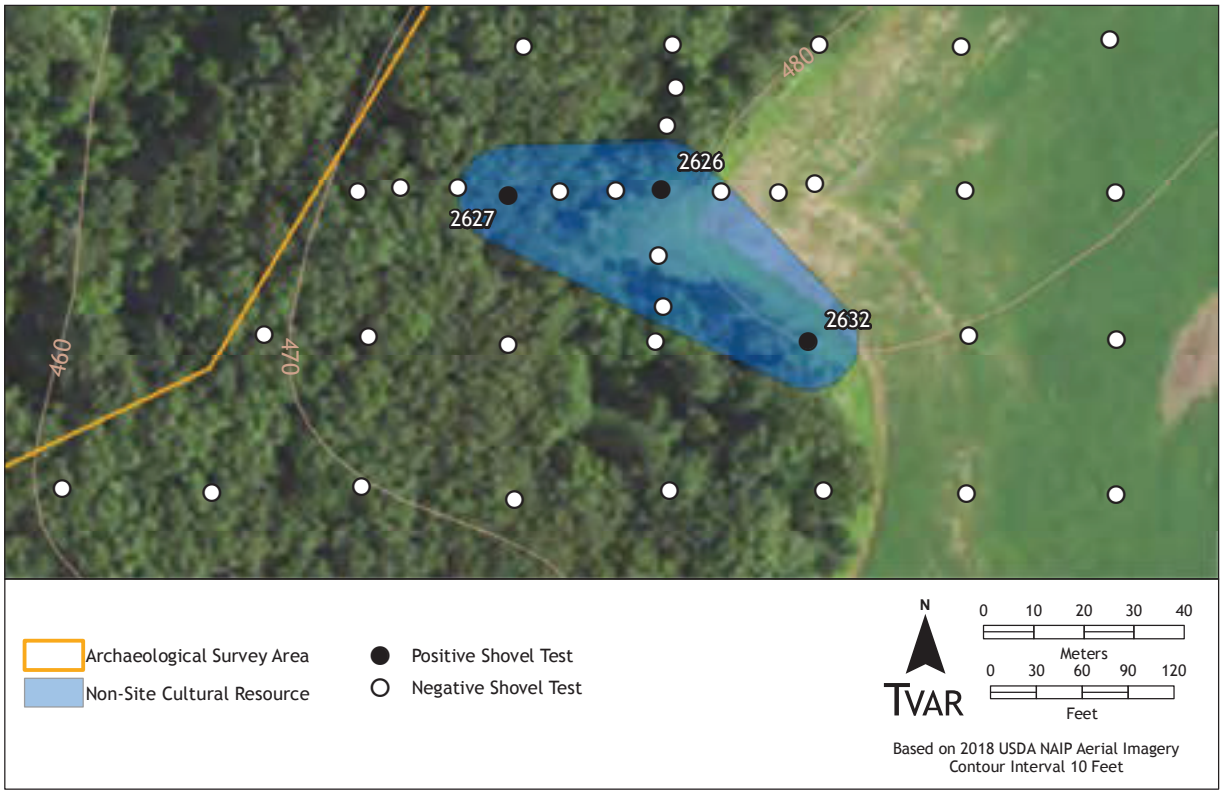

Figure 5.98. Map of TVAR's investigations at NSCR 4.

Figure 5.99. The eastern extent of NSCR 4 in an agricultural field alongside a hardwood forest (view to the southwest).

Figure 5.100. The western extent of NSCR 4 in a hardwood forest (view to the northwest).

Seventeen shovel tests were excavated during TVAR's investigation of NSCR 4, 3 of which yielded artifacts (n= 6) from a maximum depth of 30 cmbs. The resource encompasses 2,180 m^2. Memphis silt loam (MeB) is mapped across the site. Shovel Test 2626 produced a profile representative of those observed during testing of NSCR 4, consisting of a weak red (10YR 5/3) silty loam plow zone (0 to 15 cmbs) underlain by a strong brown (7.5YR 6/6) silty clay (15 to 50 cmbs). The artifacts recovered during TVAR's investigation of NSCR 4 are listed below.

Shovel Test 2626 (15-30 cmbs)

1	5.39 g	clear container glass/undifferentiated base, bottle/jar w/"HAZEL-ATLAS GLASS COMPANY maker mark"/"1" embossing
2	1.51 g	light green flat glass

Shovel Test 2627 (0-15 cmbs)

1	0.47 g	light green flat glass
1	7.35 g	aqua container glass

Shovel Test 2632 (0-15 cmbs)

1	1.53 g	plain porcelain vessel fragment

The assemblage recovered at NSCR 4 included clear (n=1) and aqua (n=1) container glass, light green (n=2) flat glass, and porcelain (n=1). As detailed in the Chapter 6, the makers mark embossed on the clear container glass specimen is indicative of a manufacture date between 1923 to ca. 1982, and the remainder of the artifacts are representative of relatively broad periods of manufacture

and use. However, the assemblage could not be associated with a documented historic occupation. Furthermore, the assemblage was shallowly deposited within a context disturbed by plowing. TVAR submitted a record of NSCR 4 to the TDOA; however, the TDOA would not assign a Tennessee site number to the resource due to a lack of sufficient evidence to support a pre-1950 occupation at NSCR 4. As the materials recovered at the resource do not distinguish the assemblage's research potential from other similar sites in the region and were shallowly deposited in disturbed contexts, it is the opinion of TVAR that NSCR 4 lacks integrity and significant research potential. Accordingly, TVAR recommends that NSCR 4 is not eligible for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

NSCR 5

Non-Site Cultural Resource 5, a historic scatter, was recorded along the southeastern edge of a terraced hill slope 400 m northwest of an unnamed tributary of Johnson Creek (Figure 5.101). The resource was situated 600 m southeast of Denmark-Jackson Road and 90 m northwest of the Tennessee Midland Railroad. At the time of TVAR's investigation, the resource was situated in a hardwood forest separating two agricultural fields (Figure 5.102). No structures are visible in the vicinity of the site on the 1877 map of Madison County, Tennessee, the USGS 1959 or 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS aerial imagery taken in 1947.

Eleven shovel tests were excavated during TVAR's investigation of the resource, 3 of which yielded artifacts (n=30) from a maximum depth of 70 cmbs. The resource encompasses 2,180 m^2. Memphis silt loam (MeB2) is mapped across NSCR 5. Shovel Test 5175 produced a profile representative of those observed during testing of NSCR 5, consisting of a pale brown (10YR 6/3) silty loam (0 to 29 cmbs), a mottled yellowish brown (10YR 5/8) silty clay loam (29 to 48 cmbs), and a yellowish brown (10YR 5/6) silty clay loam (48 to 70 cmbs) (Figure 5.103). Brick fragments were present throughout the second and third strata, and a brick was present in the southern profile at approximately 45 cmbs. The artifacts recovered during TVAR's investigation of NSCR 5 are listed below.

Shovel Test 1044 (20-30 cmbs)
- 1 15.29 g cuprous decorative furniture fitting with floral motif

Shovel Test 1052 (15-25 cmbs)
- 1 1.41 g clear container glass
- 1 66.99 g ferrous metal strap, perforated
- 1 4.02 g ferrous metal wire nail

Shovel Test 5175 (35-48 cmbs)
- 16 536.26 g brick fragment

Shovel Test 5175 (60-70 cmbs)
- 1 1120 g ferrous metal coupling
- 1 5.31 g ferrous metal wire nail
- 1 424.7 g ferrous metal pipe
- 7 43.19 g ferrous metal wire

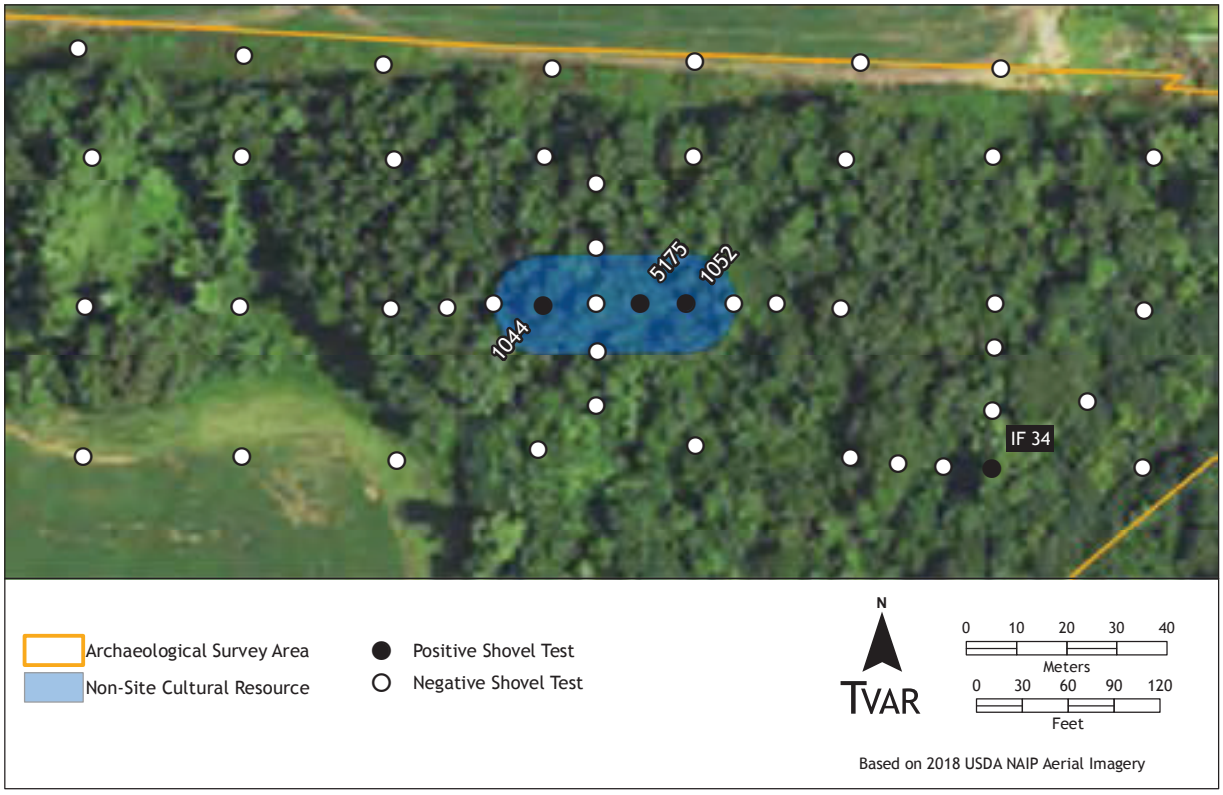

Figure 5.101. Map of TVAR's investigations at NSCR 5.

Figure 5.102. The location of NSCR 5 in a hardwood forest (view to the east).

Figure 5.103. Southern profile of Shovel Test 5175 on NSCR 5, with a brick fragment at 40 cmbs.

The assemblage recovered at the resource included clear container glass (n=1), one cuprous decorative furniture fitting, one ferrous metal strap, one ferrous metal coupling, one ferrous metal pipe, one ferrous metal wire nail, ferrous metal wire (n=7), and brick fragments (n=16). Notably, artifacts were recovered at a depth of 70 cmbs in Shovel Test 5175. However, the artifacts are representative of relatively broad periods of manufacture and use, and the assemblage could not be associated with a documented historic occupation. TVAR submitted a record of NSCR 5 to the TDOA; however, the TDOA would not assign a Tennessee site number to the resource due to a lack of sufficient evidence to support a pre-1950 occupation at NSCR 5. Given the lack of context and the location of the resource under the cover of trees dividing two agricultural fields, it is likely the resource represents a historic or near modern trash dump associated with the nearby farms. It is the opinion of TVAR that NSCR 5 lacks integrity and significant research potential. Accordingly, TVAR recommends that NSCR 5 is not eligible for listing on the NRHP. No further archaeological investigation of this resource within the survey area is recommended in connection with the proposed project.

Isolated Find 1

Isolated Find 1, which consists of a piece of light bulb glass and a brick fragment, was recovered from a corn field along a loess hill (see Figure 5.13). The resource was located 102 m southeast of Denmark-Jackson Road and 179 m southwest of a pond created by impounding an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. A total of 13 shovel tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 1744) yielded the two artifacts from a depth of 0 to 10 cmbs. Due to artifact paucity, Isolated Find 1 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Shovel Test 1744 (0-10 cmbs)

1	0.05 g	clear light bulb glass
1	2.08 g	brick fragment

Isolated Find 2

Isolated Find 2 consisted of a piece of clear container glass excavated from 5 to 15 cmbs in Shovel Test 1750 (see Figure 5.13). The resource was identified in a corn field planted along a loess hill. Isolated Find 2 was located 98 m southeast of Denmark-Jackson Road and 146 m southwest of a pond created by impounding an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single artifact that is representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 2. Due to artifact paucity, Isolated Find 2 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1750 (5-15 cmbs)

1	1.5 g	clear container glass

Isolated Find 3

Isolated Find 3, a container glass fragment excavated from 10 to 20 cmbs in Shovel Test 1805, was identified on a loess hill (see Figure 5.13). At the time of TVAR's investigation, the resource was located alongside a gravel road in a corn field. Isolated Find 3 was situated 335 m east of Denmark-Jackson Road and 125 m south of a pond created by impounding an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County. Two structures are seen 50 m south of the resource on the USGS 1959 and 1959 (Photorevised 1981)

Westover 7.5-minute topographic quadrangles and USGS historic aerial imagery taken in 1947, on the opposite side of the gravel road and outside of the survey area. Considering that the isolated find consisted of a single artifact that is representative of wide periods of manufacture and use, no delineation tests were conducted at Isolated Find 3. Due to artifact paucity, Isolated Find 3 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1805 (10-20 cmbs)
1 0.66 g clear container glass/machine mold seam, bottle/jar

Isolated Find 4

Isolated Find 4 consisted of a single Baytown Plain sherd recovered from a depth of 0 to 10 cmbs on a hill (see Figure 5.5). The resource is located 230 m west of an unnamed tributary of Cub Creek. At the time of TAVR's survey, the resource was located in a terraced corn field. A total of 13 tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 482) yielded the isolated sherd. As discussed in the following chapter, Baytown Plain is typically associated with Woodland occupations in the region. Site 40MD272 is located 170 m north of Isolated Find 4 and the deposition of this isolated artifact could be related to activities at that site. Due to artifact paucity, Isolated Find 4 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 482 (0-10 cmbs)
1 3.2 g Baytown Plain

Isolated Find 5

Isolated Find 5, a piece of debitage produced from St. Louis chert, was recovered from the ground surface of a corn field on a hill top (see Figure 5.5). The resource is located 182 m west of an unnamed tributary of Cub Creek. A total of 13 shovel tests were excavated during TVAR's investigation of this resource, none of which produced any additional artifacts. Site 40MD272 is located 96 m north of Isolated Find 5 and the deposition of this isolated artifact could be related to activities at that site. Due to artifact paucity, Isolated Find 5 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Surface Collection Point 5003
1 1.96 g 1/2-inch debitage, St. Louis chert

Isolated Find 6

Isolated Find 6 consisted of a debitage specimen produced from Fort Payne chert recovered in a corn field on a hill top (see Figure 5.5). The resource is located 107 m east of an unnamed tributary of Cub Creek. Thirteen tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 471) yielded the debitage from a depth of 0 to 15 cmbs. Additionally, a piece of unmodified sandstone was collected from the ground surface. Due to artifact paucity, Isolated Find 6 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Surface Collection Point 5001

	40.82 g	unmodified sandstone

Shovel Test 471 (0-15 cmbs)

1	0.61 g	1/4-inch debitage, Fort Payne chert

Isolated Find 7

Isolated Find 7 consisted of two fragments of yellowware and a piece of unmodified sandstone recovered from the ground surface of a corn field on a hill top (see Figure 5.5). This resource is located 909 m north of Womack Lane and 317 m west of an unnamed tributary of Cub Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. A total of 19 tests were excavated during TVAR's investigation of this resource; however, no artifacts were recovered during subsurface testing. Annular yellowware was produced by 1840 until 1900. Isolated Find 7 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Surface Collection Point 5000

1	26 g	blue annular yellowware
1	1.34 g	plain yellowware
	125.26 g	unmodified sandstone

Isolated Find 8

Isolated Find 8 consisted of a ferrous metal cast iron fragment and a brick fragment recovered from the ground surface of a corn field on a hill slope (see Figure 5.4). The resource was situated 806 m north of Womack Lane and 285 m southwest of an unnamed tributary of Cub Creek. One shovel test was excavated at the resource, but it did not produce any artifacts. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947.

Considering that the isolated find consisted of two artifacts that are representative of wide periods of manufacture and use and that no structures are located near the resource, no additional delineation tests were conducted at Isolated Find 8. At the time of the survey surface visibility was very good (approximately 50 percent visibility) and the area surrounding Isolated Find 8 was intensively inspected. Isolated Find 8 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Surface Collection Point 4020

1	620 g	ferrous metal cast iron possible stove fragment
1	26.12 g	brick fragment

Isolated Find 9

Isolated Find 9, a fragment of undifferentiated white bodied refined earthenware excavated from 0 to 15 cmbs in Shovel Test 1785, was identified on a loess hill (see Figure 5.13). At the time of TVAR's investigation, the resource was located in a corn field. Isolated Find 9 was situated 226 m east of Denmark-Jackson Road and adjacent to a pond created by impounding an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single artifact that is representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 9. The artifact was identified in an area heavily disturbed by the construction of the pond. Due to artifact paucity, Isolated Find 9 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1785 (0-15 cmbs)

1	0.92 g	plain undifferentiated white bodied refined earthenware

Isolated Find 10

Isolated Find 10 consisted of stoneware (n=1), porcelain (n=1), and clear (n=1) and amber (n=1) container glass recovered from the ground surface of the dry bed of an unnamed tributary of Cub Creek surrounded by a hardwood forest (see Figure 5.12). The resource was situated 465 m south of Womack Lane and 567 m west of Denmark-Jackson Road. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of four artifacts located in a stream bed and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 10. It is believed that

the artifacts found at IF 10 are the result of historic refuse disposal. Due to artifact paucity, Isolated Find 10 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below. The artifacts recovered during TVAR's investigation of the resource are listed below.

Surface Collection Point 4100

1	132.83 g	molded Albany glazed stoneware, plate
1	88.82 g	polychrome decal print, gilded porcelain bowl, floral design
1	280.65 g	clear molded container glass/machine mold seam/cup bottom base, bottle w/"6"/"PENICK + FORD LTD"/"INC"/"8 Owens-Illinois Glass Company maker mark 4" embossing with two handles
1	446.3 g	amber molded container glass/machine mold seam/cup bottom base/external thread (small) finish, bottle w/"T"/"18 66"/"PAT. DES. 187.302"/"16" embossing with stippling

Isolated Find 11

Isolated Find 11 consisted of a debitage specimen produced from Fort Payne chert recovered in a corn field on a hill top (see Figure 5.5). The resource is located 328 m west of an unnamed tributary of Cub Creek. Thirteen tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 192) yielded the debitage from a depth of 0 to 10 cmbs. Due to artifact paucity, Isolated Find 11 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Shovel Test 192 (0-10 cmbs)

1	0.23 g	<1/4-inch debitage, Fort Payne chert

Isolated Find 12

Isolated Find 12, two specimens of debitage produced from Fort Payne chert, was recovered along a hill slope in an agricultural field (see Figure 5.12). The resource was located 330 m east of an unnamed tributary of Cub Creek. Four tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 2591) yielded the debitage from 5 to 20 cmbs. Due to artifact paucity, Isolated Find 12 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Shovel Test 2591 (5-20 cmbs)

1	1.35 g	1/4-inch debitage, Fort Payne chert
1	0.23 g	<1/4-inch debitage, Fort Payne chert

Isolated Find 13

Isolated Find 13 consisted of two clear glass bottles recovered from the ground surface adjacent to the dry bed of an unnamed tributary of Cub Creek (see Figure 5.14). One of the bottles displayed a maker mark indicating that it was manufactured between 1905 and 1987. At the time of TVAR's survey, the resource was situated in a wide drainage cutting through loess hills covered by kudzu. It was located 345 m east of Denmark-Jackson Road. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of artifacts representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 13. It is believed that the artifacts found at Isolated Find 13 are the result of historic refuse disposal. Isolated Find 13 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Surface Collection Point 7001

1	76.32 g	clear molded container glass/machine mold seam/cup bottom base/external thread (small) finish, bottle w/"Pierce Glass Company maker mark"/"2 FL OZ"/"6" embossing
1	74.31 g	clear molded container glass/machine mold seam/cup bottom base/external thread (small) finish, bottle w/"illegible maker mark"/"2 FL OZ"/"7" embossing

Isolated Find 14

Isolated Find 14, a piece of aqua container glass excavated from 5 to 20 cmbs in Shovel Test 3004, was identified along a loess hill within an agricultural field (see Figure 5.6). It was located 587 m west of Denmark-Jackson Road and 68 m south of an unnamed tributary of Cub Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single fragment of container glass that is representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 14. At the time of the survey surface visibility was very good (approximately 50 percent visibility) and the area surrounding Isolated Find 14 was intensively inspected. Isolated Find 14 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 3004 (5-20 cmbs)

1	9.33 g	aqua container glass

Isolated Find 15

Isolated Find 15, a stemmed hafted biface produced from St. Louis chert, was recovered from the ground surface of an agricultural field adjacent to a grass field road on a hill top (see Figure 5.5). The resource is located 197 m east of an unnamed tributary of Cub Creek and 112 m north of 40MD273. A total of 13 tests were excavated during TVAR's investigation of this resource, none of which yielded artifacts. Due to artifact paucity, Isolated Find 15 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Surface Collection Point 3077

1 4.87 g stemmed hafted biface, St. Louis chert

Isolated Find 16

Isolated Find 16, one piece of debitage produced from Dover chert, was recovered in a mixed hardwood forest along the upper edge of a loess bluff (see Figure 5.4). The resource was situated 57 m west of an unnamed tributary of Cub Creek. A total of 13 tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 3445) produced the piece of debitage from a depth of 0 to 15 cmbs. Due to artifact paucity, Isolated Find 16 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 3445 (0-15 cmbs)

1 1.39 g 1/4-inch debitage, Dover chert

Isolated Find 17

Isolated Find 17 consisted of a biface fragment produced from Dover chert recovered from a corn field situated on the northeast edge of a hill top (see Figure 5.3). The resource was located 156 m west of an unnamed tributary of Cub Creek. A total of 13 tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 622) yielded the biface fragment from a depth of 0 to 10 cmbs. Due to artifact paucity, Isolated Find 17 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 622 (0-10 cmbs)

1 2.27 g biface fragment, Dover chert

Isolated Find 18

Isolated Find 18 consisted of a fragment of solarized amethyst glass excavated from 15 to 30 cmbs in Shovel Test 1049 (see Figure 5.10). The resource was identified in a hardwood forest along a loess bluff and was located 1.1 km east of Denmark-Jackson Road and 386 m west of an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. However, the resource is located 15 m northwest of the Tennessee Midland Railroad. Solarized amethyst glass was produced from 1865 until 1920. Considering that the isolated find consisted of a single artifact and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 18. Due to artifact paucity, Isolated Find 18 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1049 (15-30 cmbs)

1 1.57 g amethyst (solarized) container glass

Isolated Find 19

Isolated Find 19, a piece of blue-edged molded pearlware, was recovered from the ground surface of a terraced cotton field on a hill slope (see Figure 5.14). The resource was identified 690 m east of Denmark-Jackson Road and 290 m northeast of an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. The resource is located 150 m northwest of the Tennessee Midland Railroad. The isolated find was located adjacent to a unimproved field road. This field road is depicted on the 1981 photorevision of the Westover quadrangle, but not earlier topographic maps of the area. Production of pearlware began in 1779 and began being phased out by 1820. It was no longer circulating by 1840. Considering that the isolated find consisted of a single artifact recovered from the ground surface and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 19. At the time of the survey surface visibility was very good (approximately 50 percent visibility) and the area surrounding Isolated Find 19 was intensively inspected. Due to artifact paucity, Isolated Find 19 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Surface Collection Point 5020

1 13.05 g molded, blue-edged pearlware

Isolated Find 20

Isolated Find 20, a piece of clear container glass, was recovered on a hill top 375 m southeast of the intersection of Womack Lane and Denmark-Jackson Road (see Figure 5.14). The resource is located 201 m southwest an unnamed tributary of Johnson Creek. At the time of TVAR's investigation, the resource lay within a cotton field. One structure is depicted approximately 85 m east of the resource on the 1877 map of Madison County, but as detailed in the site description for 40MD279 this house location is believed to be further to the west than depicted on the map. This structure is not discernible on USGS aerial imagery taken in 1947 and is not shown on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles. No additional structures are mapped in the vicinity of the resource. Six shovel tests were excavated during TVAR's investigation of the resource, one of which (Shovel Test 1373) produced the glass fragment from 10 to 25 cmbs. Due to artifact paucity, Isolated Find 20 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1373 (10-25 cmbs)

1	1.32 g	clear container glass/machine mold seam/external thread (large) finish, jar

Isolated Find 21

Isolated Find 21 consisted of a piece of plain whiteware recovered from 10 to 20 cmbs in Shovel Test 1455 adjacent to an unnamed tributary of Johnson Creek (see Figure 5.14). At the time of TVAR's survey, the resource was situated in a cotton field in a drainage between loess hills. It was located 553 m southeast of Denmark-Jackson Road. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single artifact that is representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 21. At the time of the survey surface visibility was very good (approximately 50 percent visibility) and the area surrounding Isolated Find 21 was intensively inspected. Due to artifact paucity, Isolated Find 21 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1455 (10-20 cmbs)

1	0.53 g	plain whiteware

Isolated Find 22

Isolated Find 22 consisted of one fragment of clear container glass excavated from 20 to 30 cmbs in Shovel Test 1464 (see Figure 5.14). The resource was identified in a corn field along the raised embankment of the Tennessee Midland Railroad. It was located 837 m southeast of Denmark-Jackson Road and 179 m southwest of an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single piece of clear container glass that is representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 22. At the time of the survey surface visibility was very good (approximately 50 percent visibility) and the area surrounding Isolated Find 22 was intensively inspected. Due to artifact paucity, Isolated Find 22 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1464 (20-30 cmbs)
1 0.86 g clear container glass

Isolated Find 23

Isolated Find 23 consisted of a coarse grog/fine sand-tempered eroded pottery sherd and a fragment of clear container glass recovered in a corn field on a hill top (see Figure 5.14). The resource was located 1.1 km southeast of Denmark-Jackson Road and 227 m northeast of an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Ten shovel tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 5152) produced the fragment of glass from 5 to 15 cmbs. The eroded sherd was collected from the ground surface. No other surface artifacts were observed in this location. Due to artifact paucity, Isolated Find 23 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Surface Collection Point 5025
1 3.14 g coarse grog/fine sand-tempered eroded
Shovel Test 5152 (5-15 cmbs)
1 0.53 g clear container glass/machine mold seam, bottle/jar

Isolated Find 24

Isolated Find 24 consisted of one fragment of amber container glass excavated from 15 to 30 cmbs in Shovel Test 1612 (see Figure 5.14). The resource was identified in a corn field 25 m northwest of the Tennessee Midland Railroad. It was located 759 m southeast of Denmark-Jackson Road and 128 m southwest of an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single artifact that is representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 24. At the time of the survey surface visibility was very good (approximately 50 percent visibility)and the area surrounding Isolated Find 24 was intensively inspected. Due to artifact paucity, Isolated Find 24 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1612 (15-30 cmbs)

1	0.82 g	amber container glass

Isolated Find 25

Isolated Find 25 consisted of clear container glass (n=1), ferrous metal wire (n=1), and a brick fragment recovered along a hill slope (see Figure 5.7). At the time of TVAR's survey, the resource was located 88 m south of Womack Lane in a hardwood forest. Nine shovel tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 2562) yielded the three artifacts from 0 to 15 cmbs. No structures are present in the vicinity of the resource on the 1877 map of Madison County. One structure is visible 80 m northwest of Isolated Find 25 on USGS aerial imagery taken in 1947 and on the USGS 1959 Westover 7.5-minute topographic quadrangle. The structure is still present on the USGS 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangle. The 1981 photorevision also depicts an additional structure 70 m northwest of the resource. Both were present at the time of the survey. Large debris, such as sheet metal and a trailer, were dumped near the resource. Consequently, it is likely that the resource is the result of historic or near modern dumping associated with one of the nearby extant structures. Due to artifact paucity, Isolated Find 25 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Shovel Test 2562 (0-15 cmbs)

1	0.27 g	clear container glass
1	3.88 g	ferrous metal wire, fencing
1	609.66 g	brick fragment, solid

Isolated Find 26

Isolated Find 26 consisted of whiteware (n=1) and aqua (n=1) and solarized amethyst (n=3) container glass recovered from the ground surface in a shallow wash that drains into an unnamed tributary of Johnson Creek 60 m to the southeast (see Figure 5.13). The resource was located 20 m south of NSCR 3 in a a corn field and 138 m east of Denmark-Jackson Road. One shovel test was excavated, though no additional artifacts were recovered. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find was located on the ground surface in a wash and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 26. Due to artifact paucity, Isolated Find 26 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Surface Collection Point 7000

1	0.51 g	plain whiteware
1	0.67 g	amethyst (solarized) container glass
1	58.02 g	aqua container glass/cup bottom base, bottle/jar w/undifferentiated embossing
1	15.76 g	amethyst (solarized) molded container glass w/"K" embossing
1	56.9 g	amethyst (solarized) container glass/machine mold seam/brandy finish, bottle

Isolated Find 27

Isolated Find 27, an amber glass bottle, was recovered from a hardwood forest at the upper edge of a loess bluff (see Figure 5.3). The resource was situated 760 m west of Denmark-Jackson Road and 116 m north of an unnamed tributary of Cub Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County. One structure is visible 65 m northwest of the resource on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles and USGS historic aerial imagery taken in 1947. This structure was no longer present on USGS aerial imagery taken in 1997. Nine shovel tests were excavated during TVAR's investigation of the resource, one of which (Shovel Test 2403) yielded the amber glass bottle from the first 10 cm of deposits. The maker mark present on the bottle indicates that it was manufactured between 1924 and 1938. Due to artifact paucity, Isolated Find 27 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project.

Shovel Test 2403 (0-10 cmbs)

1	101.77 g	amber container glass/machine mold seam/cup bottom base/reinforced extract finish, bottle w/"LYSOL"/"L.&F. PROD. CORP."/"BLOOMFIELD N.J."/"BOTTLE MADE"/"IN U.S.A."/"Whitall Tatum & Company maker mark" embossing

Isolated Find 28

Isolated Find 28 consisted of debitage produced from St. Louis (n=1) and Citronelle gravel (n=1) chert recovered from the ground surface of a corn field situated on a hill top (see Figure 5.3). The specimen produced from St. Louis chert displayed both unifacial and bifacial retouch. The resource was located 132 m east of an unnamed tributary of Cub Creek. A total of 13 tests were excavated during TVAR's investigation of this resource, though no additional artifacts were recovered. Due to artifact paucity, Isolated Find 28 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Surface Collection Point 5014

1	9.5 g	1/2-inch debitage with steep angled unifacial and bifacial retouch, St. Louis chert, utilized
1	2.04 g	1/2-inch debitage, Citronelle gravel chert, cortex
1	2.39 g	1/2-inch debitage, Citronelle gravel chert

Isolated Find 29

Isolated Find 29 consisted of a fragment of solarized amethyst container glass recovered on a hill top (see Figure 5.4). At the time of TVAR's investigation, the resource was located in a corn field 858 m north of Womack Lane and 212 m southwest of an unnamed tributary of Cub Creek. Three shovel tests were excavated during investigation of this resource, one of which (Shovel Test 3396) yielded the piece of glass from 0 to 10 cmbs. Solarized amethyst glass was produced from 1865 until 1920. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Isolated Find 29 is located 118 m south of 40MD269 and the artifact excavated at this location could be associated with activities at the aforementioned site. Considering that the isolated find consisted of a single artifact and that no structures are located near the resource, delineation testing at Isolated Find 29 was limited. Due to artifact paucity, Isolated Find 29 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 3396 (0-10 cmbs)

1	2.3 g	amethyst (solarized) molded container glass/undifferentiated finish, bottle/jar

Isolated Find 30

Isolated Find 30 consisted of a fragment of green container glass recovered along the edge of a loess bluff (see Figure 5.4). At the time of TVAR's investigation, the resource was located in a mixed hardwood forest 870 m north of Womack Lane and 212 m southwest of an unnamed tributary of Cub Creek. Three shovel tests were excavated during the investigation of this resource, one of which (Shovel Test 776) yielded the piece of glass from 0 to 5 cmbs. The date code mark present on the artifact indicates it was produced in 1964. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single artifact and that no structures are located near the resource, delineation testing at Isolated Find 30 was limited. Due to artifact paucity, Isolated Find 30 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 776 (0-5 cmbs)

1 148.25 g green molded container glass/machine mold seam/cup bottom base, bottle/jar w/"6 Laurens Glass Works maker mark 4"/"CONTENTS"/"1 PT 12 FL. OZS"/"4"/"658" embossing with stippling and stippled design

Isolated Find 31

Isolated Find 31 consisted of a ferrous metal K-lock nut recovered from the first 10 cmbs in Shovel Test 1301 (see Figure 5.14). At the time of TVAR's investigation, the resource was located in a cotton field 775 m east of Denmark-Jackson Road and 126 m northeast if an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single artifact that is representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 31. Due to artifact paucity, Isolated Find 31 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1301 (0-10 cmbs)

1 20.7 g ferrous metal K-lock nut

Isolated Find 32

Isolated Find 32, a fragment of solarized amethyst container glass excavated from the first 10 cmbs of Shovel Test 5022 (see Figure 5.14). The resource was recovered in a terraced cotton field located 636 m east of Denmark-Jackson Road and 174 m northeast if an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single piece of container glass and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 32. Due to artifact paucity, Isolated Find 32 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 5022 (0-10 cmbs)

1	5.09 g	amethyst (solarized) container glass

Isolated Find 33

Isolated Find 33 consisted of six fragments of solarized amethyst container glass recovered from a loess bluff adjacent to the dry bed of an unnamed tributary of Cub Creek surrounded by a hardwood forest (see Figure 5.12). The resource was situated 495 m south of Womack Lane and 536m west of Denmark-Jackson Road. Eight shovel tests were excavated during TVAR's investigation of the resource, one of which (Shovel Test 2813) produced the fragments of solarized amethyst glass from the first 15 cm of deposits. Solarized amethyst glass was produced from 1865 until 1920. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Due to artifact paucity, Isolated Find 33 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Shovel Test 2813 (0-15 cmbs)

1	0.45 g	amethyst (solarized) container glass w/undifferentiated embossing
2	37.17 g	amethyst (solarized) molded container glass
1	0.85 g	amethyst (solarized) container glass w/"M" embossing
1	0.6 g	amethyst (solarized) container glass
1	7.62 g	amethyst (solarized) molded container glass w/"...ULL" embossing

Isolated Find 34

Isolated Find 34 was a fragment of blue-edged pearlware recovered from the edge of a loess bluff in a hardwood forest (see Figure 5.10). The resource was identified 1.2 km east of Denmark-Jackson Road and 370 m west of an unnamed tributary of Johnson Creek. Nine shovel tests were excavated during investigation of this resource, one of which (Shovel Test 7173) yielded the fragment

of pearlware from 40 to 50 cmbs. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. However, the resource is located 20 m northwest of the Tennessee Midland Railroad. Pearlware was produced from 1779 until 1820 and was largely out of circulation by 1840. Due to artifact paucity, Isolated Find 34 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 7173 (40-50 cmbs)
1 2.28 g molded, blue-edged pearlware

Isolated Find 35

Isolated Find 35 consisted of a molded porcelain fragment excavated from 0 to 5 cmbs in Shovel Test 166. At the time of TVAR's survey, the resource was located in a corn field on a hill top (see Figure 5.5). This site is located 653 m north of Womack Lane and 151 m west of an unnamed tributary of Cub Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single artifact that is representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 35. At the time of the survey surface visibility was very good (approximately 50 percent visibility) and the area surrounding Isolated Find 35 was intensively inspected. Due to artifact paucity, Isolated Find 35 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 166 (0-5 cmbs)
1 13.66 g molded porcelain vessel fragment

Isolated Find 36

Isolated Find 36, a piece of debitage produced from undifferentiated chert was located in a corn field on a hill top (see Figure 5.5). The resource is located 352 m west of an unnamed tributary of Cub Creek. A total of 13 shovel tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 364) produced the debitage specimen from a depth of 15 to 30 cmbs. Due to artifact paucity, Isolated Find 36 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 364 (15-30 cmbs)
1 0.59 g 1/4-inch debitage, undifferentiated chert

Isolated Find 37

Isolated Find 37 consisted of an undifferentiated hafted biface produced from Citronelle gravel chert recovered from the ground surface of a corn field (see Figure 5.8). The resource was located on a hill slope 20 m west of a pond created by impounding an unnamed tributary of Cub Creek. A total of 13 tests were excavated during TVAR's investigation of this resource, though no additional artifacts were recovered. Due to artifact paucity, Isolated Find 37 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Surface Collection Point 5007

1	8.37 g	undifferentiated hafted biface, Citronelle gravel chert

Isolated Find 38

Isolated Find 38 consisted of two pieces of clear glass recovered from the first 5 cm of deposits in a single shovel test (see Figure 5.4). At the time of TVAR's investigation, the resource was located in hardwood forest along the upper edge of a loess bluff. The resource was situated 800 m north of Womack Lane and 190 m south of an unnamed tributary of Cub Creek. Fifteen shovel tests were excavated during TVAR's investigation of this resource, one of which (Shovel test 790) yielded the two glass fragments. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Due to artifact paucity, Isolated Find 38 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Shovel Test 790 (0-5 cmbs)

1	349.04 g	clear molded container glass/machine mold seam/cup bottom base/external thread (small) finish, bottle w/illegible/"Hazel-Atlas Glass Company maker mark"/illegible embossing with handle
1	222.66 g	clear molded container glass/machine mold seam/cup bottom base/external thread (large) finish, jar w/"7 Owens-Illinois Glass Company maker mark 8"/"6"/"DURAGLAS"/"C 2933" embossing with stippling

Isolated Find 39

Isolated Find 39 consisted of a fragment of light green container glass excavated from the first 5 cmbs of Shovel Test 808 (see Figure 5.5). At the time of TVAR's survey, the resource was situated along a loess bluff in a hardwood forest. The resource is located 1 km north of Womack Lane, 1.1 m west of Denmark-Jackson Road, and 133 m east of an unnamed tributary of Cub Creek. No structures

are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single container glass fragment and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 39. Considering that no structures are located near the resource, no delineation tests were conducted at Isolated Find 39. As further discussed in Chapter 6, the maker mark on the bottle fragment recovered at the site was used from 1927 to 1987. Due to artifact paucity, Isolated Find 39 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project.

Shovel Test 808 (0-5 cmbs)

1	427.5 g	light green molded container glass/machine mold seam/cup bottom base/crown finish, soda bottle w/"BAY CITY MICH"/"BOTTLE TRADE MARK"/"Chattanooga Glass Company maker mark" embossing with applied color label

Isolated Find 40

Isolated Find 40 consisted of a fragment of solarized amethyst glass and a fragment of light green flat glass excavated from 0 to 10 cmbs in Shovel Test 1036 (see Figure 5.15). The resource was identified in a terraced cotton field along a hill slope and was located 682 m southeast of Denmark-Jackson Road and 410 m northwest of an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. However, the resource is located 20 m northwest of the Tennessee Midland Railroad. Considering that the isolated find consisted of a single artifact and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 40. Considering that no structures are located near the resource, no delineation tests were conducted at Isolated Find 40. Due to artifact paucity, Isolated Find 40 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Shovel Test 1036 (0-10 cmbs)

1	0.57 g	amethyst (solarized) container glass w/"A..." embossing
1	0.62 g	light green flat glass

Isolated Find 41

Isolated Find 41 consisted of a piece of debitage produced from Fort Payne chert (see Figure 5.15). The resource was identified in a grass field along a hill slope and was located 130 m west of an unnamed tributary of Johnson Creek. Thirteen tests were excavated during the investigation of this

resource, one of which (Shovel Test 1119) yielded the piece of debitage from a depth of 20 to 35 cmbs. Due to artifact paucity, Isolated Find 41 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1119 (20-35 cmbs)

1	1.23 g	1/2-inch debitage, Fort Payne chert, utilized

Isolated Find 42

Isolated Find 42, consisting of a piece of whiteware and a piece of ironstone, was recovered along a terraced hill slope from Shovel Test 1383 from a depth of 0 to 10 cmbs (see Figure 5.9). At the time of TVAR's survey, the resource was located in a cotton field 402 m east of Denmark-Jackson Road and 81 m west of an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of two artifacts representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 42. Considering that no structures are located near the resource, no delineation tests were conducted at Isolated Find 42. Due to artifact paucity, Isolated Find 42 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Shovel Test 1383 (0-10 cmbs)

1	4.51 g	plain ironstone
1	0.74 g	molded whiteware

Isolated Find 43

Isolated Find 43, a piece of plain ironstone, was recovered from 0 to 10 cmbs in Shovel Test 1451 on a hill top (see Figure 5.14). At the time of TVAR's survey, the resource was located along a fenceline in a cotton field 563 m southeast of the intersection of Womack Lane and Denmark-Jackson Road (Figure 5.95). The resource is located 90 m southwest an unnamed tributary of Johnson Creek. One structure is depicted approximately 85 m northeast of the resource on the 1877 map of Madison County, which further indicates that the structure belongs to "Geo. Williamson." This structure is not discernible on USGS aerial imagery taken in 1947 and is not shown on the USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles. No additional structures are mapped in the vicinity of the resource. Considering that the isolated find consisted of a single artifact that is representative of wide periods of manufacture and use and that no structures are located in the immediate vicinity of the resource, no delineation tests were conducted at Isolated Find 43. Considering

that no structures are located near the resource, no delineation tests were conducted at Isolated Find 43. Due to artifact paucity, Isolated Find 43 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1451 (0-10 cmbs)
1 5.68 g plain ironstone

Isolated Find 44

Isolated Find 44 consisted of a piece of debitage produced from undifferentiated chert recovered from an agricultural field on a low hill (see Figure 5.13). The resource was situated 158 m northeast of an unnamed tributary of Johnson Creek. A total of 13 tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 1591) yielded the debitage from a depth of 0 to 10 cmbs. Due to artifact paucity, Isolated Find 44 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1591 (0-10 cmbs)
1 4.12 g 1/2-inch debitage, undifferentiated chert

Isolated Find 45

Isolated Find 45, consisting of a fragment of solarized amethyst container glass was recovered from 0 to 10 cmbs in Shovel Test 1646 on a hill top (see Figure 5.13). At the time of TVAR's survey, the resource was located in a corn field 55 m southeast of an unnamed tributary of Johnson Creek and 275 m southeast of Denmark-Jackson Road. Solarized amethyst glass was produced from 1865 until 1920. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single artifact and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 45. Due to artifact paucity, Isolated Find 45 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1646 (0-10 cmbs)
1 18.72 g amethyst (solarized) container glass/mold blown mold seam, bottle/jar

Isolated Find 46

Isolated Find 46, consisting of a fragment of clear container glass was recovered from 30 to 45 cmbs in Shovel Test 1711 on an terraced hill slope (see Figure 5.13). At the time of TVAR's survey, the resource was located in a corn field 164 m southeast of an unnamed tributary of Johnson Creek and 402 m southeast of Denmark-Jackson Road. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single artifact representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 46. Considering that no structures are located near the resource, no delineation tests were conducted at Isolated Find 46. Due to artifact paucity, Isolated Find 46 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1711 (30-45 cmbs)

1	1.04 g	clear molded container glass

Isolated Find 47

Isolated Find 47 consisted of two fragments of clear container glass excavated from 5 to 30 cmbs in Shovel Test 2002 on a hill slope adjacent to Denmark-Jackson Road (see Figure 5.13). At the time of TVAR's investigation, the resource was located in a grass field. No structures are present in the vicinity of the resource on the 1877 map of Madison County. As seen on USGS historic aerials and topographic quadrangles, six structures were constructed in a cluster located 75 to 100 m southwest of the resource between 1947 and 1981. However, no structures are located within the immediate vicinity of Isolated Find 47. Considering that the isolated find consisted of a single artifact that is representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 47. Considering that no structures are located near the resource, no delineation tests were conducted at Isolated Find 48. Due to artifact paucity, Isolated Find 47 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Shovel Test 2002 (5-30 cmbs)

1	0.34 g	clear container glass
1	22.26 g	clear container glass/machine mold seam/external thread (small) finish, bottle

Isolated Find 48

Isolated Find 48, a fragment of clear flat glass excavated from 15 to 30 cmbs in Shovel Test 2053, was identified on a hill adjacent to a pond created by impounding an unnamed tributary of Johnson Creek (see Figure 5.13). At the time of TVAR's investigation, the resource was located in a corn field. Isolated Find 48 was situated 182 m east of Denmark-Jackson Road. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that the isolated find consisted of a single piece of clear flat glass that is representative of wide periods of manufacture and use and that no structures are located near the resource, no delineation tests were conducted at Isolated Find 48. Considering that no structures are located near the resource, no delineation tests were conducted at Isolated Find 48. The artifact was identified in an area heavily disturbed by the construction of the pond. Due to artifact paucity, Isolated Find 48 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 2053 (15-30 cmbs)

1	0.76 g	clear flat glass

Isolated Find 49

Isolated Find 49 consisted of two fragments of milk glass canning jar lid insert and a ferrous metal spike excavated from 30 to 40 cmbs in Shovel Test 2152 (see Figure 5.15). The resource was identified in an agricultural field along the raised embankment of the Tennessee Midland Railroad, and the spike recovered at the resource is associated with the railroad. It was located 717 m southeast of Denmark-Jackson Road and 290 m northwest of an unnamed tributary of Johnson Creek. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Considering that no structures are located near the resource, no delineation tests were conducted at Isolated Find 49. At the time of the survey surface visibility was very good (approximately 50 percent visibility) and the area surrounding Isolated Find 49 was intensively inspected. Due to artifact paucity, Isolated Find 49 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifacts recovered during TVAR's investigation of the resource are listed below.

Shovel Test 2152 (30-40 cmbs)

1	4.75 g	milk container glass/canning jar lid insert w/"S" embossing
1	1.9 g	milk container glass/canning jar lid insert w/"P" embossing
1	217.8 g	ferrous metal spike

Isolated Find 50

Isolated Find 50, a fragment of clear container glass, was recovered along a hill slope in an agricultural field (see Figure 5.12). The resource was located 330 m east of an unnamed tributary of Cub Creek and 109 m south of Womack Lane. Four tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 2566) yielded the clear container glass from 0 to 15 cmbs. No structures are depicted in the vicinity of the site on the 1877 map of Madison County. Historic USGS aerial imagery taken in 1947 shows a structure 70 m northeast of the resource. This structure was not depicted on the USGS 1959 Westover 7.5-minute topographic quadrangle, though a structure was shown 50 m north of the resource on the map. The USGS 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangle also shows this structure. Given the slight discrepancies inherent to historic mapping, it is possible that the structure depicted on the quadrangles is the same as that seen on the 1947 aerial imagery. No structure is visible within or near the resource in USGS aerial imagery taken in 1997, and no structural remains were observed at the time of TVAR's survey. This structure is associated with 40MD278, which is located 50 m northwest of Isolated Find 50. Considering that the isolated find consisted of a single artifact representative of wide periods of manufacture and use, delineation testing at Isolated Find 29 was limited. Due to artifact paucity, Isolated Find 50 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 2566 (0-15 cmbs)

1	2.84 g	clear molded container glass/machine mold seam, bottle/jar with stippled design

Isolated Find 51

Isolated Find 51 consisted of a piece of debitage produced from Citronelle gravel chert recovered in a corn field along a loess bluff (see Figure 5.4). The resource was located 216 m west of an unnamed tributary of Cub Creek. A total of 13 shovel tests were excavated during TVAR's investigation of this resource, one of which (Shovel Test 3451) yielded the piece of debitage from 0 to 10 cmbs. Due to artifact paucity, Isolated Find 51 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 3451 (0-10 cmbs)

1	3.71 g	1/2-inch debitage, Citronelle gravel chert, utilized

Isolated Find 52

Isolated Find 52, a coarse grog/fine sand-tempered sherd, was recovered from a corn field on a hill top (see Figure 5.13). The recovery was located 50 m south of an unnamed tributary of Johnson

Creek. Nine shovel tests were excavated during TVAR's investigation of the resource, one of which (Shovel Test 1654) yielded the sherd from a depth of 0 to 15 cmbs. Due to artifact paucity, Isolated Find 52 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1654 (0-15 cmbs)

1	4.6 g	coarse grog/fine sand-tempered possible cord marked

Isolated Find 53

Isolated Find 52,a piece of whiteware, was recovered from a corn field on a hill top (see Figure 5.13). The recovery was located 40 m south of an unnamed tributary of Johnson Creek. Eight shovel tests were excavated during TVAR's investigation of the resource, one of which (Shovel Test 1655) yielded the whiteware from a depth of 0 to 10 cmbs. No structures are present in the vicinity of the resource on the 1877 map of Madison County, USGS 1959 and 1959 (Photorevised 1981) Westover 7.5-minute topographic quadrangles, or USGS historic aerial imagery taken in 1947. Due to artifact paucity, Isolated Find 53 offers little research potential beyond the findings of the Phase I survey and is recommended not eligible for listing on the NRHP. No further archaeological investigation of this resource is recommended in connection with the proposed project. The artifact recovered during TVAR's investigation of the resource is listed below.

Shovel Test 1655 (0-10 cmbs)

1	4.59 g	plain whiteware

CHAPTER 6. MATERIALS RECOVERED

Field notes, maps, artifacts, photos, and pertinent records generated during the Phase I survey were transported to the TVAR laboratory in Huntsville, Alabama. Artifacts and other associated materials recovered during the survey were thoroughly washed and allowed to air dry. Provenience information was verified for accuracy during this stage, and all materials were accounted for by a physical inventory. All items were assigned unique catalog numbers and placed in 4 mil polypropylene resealable bags. Prior to entering the material data into a relational database, a final check of provenience and material data was performed. The data were then entered into the database, and both query-driven and physical data checks were used to verify the accuracy of the entries. All materials and documents generated during this Phase I study will be curated at the Erskine Ramsay Archaeological Repository located at Moundville Archaeological Park. This facility meets U. S. Department of Interior 36 CFR § 79 guidelines. Materials collected during the current survey are summarized below.

Baytown Plain

Baytown Plain is a medium-coarse grog-tempered ware with plain surfaces (Jenkins 1981; Phillips 1970:47-48). This type has a broad temporal range that includes all post-Tchefuncte grog-tempered pottery complexes in the lower Mississippi Valley, and is a typical constituent of Woodland period assemblages in western Tennessee (Mainfort 1994; Mainfort and Chapman 1994:152-153; Mainfort and Walling 1992; Morse and Morse 1983; Peacock 1997). Twelve Baytown Plain specimens were recovered from the survey area (Figure 6.1a).

Withers Fabric Marked

Originally defined by Phillips et al. (1951:73-76) as Withers Fabric-Impressed, this type is a grog-tempered ware with fabric impressions applied to the exterior surface with a paddle or cord-wrapped dowel (also see Jenkins 1981:104-105). Withers Fabric Marked is a typical constituent of Early and Middle Woodland period ceramic assemblages in western Tennessee (Mainfort and Chapman 1994:154-155; Mainfort and Walling 1992). Site 40MD273 yielded two Withers Fabric Marked sherds (Figure 6.1b).

Residual Ceramic Types

In addition to the ceramic types and varieties discussed above, 13 specimens recovered from the project area were included in residual ceramic categories. These categories are labeled by defining temper and surface treatment or condition (e.g., coarse grog tempered eroded, fine shell tempered incised). Eleven of the 13 specimens are too eroded to confidently classify as previously defined types. The 11 specimens are tempered with coarse grog (n=4), coarse grog/coarse sand (n=4), coarse grog/fine sand (n=2), and coarse sand (n=1). Two of the sherds recovered from site 40MD273 have a possible fabric marked decoration.

Figure 6.1. Prehistoric ceramics: (a) Baytown Plain; (b) Withers Fabric Marked.

Sherdlet

Sherdlet represents a <1/2-inch size-grade category. Specimens this size typically are regarded as too small for accurately discerning surface treatment and/or temper. Consequently, sherdlets are not placed into any chronological type. Whenever possible, temper and/or surface treatment is recorded for specimens recovered from proveniences containing only sherdlets or for unique specimens within a provenience. A total of 37 sherdlets was recovered from the survey area, three of which were large enough to determine coarse grog temper.

Lithic Debitage

Debitage is the byproduct of lithic reduction activities, i.e., knapping. Specimens were classified in accordance with Ahler's (1989) aggregate analysis method, in which recorded attributes include raw material type, size grade, and presence of cortex. All debitage was size graded through nested 1/4-inch, 1/2-inch, and 1-inch screens. A total of 41 pieces of debitage was recovered from the survey area. Size-graded specimens consist of <1/4-inch (n=4), 1/4-inch (n=11), 1/2-inch (n=20), and 1-inch (n=6) pieces.

Toolstone material types are based on macroscopic examination of specimen color, diaphaneity, luster, texture, mottling, banding, and fossil content. These assessments are informed by archaeologist's observations of field specimens from the study area, U.S. Geological Survey geologic quadrangle maps, and relevant lithic raw material studies (Parish and Durham 2015; Randall 2000; Stallings 1989; Sweat 2009). Debitage raw material types include Citronelle gravel (n=7), Dover (n=1), Fort Payne (n=8), St. Louis (n=2), and undifferentiated (n=23) cherts. Of the total 41 specimens recovered from the survey area, 22 display cortex.

Figure 6.2. Debitage with unifacial retouch produced from St. Louis chert.

Retouched Debitage

Retouched debitage is a category for debitage specimens that display flake scars indicative of retouch along edges. The retouched debitage is sorted on the basis of size grade, raw material type, unifacial or bifacial modification, and edge angle. All edge angles are acute unless otherwise noted as having steep edge angles. Two retouched St. Louis chert debitage specimens were recovered from the survey area. One of the two exhibits unifacial retouch (Figure 6.2) and the other displays both steep angled unifacially retouched and bifacially retouched edges.

Utilized Debitage

Utilized debitage is a category for debitage specimens that display flake scars produced through use rather than knapping techniques, such as micro-chipping and striations along blade margins (Kooyman 2000:151-165). The survey area yielded two 1/2-inch utilized debitage specimens produced from Citronelle gravel (n=1) and Fort Payne (n=1) cherts.

Core

A core is the large initial piece or mass of stone from which flakes are removed in the lithic process. Cores exhibit one or more negative flake scars and lack the single interior surfaces that characterize flakes. Site 40MD272 produced one Fort Payne chert core.

Stemmed Hafted Biface

Stemmed hafted biface is a residual category for bifaces that display a stemmed hafting element, but cannot be placed with confidence into a defined type. Isolated Find 15 yielded one stemmed hafted biface specimen produced from St. Louis chert (Figure 6.3a). This specimen appears to have been heavily reworked and measures 40.4 mm long by 5.3 mm thick.

Undifferentiated Hafted Biface

Undifferentiated hafted biface is a residual category for bifaces that lack a clear and discernible hafting element and cannot be placed with confidence into a previously defined type. One undifferentiated hafted biface produced from Citronelle gravel chert was recovered from Isolated Find 37 (Figure 6.3b).

Uniface

A uniface is a circular to ovular lithic artifact that exhibits a multiple unifacially retouched edges. Site 40MD272 yielded two uniface specimens produced from Fort Payne (n=1) and St. Louis (n=1) cherts (Figure 6.4).

Biface Fragment

Biface fragment is a category for lithic specimens displaying bifacial flake scar characteristics indicative of biface production, but cannot be classified with confidence as a specific biface section or type. Site Isolated Find 17 yielded one biface fragment produced from Dover chert.

Biface I

Biface I is a category for biface specimens exhibiting characteristics of early stage biface production. These artifacts are generally oval shaped or at least have rounded edges. They show evidence of bifacial edging or thinning, but lack secondary retouch along blade edges. One Biface I specimen produced from Citronelle gravel chert was recovered from 40MD276.

Figure 6.3. Biface specimens: (a) stemmed hafted biface produced from St. Louis chert; (b) undifferentiated hafted biface produced from Citronelle gravel chert.

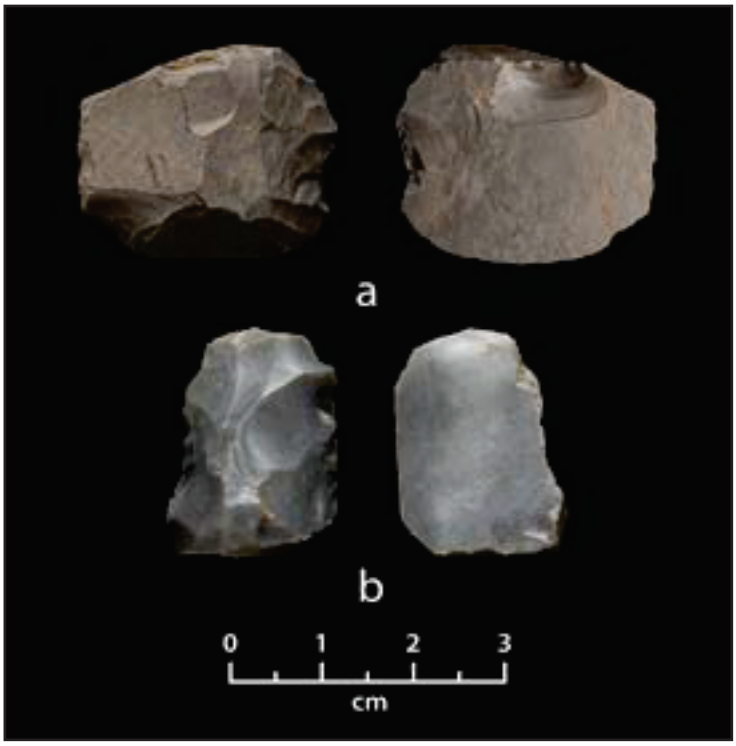

Figure 6.4. Uniface specimens: (a) uniface produced from Fort Payne chert; (b) uniface produced from St.Louis chert.

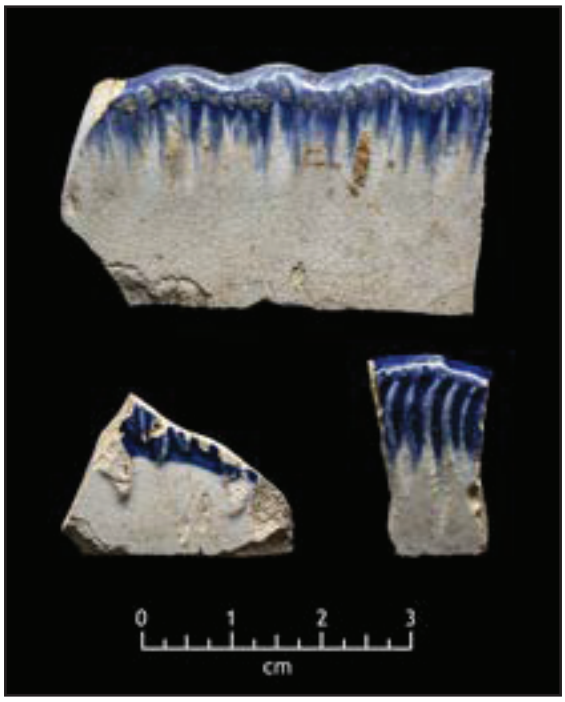

Figure 6.5. Molded, blue-edged pearlware.

Pearlware

Pearlware has a white to light cream-colored paste and a surface color that ranges from white to faint bluish white. The lead glaze of pearlware is not deep and tends to spall off. Pearlware can usually be identified by a faint blue tint where the glaze pooled (Brown 1982; Florida Museum of Natural History 2020). Production of pearlware began in 1779 and began being phased out by 1820 due to the advent of whiteware and semiporcelain. It was no longer circulating by 1840 (Brown 1982; Florida Museum of Natural History 2020; Majewski and O'Brien 1987; Noël Hume 1969). Three pearlware specimens with molded, blue-edged decorations were recovered from the survey area. All three specimens display scalloped rims (Figure 6.5).

Molded ceramics are made when clay is placed into a mold form and fired, leaving a design on the body of the ware. Molding is found on almost every type of earthenware. The creation of the plaster mold in 1750 allowed for a thinner-walled vessel as well as a more consistent lead glaze. Press molding was used throughout the nineteenth century on porcelain and refined white-bodied earthenwares, but was most popular on ironstone beginning around 1840. Molded vessel types include cups, plates, saucers, and platters, among others (Majewski and O'Brien 1987).

Edge-decorated ceramics, also commonly referred to as shell-edged ceramics, were one of the most popular and long-lived styles produced by the English potteries. This style of edge treatment often included a cockle shell-like rim with a blue, green, or red underglaze (Stelle 2001). The outer edge of the vessel was usually scalloped, and common vessel forms included bowl, cup, pitcher, plate, and platter (Noël Hume 1969; Samford and Miller 2015). Edge-decorated pearlware production began as early as ca. 1780 (Brown 1982).

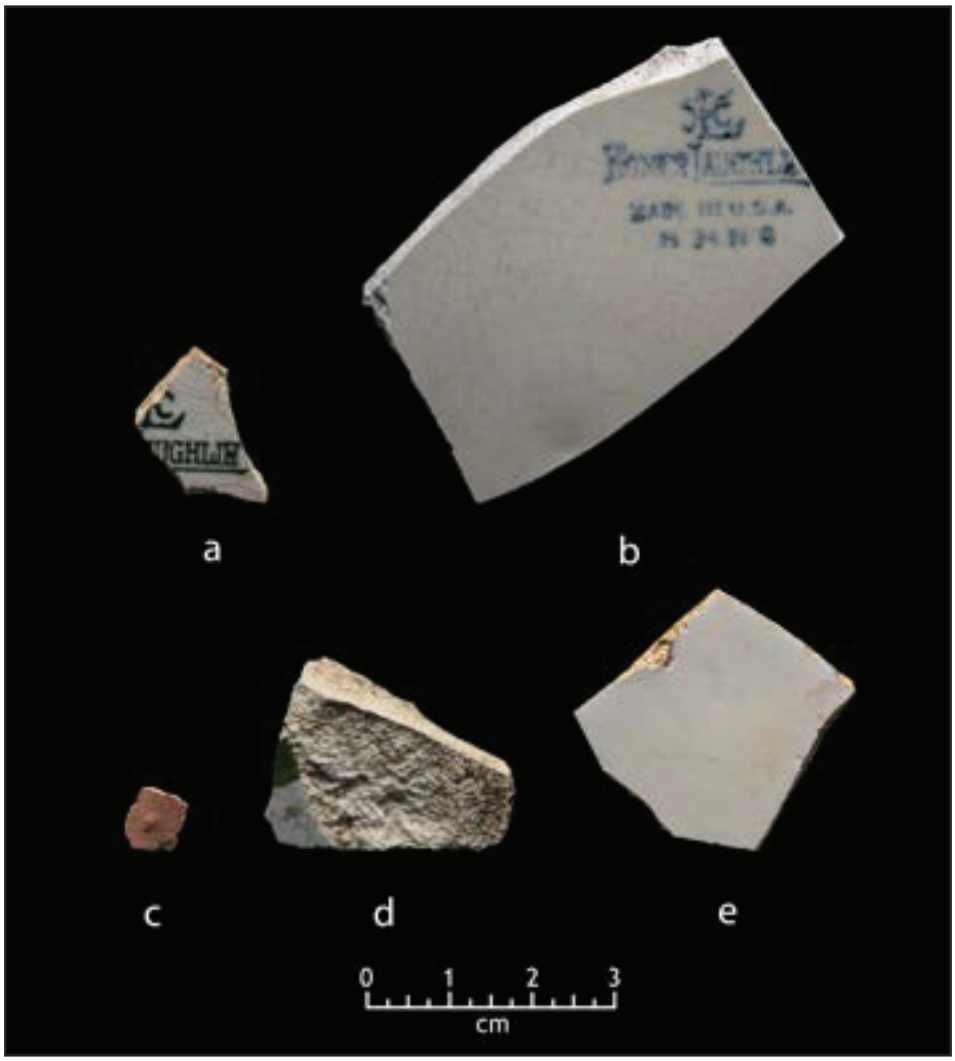

Figure 6.6. Whiteware specimens: (a) Homer-Laughlin China Company maker mark; (b) Homer-Laughlin China Company maker mark; (c) red-slipped; (d) green hand-painted; (e) polychrome floral decal print remnant.

Whiteware

Whiteware is a white to off-white in color refined earthenware, with a compact, hard paste and clear glaze (Brown 1982). Whiteware began evolving from the pearlware industry around 1820 and continues to be manufactured today (Noël Hume 1969). A total of 30 whiteware specimens were recovered from the survey area, one of which has a relief-molded design. Twenty-five of the total 30 are undecorated, one of which is a plate specimen. Another two of the 25 undecorated specimens have a Homer-Laughlin China Company maker mark, one of which has a mark that was in use from 1879 to 1912 (Figure 6.6a) (Lehner 1988:247-248). Homer and Shakespeare Laughlin founded their pottery in 1871 in East Liverpool, Ohio. Shakespeare sold his share of the company in 1877, and in 1897, Homer sold the company to W.E. Wells, Louis I. Aaron, and Aaron's sons. The Wells family still runs the company today, although they have kept the name of the original owner (Page and Frederiksen 2003). The other specimen was further identified as a plate with "HOMER LAUGHLIN

maker mark"/"MADE IN U.S.A."/"H34 N6" (Figure 6.6b). This specimen was produced in August 1934 (laurelhollowpark.net 2017). Another of the total 30 whiteware specimens has a red slip (Figure 6.6c). The three remaining whiteware specimens are decorated and will be discussed below.

Hand-painted decorations consist of a wide variety of designs painted by hand onto the vessel. Motifs varied over the decades from simple sprig floral designs to elaborate hand-painted floral and geometric designs. Earlier hand-painted floral decorations used more natural colors, such as brown, mustard, yellow, and olive green, whereas, after 1830, colors such as pinkish-red, black, light blue, and light green were added (Brown 1982; Florida Museum of Natural History 2020). Hand-painted whiteware designs include sprig-painted wares, common after the late 1840s, and large polychrome floral designs, which became popular during the 1870s (Miller 1991; Florida Museum of Natural History 2020). One whiteware specimen with a green hand-painted decoration was recovered from 40MD271 (Figure 6.6d).

Decal designs consist of a series of raised dots transferred to a ceramic vessel body from a film or paper backing. This method of ceramic decoration was first used in Europe in the 1830s, but was not common until the late 1870s. Decal decorations superseded underglaze printing in popularity by ca. 1910 and primarily appeared on European ceramics before 1900. Decal printing is still used today (Samford and Miller 2015). The survey area yielded two whiteware specimens with a floral decal print remnant, one of which is polychrome (Figure 6.6e).

Ironstone

Ironstone, also known as white granite, is a semi-vitreous white-bodied refined earthenware with a hard paste and thick, glass-like glaze (Brown 1982; Florida Museum of Natural History 2020; Miller 1991). This type of ceramic began to be manufactured in England as early as 1813 and commonly occurs as an undecorated utilitarian ware from 1840 until 1930 (Florida Museum of Natural History 2020; Noël Hume 1969; Majewski and O'Brien 1987; Miller 1991). Four undecorated ironstone fragments were recovered from the survey area, one of which has a quartered shield royal arms maker mark (Figure 6.7). Royal arms with simple quartered shield maker mark were produced post-1837 (Godden 1988:552).

Yellowware

Yellowware is a very hard, compact, buff-colored refined earthenware with a clear lead glaze, which results in a yellowish finish, and the glaze tends to crackle. Yellowware was most popular between 1840 and 1870, but continued to be made into the twentieth century (Noël Hume 1969). While it can be undecorated, yellowware is often decorated as an annular ware, i.e., painted with white, yellow, blue, or brown bands of slip around the vessel (Brown 1982). The most common vessel forms for yellowware are kitchen ware, particularly bowls, and toilet wares (Florida Museum of Natural History 2020). Isolated Find 7 yielded two yellowware specimens, one of which is undecorated (Figure 6.8a).

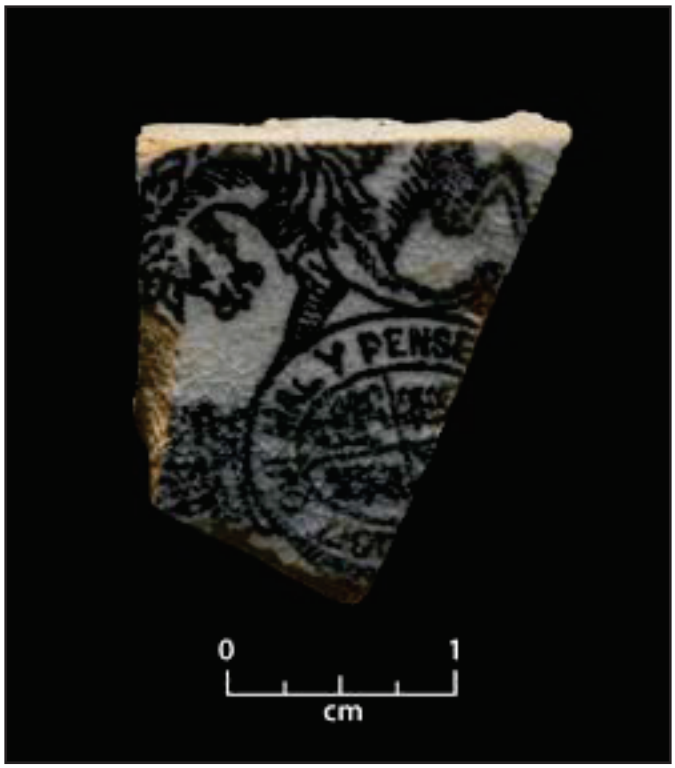

Figure 6.7. Ironstone specimen with a quartered shield royal arms maker mark.

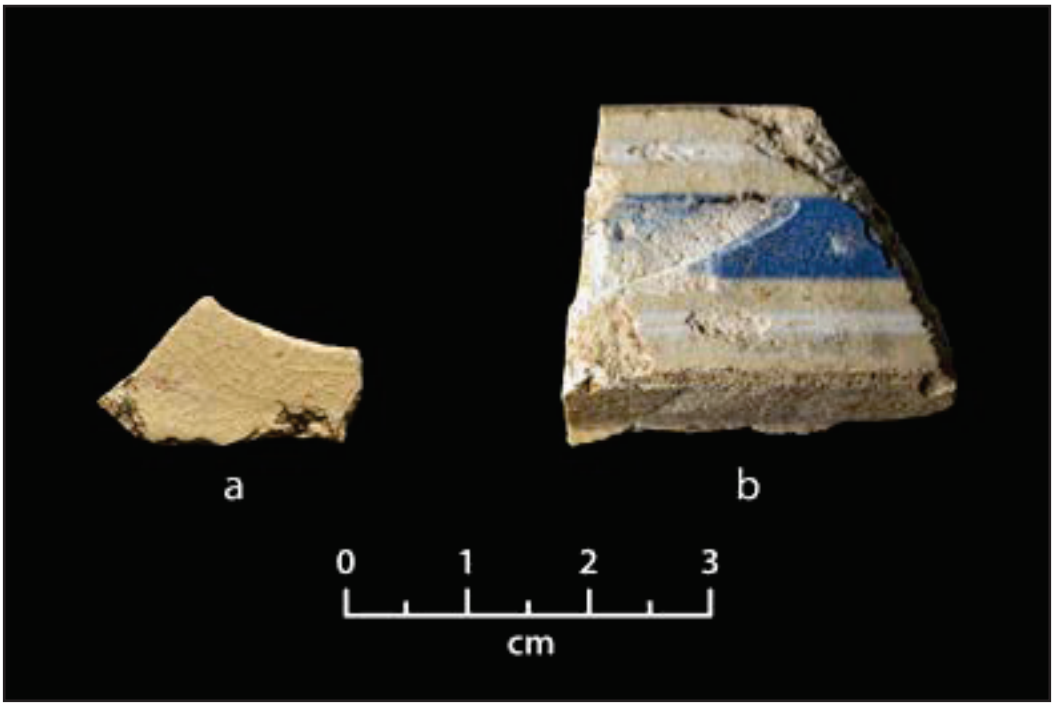

Figure 6.8. Yellowware specimens: (a) undecorated; (b) blue annular decoration.

Figure 6.9. Porcelain bowl specimen with a gilded, polychrome floral decal print decoration.

The remaining specimen has a blue annular decoration (Figure 6.8b). Banded annular slip decorations on yellowware are commonly found in white, blue, black, or brown. American-produced yellowware with annular decorations typically dates between 1840 and 1900 (Stelle 2001). Some color combinations can be assigned to a narrower chronological range. For instance, white and blue bands and white and brown bands date from the mid-nineteenth century into the twentieth century (Samford and Miller 2015).

Undifferentiated White Bodied Refined Earthenware

This residual category includes any white-bodied refined earthenware specimen that cannot confidently be placed within another previously defined type. A total of three undifferentiated white bodied refined earthenware specimens were recovered from the survey area, two of which are undecorated. The remaining specimen has an undifferentiated blue decoration.

Porcelain

Porcelain is generally considered a fine ware and is a very hard, compact, and vitreous ceramic, white to bluish-white in color (Brown 1982; Florida Museum of Natural History 2020). Chinese porcelains came to America via trade through India and Europe beginning in the second half of the eighteenth century, though some porcelain has been documented in pre-1650 contexts (Noël Hume 1969). Successful production of American porcelains began around 1825, and it continues to be produced today, both in the United States and Britain (Brown 1982). The survey area yielded five porcelain examples that were further identified as bowl (n=1) and vessel fragment (n=4) specimens. One of the total four porcelain vessel fragment examples is undecorated. The remaining three specimens have a buff-colored (n=1), floral decal print (n=1), and relief-molded (n=1) decoration.

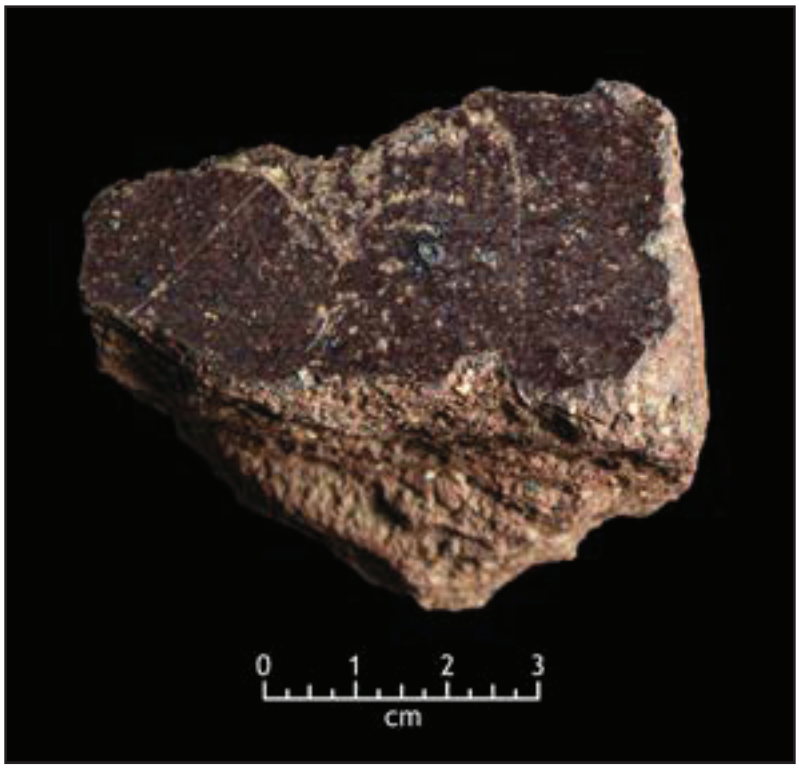

Figure 6.10. Terracotta drainage pipe fragment.

The porcelain bowl specimen has a gilded, polychrome floral decal print decoration (Figure 6.9). Gilding is a decorative technique involving gold added to a medium that is then hand painted onto ceramic surfaces. Perfected in Germany on porcelain and finely enameled earthenware ca. 1723, the process consisted of grinding gold into a medium which was then applied on top of the glaze and burnished after firing. During the nineteenth century, the process changed with the development of "liquid bright gold" in 1836. This method involved dissolving gold with acids and then combining it with other chemicals to form a solution that could be fired with enamel colors. Liquid gold gilding was introduced to English Staffordshire potters by 1870, at which time it began to increase in popularity during the late nineteenth century. Gilding is still used to decorate tableware today. One popular gilding method often consisted of thin bands of gold hand painted onto rims, handles, or other surfaces, or to outline hand-painted or transfer-printed decorations (Miller 1991).

Terracotta

Terracotta is often used as a synonym for coarse earthenware. The use of terracotta can be traced back as far as 1400 B.C. in Babylonia, and the type is still produced today. The mid-eighteenth century marks the beginning of mass-produced terracotta architectural materials in England, and American terracotta was used in architecture as early as 1850 (Fidler 1983; Tunick 2001). Terracotta is commonly used in architecture as roofing tiles, water pipes, and bricks, and it is also used for flower pots (Tunick 2001, Smith and Rogers 2011). Four terracotta specimens were recovered from the survey area, two of which were further identified as drainage pipe fragment with a lead/manganese glaze (n=1) and tile fragment (n=1) specimens (Figure 6.10).

Stoneware

Stoneware is a hard, non-porous ware fired at high temperatures between 1200 and 1300 degrees Celsius. Glaze is often applied to coat stoneware for a smooth, easy-to-clean surface (Greer 2005). A total of 14 glazed stoneware specimens were recovered from the survey area and will be discussed below.

Albany slip is a dark brown slip that forms a glaze at stoneware temperatures. It was first used as a glaze in the first quarter of the nineteenth century. The Albany slip became so widely used in the United States, the term "Albany type" was used to describe most dark brown or black slip-clay glazes. It was introduced as a glazing technique ca. 1820 and continued as a commonly used slip until 1940 (Greer 2005; Stelle 2001). However, potters today still use Albany slips (Brackner 2006). Six of total 14 glazed specimens have an Albany glaze only. Two of the six specimens are molded, one of which was further identified as a plate (Figure 6.11a). The other specimen has a molded unglazed exterior surface.

Bristol glaze is a smooth white to slightly off-white glaze made using chemicals that were readily available on the open market, especially feldspar and zinc. Since these ingredients were readily available around potters' shops, there was much experimentation (Brackner 2006; Stelle 2001). This glaze was developed in Bristol, England, during the last quarter of the nineteenth century (Greer 2005; Noël Hume 1969). By 1915, Bristol glaze was commonly found across North America. Prior to 1920, potters would commonly use this glaze in combination with Albany slip to create a two-tone effect (Brackner 2006). One of the total 14 glazed specimens is a Bristol-glazed crock lid handle (Figure 6.11b). Another of the total 14 glazed examples is a molded, blue Bristol-glazed specimen (Figure 6.11c).

Salt glaze is a stoneware glaze formed from common salt. Unlike other stoneware glazes, the process does not involve dipping a vessel into a slip; rather, salt is thrown or poured into the kiln at the height of the firing process. The firing temperature must be high enough for the silica in the clay to combine with the sodium to form the glaze (Maryland Archaeological Conservation Library 2020; Greer 2005). Salt glazing produces a finish with an "orange peel" texture (Brackner 2006). Salt glaze was developed as early as the fifteenth century and introduced into the Deep South directly from Europe or through migrations of potters from the North or upland South. Salt glazing was prevalent in the Deep South, including Tennessee and Alabama, and was used into the mid-twentieth century (Brackner 2006). One of the total 14 glazed stoneware specimen has a salt glaze only and one has salt/Bristol-glazed surfaces. The remaining four glazed stoneware specimens have salt/Albany-glazed surfaces, one of which has an incised exterior surface. Another of the four salt/Albany-glazed specimens has a blue painted interior (Figure 6.11d).

Container Glass

A total of 386 container glass fragments were recovered from the survey area, 79 of which have a relief-molded design. A total of 78 container glass fragments were further identified as bottle (n=14), bottle/jar (n=50), jar (n=12), and soda bottle (n=2) specimens. Laboratory analysis of these

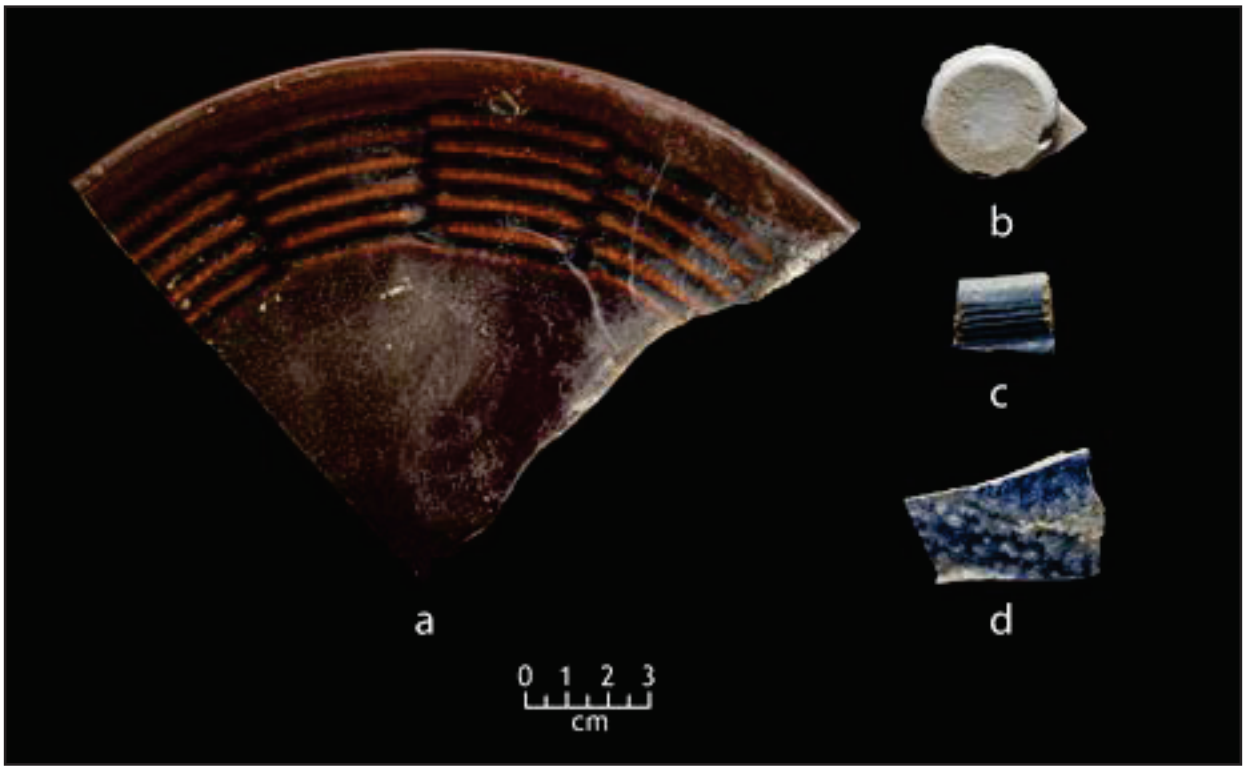

Figure 6.11. Glazed stoneware specimens: (a) molded Albany plate; (b) bristol crock lid handle; (c) molded blue Bristol; (d) salt glaze with blue painted interior.

artifacts focused on the identification of manufacturing attributes such as finish/closure types, base types, color, and mold seams. Attributes such as manufacture marks and embossing were also used in the identification of bottle/jar glass whenever possible. Curved glass specimens that lack the manufacturing attributes used to determine a specific container type are only categorized as container glass.

Clear or colorless glass refers to transparent decolorized glass. Glass produced in this manner was from the purest sand possible and decolorized with manganese, selenium, or arsenic (Lockhart 2006a; Trowbridge 1870). Colorless glass produced in this manner commonly dates from the 1870s to today (Lindsey 2010a). A total of 243 clear container glass specimens were recovered from the survey area, nine of which have decorative (n=2), illegible (n=2), partial (n=2), and undifferentiated (n=3) embossing. Six of the total 243 clear container glass specimens have an applied color label (n=3), stippled design (n=6), and stippling (n=3). Forty of the total 243 were further identified as bottle (n=9), bottle/jar (n=22), and jar (n=9) specimens.

Applied color labels are permanent labels created by baking a mixture of borosilicate glass and mineral or organic pigments onto the surface of a glass vessel. This method produces a label that looks like it is painted on. This process began to replace embossing starting around 1933, but was tedious and inefficient as each color needed to dry before another color could be applied. In the mid-1950s, a thermoplastic wax medium was introduced and eliminated the need to wait for each color to dry. Applied color labels are most often seen on soda, milk, and beer bottles and are still used today (Lindsey 2010b).

Stippling is a textured effect of light embossed dots, bumps, or indentations on bottle glass. It is commonly found on the bottom of the bottle, as stippling was used to decrease the drag on conveyor belts or to hide suction scars. Stippling first appeared in 1940 on bottles produced by Owens-Illinois Glass Company and continues to the present (Lindsey 2010b).

Twenty-two of the total 243 clear container glass examples were identified as bottle/jar specimens. Fifteen of the 22 clear bottle/jar examples were identified by a machine mold seam alone, one of which also has a stippled design. Body characteristics and mold seams are indicative of the manufacturing method used in the production of the bottle or jar. Features on the body, shoulder, and neck can be useful for dating a specimen (Lindsey 2010c, 2010d).

The first semi-automatic bottle-making machine was patented in 1882, but it still required the glass to be fed into the machine by hand. These semi-automated machines were used until ca. 1905 (Lindsey 2010d, 2010e). Michael J. Owens patented the first fully automatic bottle-making machine in 1904, which increased the number of bottles that could be made in a day (Baugher-Perlin 1982; Miller and Sullivan 1984). Mold seams on machine-made bottles tend to be thinner than those encountered on mold blown bottles and usually run vertically up to the highest point of the finish. Although there are earlier examples, machine-made bottles commonly date from 1910 to present.

The base, or the bottom of the bottle, is usually the thickest part that provides a flat surface on which the bottle stands. Seven of the 22 clear bottle/jar examples are undifferentiated base specimens, three of which have an applied color label (n=1) and stippling (n=2). One of the seven undifferentiated base examples has stippling and “18 Owens-Illinois Glass Company maker mark 5”/“11”/“C 302” embossing. The Owens-Illinois Glass Company was formed by a merger of the Owens Bottle Company and the Illinois Glass Group in 1929 (Toulouse 1971). It has plants throughout the country and is still manufacturing bottles today both locally and worldwide. The mark present on this specimen indicates it was manufactured between 1930 and 1947 at the Columbus, Ohio, factory (Lockhart and Hoenig 2015).

Another one of the seven undifferentiated base examples has “Hazel-Atlas Glass Company maker mark”/“1” embossing. C.N. Brady started the Hazel Glass Company in Wellsburgh, West Virginia, in 1886. Met with success, he expanded and, in 1902, created the Hazel-Atlas Glass Company in Wheeling, West Virginia. The “H over A” maker mark present on this specimen was used from 1923 to ca. 1982 (Figure 6.12a) (Toulouse 1971).

Nine clear bottle examples were recovered from the survey area, five of which are cup-bottom base specimens with machine mold seams. Cup-bottom bases are produced from a cupped base plate of a poly-part mold that extends to the upper edge of a bottle’s heel, creating the entire base. A mold seam is usually, but not always, visible where the base plate meets the two molds creating the body. Bottles manufactured with this process span a period from the mid-nineteenth century to present and represent the preferred base mold of the machine-made bottle era (Lindsey 2010f; Toulouse 1969).

Two of the five cup-bottom base examples have an Owens-Illinois Glass Company maker mark, one of which has a mark that suggests it was produced between 1929 and ca. 1960 (Figure 6.12b) (Lockhart and Hoenig 2015). The other specimen has two handles and a makers mark that indicates it was manufactured between 1954 and today at the Penick and Ford Company plant in Cedar Rapids, Iowa (Lockhart and Hoenig 2015).

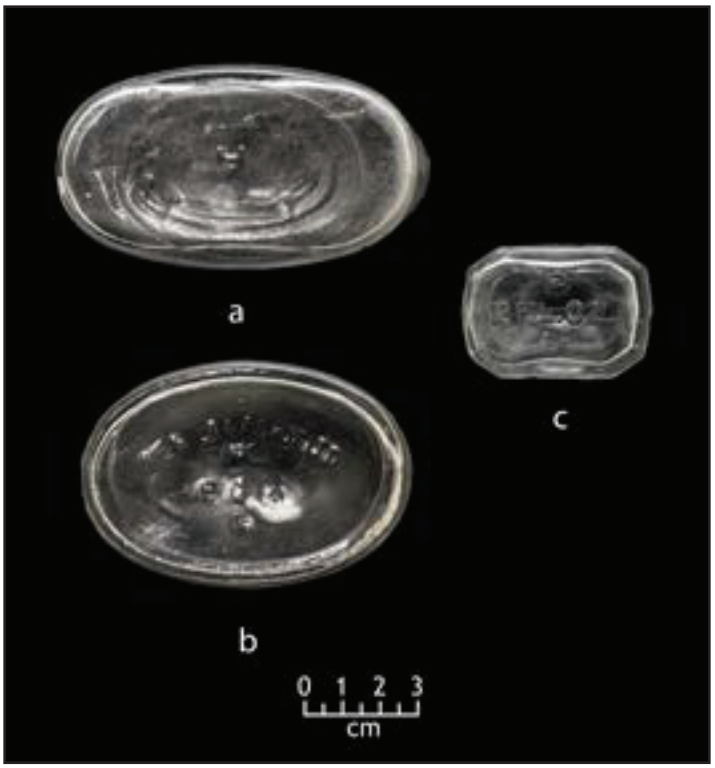

Figure 6.12. Clear container glass maker mark specimens: (a) Hazel-Atlas Glass Company; (b) Owens-Illinois Glass Company; (c) Pierce Glass Company.

The remaining three cup-bottom base examples also have a small external thread finish, one of which has an illegible maker mark. Another of the three examples has a handle and a Hazel-Atlas Glass Company maker mark that indicates it was produced 1923 and ca. 1982 (Toulouse 1971). The remaining specimen has "Pierce Glass Company maker mark"/"2 FL OZ"/"6" embossing (Figure 6.12c). The Pierce Glass Company used the "P in a Circle" mark between 1905 and 1987 (Lockhart et al. 2018).

Bottle and jar finishes are defined as the vessel portion above the upper terminus of the neck to which the closure is attached. The term "finish" began with the mouth-blown glass period when the last step in completing a bottle was to "finish the lip." With semi-automatic or fully automatic bottle machines, the finish process is exactly opposite, with production of the lip or finish as the first step in the bottle-making sequence. Bottle finishes and closures are interrelated, as the closure must conform to the finish in order to properly function as a seal. Determining the method of finishing can help establish a date range for the bottle's production (Lindsey 2010g).

A small external thread finish is characterized by the presence of a raised ridge or ridges running around the outside surface of the finish, onto which a cap was tightened and sealed (Figure 6.13a). These ridges can either be one continuous piece, several interrupted pieces, or lugs, which are like interrupted pieces, only shorter, higher, and thicker. Small external thread finishes date as far back as the mid-1870s on liquor bottles and became the dominant finish type by the 1930s (Lindsey 2010h).

Figure 6.13. Clear finish specimens: (a) small external thread; (b) crown; (c) brandy; (d) large external thread.

One of the nine clear bottle examples is a small external thread finish with "5" embossing. Another one of the nine clear bottle examples is a crown finish with machine mold seams (Figure 6.13b). A crown finish is usually a two-part finish that includes a narrow, bead-like upper part that held the cap closure onto a rounded or flattened lower part. It is the most commonly found finish on soda, mineral water, and beer bottles. Even though this finish was patented in 1892, it did not gain popularity until the early twentieth century (Lindsey 2010h).

The remaining clear bottle example is a brandy finish (Figure 6.13c). The brandy finish is a two-part finish that is a combination of an oil finish on top and a bead finish below. It is flat on top, flares from top to bottom, and has a narrow, rounded ring at the base. It can also be called a wine finish, tapered top with ring, or tapered brandy finish, among other names. The brandy finish was commonly used on applied, tooled, and machine-made bottles for liquor, medicine, and other fluids. The brandy finish was prevalent from the 1860s to the 1920s (Lindsey 2010h).

Nine clear jar examples were recovered from the survey area, all of which are large external thread finish specimens (Figure 6.13d). Three of the nine examples have machine mold seams only. One of the nine jar examples is a cup-bottom base with machine mold seams, stippling, and "7 Owens-Illinois Glass Company maker mark 8"/"6"/"DURAGLAS"/"C 2933" embossing. Duraglas containers were produced by the Owens-Illinois Glass Company from 1940 to 1963 (Lockhart and Hoenig 2015).

A large external thread finish is characterized by the presence of a raised ridge or ridges spiraling around the outside surface of the finish onto which a cap was "threaded" or screwed, thereby tightening the seal. These ridges can either be one continuous piece, several interrupted pieces, or

lugs. Lugs are like interrupted pieces, only shorter, higher, and thicker. This finish is commonly found on canning and food storage jars, at least as early as the patent of the Mason fruit jar in 1858, and is still used today (Lindsey 2010h, 2010i).

Amber-colored glass is produced by adding sulfur, nickel, and particularly carbon to the glass in the form of charcoal, woodchips, and coal. Natural impurities, such as iron and manganese, also contribute to coloring the glass. Amber colored glass is produced in many shades, ranging from light yellow to dark brown. Although amber-colored glass was produced for many centuries, colors such as olive amber, light yellow amber, and black amber were uncommon when machines became the dominant manufacturing method after 1910. The more common medium amber colors are still produced today, primarily for beer bottles (Lindsey 2010a). A total of 35 amber container glass specimens were recovered from the survey area, eight of which have illegible embossing and a stippled design (n=1) and a stippled design (n=7). Nine of the total 35 amber container glass examples were further identified as bottle (n=2) and bottle/jar (n=7) specimens.

Seven amber bottle/jar examples were recovered from the survey area. Five of the seven were identified by machine mold seams alone, two of which have a stippled design (n=1) and stippling (n=1). One of the seven amber bottle/jar examples is a cup-bottom base with machine mold seams and "6 DR."/"28 Armstrong Cork Company maker mark 50"/"U.S.A." embossing (Figure 6.14a). The Armstrong Cork Company acquired Whitall Tatum & Co. and Hart Glass Mfg. Co. in 1938 (Lockhart et al. 2013). The date code mark present on this specimen indicates it was produced in 1950 (Lockhart et al. 2013). The remaining amber bottle/jar example is an undifferentiated finish.

Two amber bottle examples were recovered from the survey area, both of which are cup-bottom base specimens with machine mold seams. One of the two bottle examples is a small external thread finish with stippling and "T"/"18 66"/"PAT. DES. 187.302"/"16" embossing. On February 23, 1960, John Brady Campbell patented the design for this amber bottle specimen (U.S. Patent Office 1960).

The remaining amber bottle specimen is a reinforced extract finish with "LYSOL"/"L.&F. PROD. CORP."/"BLOOMFIELD N.J."/"BOTTLE MADE"/"IN U.S.A."/"Whitall Tatum & Company maker mark" embossing (Figure 6.14b). The Whitall Tatum and Company was operated under several variations of the name as early as 1836. The company was incorporated and purchased by the Armstrong Cork Company in 1938, but continued to operate until 1969. The mark present on this specimen indicates a manufacture date of between 1924 and 1938 (Lockhart et al. 2006). The reinforced extract finish is primarily found on druggist and medicine bottles between 1900 and the early 1920s (Lindsey 2010h).

Colorless container glass decolorized with manganese dioxide becomes amethyst-colored with exposure to the sun. Container glass manufactured with this process can range in color from a light pink to dark amethyst or purple, which is determined by the amount of manganese used to produce the glass and time exposed to ultraviolet light. Amethyst glass dates from around 1865 to 1920, though limited use of manganese in glass continued until the early 1930s (Jones and Sullivan 1989:13; Lockhart 2006b; Newman 1970). Solarized amethyst glass is commonly found on archaeological sites dating to the late nineteenth and early twentieth centuries. A total of 34 solarized amethyst container

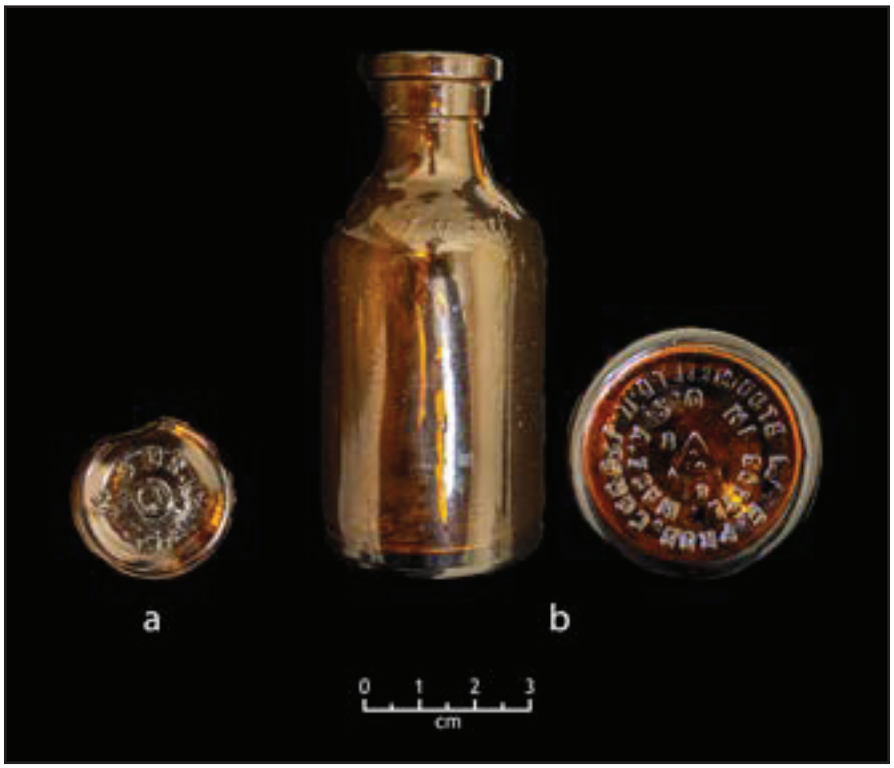

Figure 6.14. Amber container glass maker mark specimens: (a) Armstrong Cork Company; (b) Whitall Tatum & Company with reinforced extract finish.

glass specimens were recovered from the survey area, six of which have partial (n=5) and undifferentiated (n=1) embossing. Ten of the total 34 solarized amethyst container glass examples were further identified as bottle (n=2) and bottle/jar (n=8) specimens.

Eight solarized amethyst bottle/jar examples were recovered from the survey area, three of which were identified by a machine (n=2) and mold blown (n=1) mold seam alone. Mold-blown bottles are mouth blown into a mold. Molds could be made out of metal, wood, clay, or a variety of other materials, and simplified the process of bottle making while expediting production. When glass is blown into a mold, it is often extruded into the seams where the mold pieces come together. This leaves relatively thick mold seams on the body, shoulder, and/or neck of the bottle. Mold-blown bottles usually date from the early 1800s until 1910 when machines replaced mouth-blown manufacturing methods. The placement and nature of these mold seams can further tighten the chronological position for bottles produced using this method (Lindsey 2010d). Four of the eight solarized amethyst bottle/jar examples are undifferentiated base specimens, three of which have partial embossing. The remaining solarized amethyst bottle/jar specimen is an undifferentiated finish.

Two solarized amethyst bottle examples were recovered from the survey area, one of which is a brandy finish with machine mold seams. The other example is a double ring finish (Figure 6.15). The double ring finish is a two-part finish consisting of two rings: a thicker and wider rounded ring at the top of the finish and a thinner, narrower ring below. Sometimes these rings are more like pointed ridges and look almost triangular in cross-section. This style of finish was used on medicine, liquor,

Figure 6.15. Solarized amethyst double ring finish.

sauce, ink, and other types of bottles. It was commonly used on mouth-blown bottles starting in the 1840s and was made until it began to fade out of use in the 1920s (Lindsey 2010h).

Aqua and bluish green-colored glass gets its color from iron impurities in sand from which the glass is produced. Colors ranging from greenish to bluish were categorized as bluish aqua for specimens recovered during the investigations. These colors occurred in all types of bottles dating from the early nineteenth century to the 1920s, while aqua-colored canning jars extended into the 1930s (Lindsey 2010a; White 1978). A total of 23 aqua container glass examples were recovered from the survey area, seven of which were further identified as bottle/jar (n=6) and jar (n=1) specimens. Two of the six aqua bottle/jar examples were identified by machine mold seams alone. Three of the six bottle/jar examples are undifferentiated base specimens. The remaining aqua bottle/jar example is a cup-bottom base with undifferentiated embossing. One aqua jar example was recovered from 40MD270. This specimen is a large external thread finish.

Cobalt blue-colored glass was produced by adding cobalt oxide to the glass. All types of bottles were manufactured using this process ranging from food and beverage containers to ink wells. Bottles of this color commonly date from the 1840s to the 1930s (Lindsey 2010a). Four cobalt blue container glass examples were recovered from the survey area, one of which was further identified as a bottle/jar specimen. This specimen is a cup-bottom base with machine mold seams and "VA..."/"Vicks Vaporub maker mark" embossing (Figure 6.16). Lunsford Richardson began selling medicines under the "Vick's" name starting in the 1890s. By 1905, Richardson created the Vick Family Remedies Company and began selling his products throughout North Carolina; the product is still sold today. The mark present on this specimen indicates it was manufactured between 1921 and 1956 (Whitten 2016).

Figure 6.16. Cobalt blue Vicks Vaporub maker mark.

Green-colored container glass is produced from a variety of different coloring additives including chromium, copper, and iron. Shades of this color can range from light to blue-green produced from a mixture of chromium and cobalt. Green colors were widely used in the production of all types of bottles and are known to date as early as 1815 to well into the twentieth century (Lindsey 2010a; Munsey 1970). A total of 19 green container glass specimens were recovered from the survey area, nine of which have an applied color label (n=8) and a stippled design (n=1). Four of the total 19 were further identified as bottle/jar specimens. Three of the four green bottle/jar examples were identified by machine mold seams only, one of which has an applied color label.

The remaining green bottle/jar example is a cup-bottom base with machine mold seams, stippling, stippled design, and "6 Laurens Glass Works maker mark 4"/"CONTENTS"/"1 PT 12 FL. OZS"/"4"/"658" embossing. Incorporated in 1910 in Laurens, South Carolina, Laurens Glass Works became a successful southern bottle and jar producer specializing in soda bottles, namely Coca-Cola hobble-skirt bottles. The company later opened branch plants in Henderson, North Carolina, and Ruston, Louisiana, in the late 1950s and early 1960s, respectively. In 1968, Indian Head Container Corporation purchased Laurens Glass Works and continued producing under the Laurens name. Ball-InCon acquired the plants in 1987 and continued operating for nearly a decade before closing in 1996. The date code mark present on this specimen indicates it was produced in 1964 (Figure 6.17a) (Lockhart et al. 2017).

Twenty-three light green container glass specimens were recovered from the survey area, three of which have applied color labels. Four of the total 23 light green container glass examples were further identified as bottle (n=1), bottle/jar (n=1), and soda bottle (n=2) specimens. The light

Figure 6.17. Green and light green container glass maker marks: (a) Laurens Glass Works; (b) Lime Cola Company; (c) Chattanooga Glass Company.

green bottle/jar example was identified by machine mold seams only. The light green bottle example is a crown finish with machine mold seams and an applied color label. Tow light green soda bottle examples were recovered from the survey area, one of which was identified by machine mold seams and "LIM…" embossing only (Figure 6.17b). This specimen is a Lime Cola soda bottle. The El Paso Real Juice Company bottled Lime Cola and operated from 1935 to 1942. Lime Cola bottles have both applied color label and embossed styles. Due to the range of Lime Cola container styles, this specimen must be dated to entirety of the El Paso Real Juice Company. Thus, this specimen was produced between 1935 and 1942 (Lockhart 2010:13).

The remaining light green soda bottle example is a cup-bottom base Coca-Cola bottle with a crown finish, machine mold seams, an applied color label, and "BAY CITY MICH"/"BOTTLE TRADE MARK"/"Chattanooga Glass Company maker mark" embossing (Figure 6.17c). The Chattanooga Bottle and Glass Manufacturing Company was founded in 1901, changed its name to the Chattanooga Glass Company in 1930, and eventually merged with the Anchor Hocking Glass Corporation in 1987. The mark found on this specimen dates from 1927 to 1987 (Lockhart et al. 2014). However, according to Lockhart and Porter (2010), Coca-Cola bottles began using an applied color label in 1955. However, in 1963, Coca-Cola bottles switch to embossed script on one side and Coke on the reversal. Therefore, this specimen was produced between 1963 and 1987.

Milk glass is an opaque white glass created by adding either natural additives, such as calcium and bone, or chemical additives, such as fluorides, phosphates, tin, or zinc (Jones and Sullivan 1989; Lindsey 2010a). Milk glass was used in the production of several different types of bottles, but can be chronologically diagnostic in some cases. Cosmetic and toiletry bottles were commonly made of milk glass from the 1870s to about 1920, and ointment and cream jars were made of this glass from around

Figure 6.18. Milk Mum cream deodorant jar with ferrous metal screw cap closure.

the 1890s to the mid-twentieth century. Milk glass would not be commonly found on sites with occupations entirely prior to the 1870s (Lindsey 2010a). Four milk container glass examples were recovered from the survey area, three of which were further identified as bottle/jar (n=1) and jar (n=2) specimens. The milk bottle/jar example was identified by machine mold seams only.

The two milk glass jar examples are both cup-bottom base specimens with a large external thread finish and machine mold seams. One of the two milk glass jar examples also has a ferrous metal screw cap closure that reads "MUM CREAM DEODORANT" (Figure 6.18). MUM is a brand of deodorant that was first introduced in 1888. The brand was taken over by the Bristol-Myers Company in 1932. By the early 1950s, roll-on deodorant was introduced and quickly became the preferred method of deodorant application. MUM deodorant was still sold in milk glass jars until at least 1956, and the brand still exists today (Mum-deo.com 2016; Advertisement for MUM Cream Deodorant 1956). Therefore, this specimen was manufactured between post 1931 and 1956. Site 40MD271 also yielded one light blue milk container glass specimen.

Canning Jar Lid Insert

In the mid 1860s, several versions of a metal screw cap with a milk glass liner were introduced. The liner was patented by Lewis Boyd in 1869. This style of closure continued to be used well

into the mid-twentieth century (Jones and Sullivan 1989; Lindsey 2010i). A total of eight milk container glass canning jar lid insert specimens were recovered from the survey area, seven of which have illegible (n=1) and partial (n=6) embossing.

Drinking Glass

Machine-automated production of glass tumblers and drinking glasses began in 1917 with the invention of the Westlake machine and continues today (Paquette 2010). The survey area yielded two clear drinking glass specimens.

Tableware

Pressed glass is categorized as molded glass designed to look like cut crystal. It is not part of the molded container glass category. The pressing machine was invented in the 1820s, but pressed glass existed before this in the form of small pieces, such as bottle stoppers made with a hand-operated mold. The pressing machine allowed for the creation of larger items, such as dishes and bottles. The process of pressing glass involved dropping viscid glass into a mold and pressing it into the mold with a plunger operated by a lever (McKearin and McKearin 1970). Two pressed glass tableware specimens were recovered from the survey area, one of which has a floral design. Colors recovered include clear (n=1) and green (n=1).

Cased Glass

Cased, or overlay, glass is produced by layering glass over a contrasting color (Corning Museum of Glass 2002). The successive layers could be gathered over each other, one inflated inside a pre-made form in another color, or formed around an object such as a mold (Corning Museum of Glass 2002; PatternGlass.com 2019). One aqua and one bright green cased glass specimen were recovered from 40MD278.

Insulator Glass

Utility insulators are bell-shaped glass or porcelain specimens used to attach telegraph and telephone lines to wooden poles. Most glass insulators are made of blue-green or aqua glass shaped in a cast iron mold, and maker marks are commonly embossed on the surface. Glass utility insulators date back as far as 1846, but were most popular from 1875 o 1930. While glass insulators are still used sparingly today, most were replaced as technology advanced (Whitten 2020). Site 40MD274 yielded one aqua insulator glass specimen (Figure 6.19).

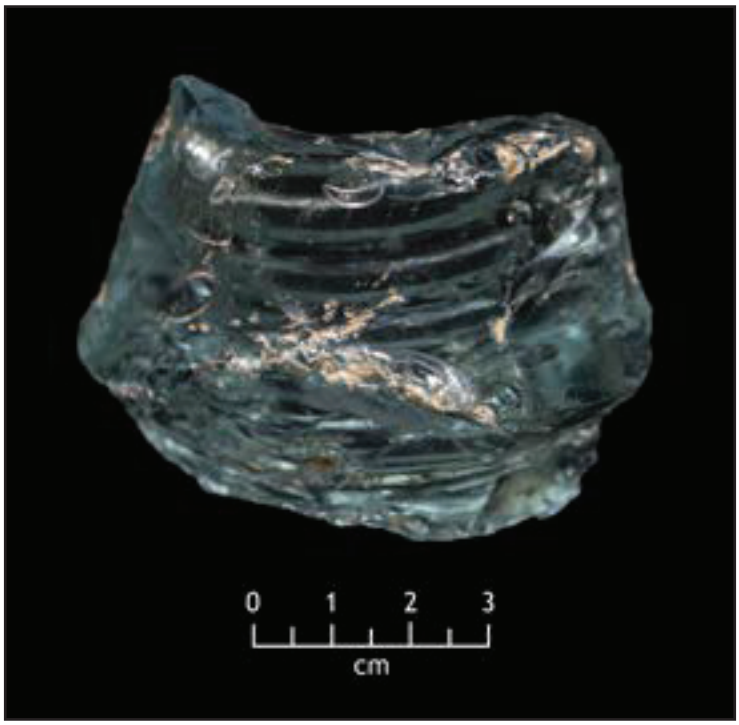

Figure 6.19. Aqua glass insulator specimen.

Light Bulb Glass

Light bulb glass is distinguished from container glass by its thickness; light bulb glass is generally thinner than container glass. Production of the light bulb began with Thomas Edison's first hand-blown light bulb dating to 1879 (Lorrain 1968), and continues today. Two clear light bulb glass specimens were recovered from the survey area.

Flat Glass

Flat glass lacks curvature and is categorized primarily on the basis of color and thickness. In terms of activities, flat (window) glass is primarily associated with architectural structures, although not all flat glass is architectural. Flat (i.e., window) glass from historic sites can have a large temporal span (Weiland 2009). The survey area yielded a total of 71 flat glass specimens. Colors present include clear (n=10), light blue (n=6), and light green (n=55).

Undifferentiated Glass

Undifferentiated glass specimens are those which could not be classified with confidence into any glass type (container, window, etc.). A total of 48 undifferentiated glass specimens were recovered from the survey area. Colors include aqua (n=2), clear (n=34), green (n=2), light green (n=7), milk (n=1), and solarized amethyst (n=2). These examples are either broken (n=34), melted (n=8), or too small (n=5) to determine glass type.

Nails

Nails are common on historic sites and can provide useful chronological information. Cut nails are made from strips of iron that are machine cut from a strip of steel or iron stock called a nail plate. They are rectangular in cross-section, and, although the face of the nail tapers to the point, sharp points are not usually found (Noël Hume 1969; Wells 1998). They were first produced in America in about 1790, and, originally, the heads were individually shaped by hand hammering. By 1815, the heads were also machine made (Noël Hume 1969). The majority of cut nails were machine made. Cut nails were the primary type of nail used throughout the nineteenth century until the mass production of wire nails began in the late nineteenth century (Wells 1998). Six ferrous metal cut nail specimens were recovered from the survey area, four of which are fragments.

Wire nails display a circular shaft with a pointed distal end. The manufacture of wire nails in the United States began in the 1870s and has continued to be the dominant nail type since 1920 (Wells 1998). The survey area yielded 89 ferrous metal wire nail specimens, 73 of which are fragments.

Small Arms Cartridge

The Union Metallic Cartridge Company (U.M.C Co.) opened in 1866 in Bridgeport, Connecticut. Owners Marcellus Hartley, Malcolm Graham, Charles H. Pond, Robert J. White, and J. Rutsen Schuyler established the company after purchasing two manufacturers of metallic cartridges, the Crittenden and Tibbels Manufacturing Company and a business owned by C.D.Lett (Remington Arms-Union Metallic Cartridge Company 1911). The company was soon incorporated, and by 1873, the U.M.C Co. was the largest firm in the ammunition industry (Boorman 2001). In 1912, the Union Metallic Cartridge Company and the Remington Arms Company were combined to become Remington U.M.C. (Remington 2013). One cuprous 12 guage shogun shell with “REM U.M.C. Co.”/“No. 12”/“NEW CLUB” headstamp was recovered from the 40MD270. This headstamp appears in the 1915-1916 Remington Arms-Union Metallic Cartridge Co., Inc. price catalog and is listed as being discontinued in the 1937 catalog (Remington Arms-Union Metallic Cartridge Company 1915; 1937).

Horseshoe

Horseshoes are commonly recovered on historical sites, but, unfortunately, little chronologically useful information can be gleaned from them, as there is little conformity. Some broad trends may be archaeologically useful, however. For example, the groove close to the outer margin of the shoe in which the nail holes are placed is called fullering and does not appear on shoes until ca. 1660. Horseshoes in the first half of the seventeenth century spread inward at the heels of the shoe, creating a keyhole appearance. By the end of the eighteenth century, the heels were wider apart and more U-shaped (Noël Hume 1969). One ferrous metal horseshoe fragment was recovered from 40MD268.

Figure 6.20. Cuprous 12 gauge shotgun shell head with “REM U.M.C. Co.”/“No. 12”/“NEW CLUB” headstamp.

Other Metal Artifacts

Other metal artifacts recovered during the survey include aluminum wire (n=1), cuprous lock with latch (n=1), cuprous decorative furniture fitting with floral motif (n=1), ferrous metal/wood/rubber hammer (n=1), ferrous sheet metal fragment (n=77), as well as ferrous metal barbed wire (n=2), cast iron possible stove fragment (n=1), clothing iron fragment (n=4), coupling (n=1), fencing staple (n=1), fencing wire (n=6), grommet (n=1), K-lock nut (n=1), perforated strap (n=1), pipe (n=1), spike (n=2), undifferentiated fragment (n=34), and wire (n=25).

Brick

Bricks are produced from tempered clay which is formed in a mold or cut into a rectangular block and fired in a kiln. The manufacturing of brick in the United States began soon after European colonists arrived. Machine-made bricks began replacing hand-made bricks throughout the nineteenth century and became the primary method of brick production in the late nineteenth century (Holley 2009). A total of 228 brick fragment specimens were recovered from the survey area, two of which are solid. One of the 228 brick fragment specimens is a hand-made solid example. Six of the total 228 brick fragment examples are glazed, one of which is solid.

Shellac Record

Shellac phonograph records were commercially produced beginning in 1897 and continued to be manufactured well into the 1950s (Morton 2004:100, 198). Production consisted of pressing a thermoplastic resin made of a variety of components, including shellac, carbon, slate, limestone, or cotton fibers, into a master recording plate. Shellac records were gradually replaced by lacquered and vinyl records in the 1940s (Osborne 2012; Preservation Self-Assessment Program 2020). One shellac record fragment was recovered from 40MD270.

Other Artifacts

In addition to the artifacts included in the discussions above, the survey area also yielded fired clay (1.16 g), leather shoe sole fragment with lace holes (n=30), mortar (n=2), plastic two-hole button (n=1), plastic bottle fragment with small external thread finish (n=1), plastic cap (n=3), plastic fragment (n=5), and rubber shoe sole fragment with illegible embossing in a diamond (n=15) specimens. Investigations also yielded additional other materials, including carbonized wood (0.3 g), coal (n=10), unmodified sandstone (166.08 g), and unmodified slate (0.17 g).

CHAPTER 7. SUMMARY AND RECOMMENDATIONS

Under contract with Barge, TVAR conducted a Phase I cultural resources survey associated with Silicon Ranch solar array project in Madison County, Tennessee. The original 379.7 ha (938.3-acre) archaeological survey area consisted of the 378.5 ha (935.3-acre) tract of land where the solar array is to be constructed, in addition to 1.38 km (0.86 mi) of new transmission line with a 30 m (100 ft) wide. Following the initial investigation, TVAR also surveyed a 0.8 ha (2-acre) tract of land and a 0.2 ha (0.5-acre) tract of land, both of which are situated along the southern boundary of the initial survey area. In total, the archaeological survey area covered 380.7 ha (940.8 acres). The APE consisted of a 0.8 km (0.5 mi) radius surrounding the solar array's footprint. Areas within the survey radius that were determined not to be within view of the solar array due to terrain, vegetation, and/or modern built environments were not considered part of the APE.

The purpose of the survey was to assist Barge and their client, Silicon Ranch, in fulfilling requirements established by the TVA in accordance with obtaining financial assistance with the construction of the proposed solar array. Additionally, the investigation served to aid Barge and Silicon Ranch in Section 106 compliance and to provide an inventory of cultural resources within the survey area, a description of the current conditions at the resources identified, and NRHP eligibility status recommendations regarding each resource identified. All work was consistent with the Secretary of the Interior's S*tandards and Guidelines for Identification* (NPS 1983) and met the requirements established by the TVA, the THC (1991), and the TDEC (2018).

TVAR's background and literature search identified one previously recorded architectural resource within the APE (MD-IP-4), which appears within the THC information files as part of TDOT survey. As a result of its May 12, 2020 survey, TVAR concurred with MD-IP-4's prior NRHP ineligibility determination. As a result of the initial investigation focused upon the exterior of historic architectural resource MD-IP-2, TVAR identified the house as a representative example of the Neoclassical Revival style that appeared to retain sufficient integrity for eligibility. However, upon revisiting the property on November 3, 2020, and interviewing the Johnson family, TVAR learned of extensive damages caused by a 2004 interior fire, as well as severe vandalism. The resulting damages and neglect compromise the integrity of MD-IP-2 and its ability to appropriately convey its architectural significance. TVAR therefore recommends MD-IP-2 as ineligible for NRHP listing. The remaining surveyed architectural resources, MD-IP-1 and MD-IP-3, are likewise recommended by TVAR as ineligible for NRHP listing, as each lacks significance and exhibits insufficient integrity. TVAR recommends no further investigations of above-ground resources within the APE.

The archaeological survey resulted in the identification of 71 cultural resources within the project area, including 13 newly recorded sites (40MD267, 40MD268, 40MD269, 40MD270, 40MD271, 40MD272, 40MD273, 40MD274, 40MD275, 40MD276, 40MD277, 40MD278, and 40MD279), five non-site cultural resources (NSCR 1-5), and 53 isolated finds (Figures 7.1 and 7.2). The affiliation and TVAR's NRHP recommendation for the 13 archaeological sites and five non-site cultural resources is summarized in Table 7.1. It is TVAR's opinion that eight sites (40MD267, 40MD268, 40MD269, 40MD271, 40MD274, 40MD275, 40MD277, and 40MD278) offer little research potential beyond the findings of the Phase I survey, and all are recommended not eligible for inclusion in the NRHP.

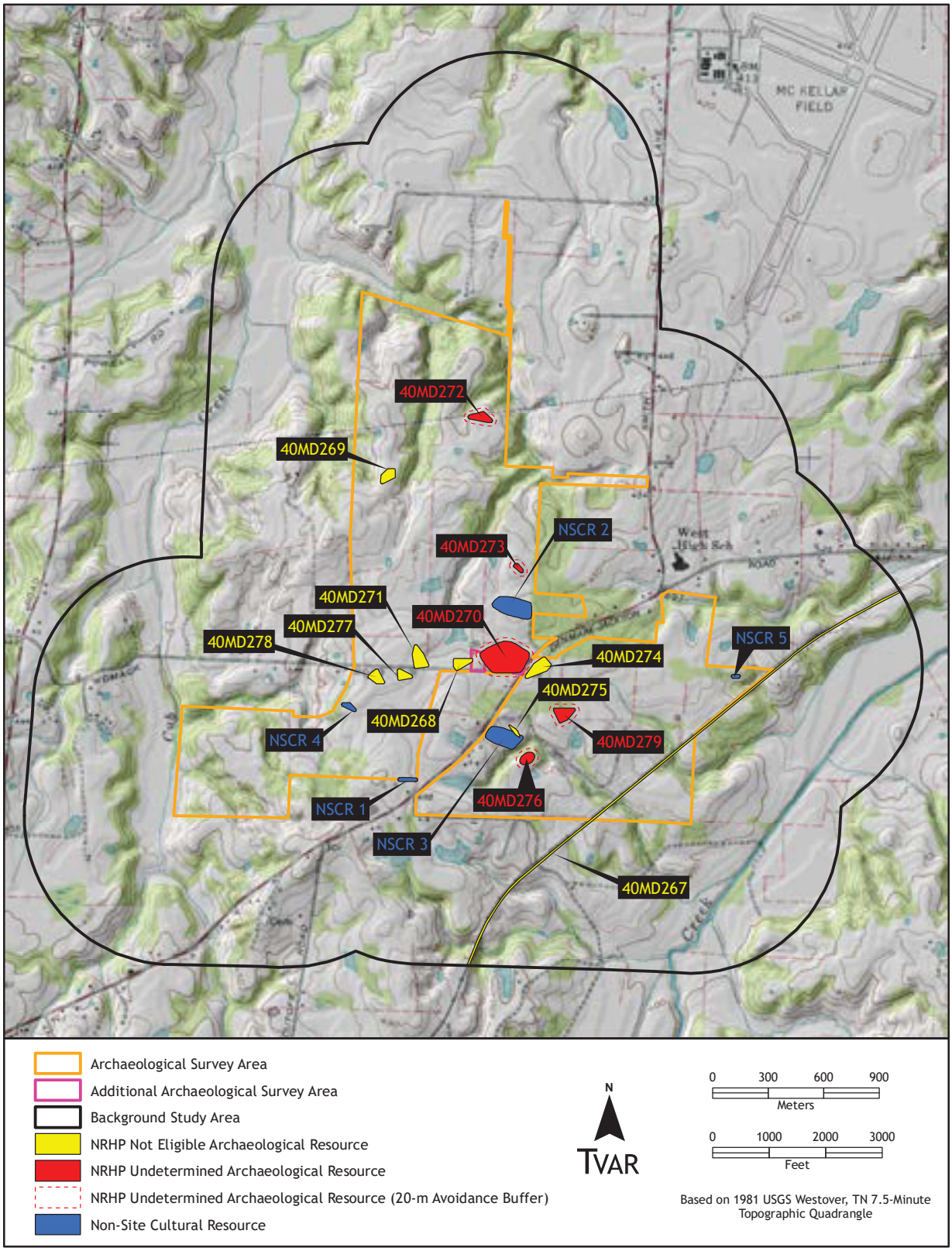

Figure 7.1. Topographic map depicting the location of archaeological sites and non-site cultural resources within the survey area.

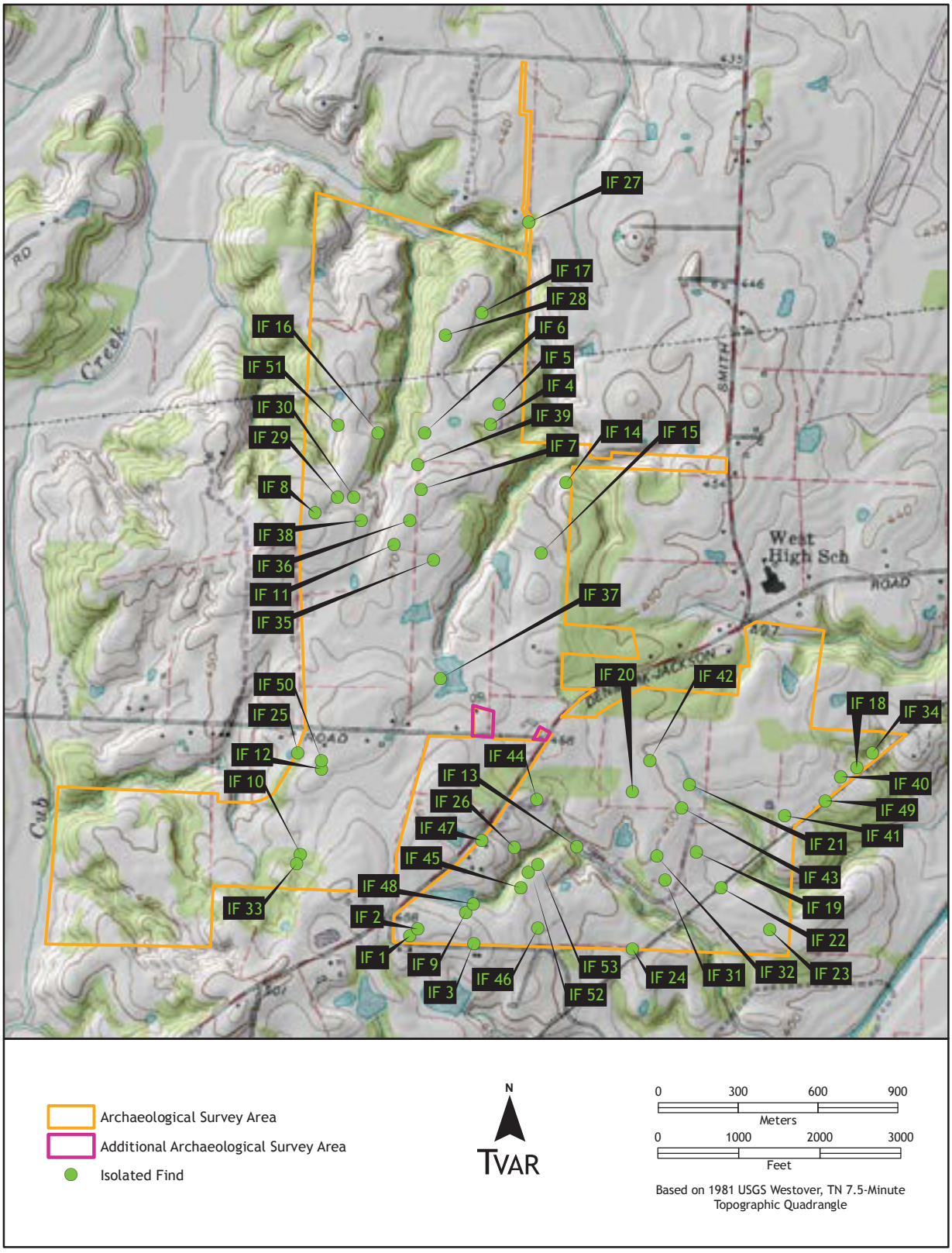

Figure 7.2. Topographic map depicting the location of the 53 isolated finds identified within the survey area.

Table 7.1. Summary of Archaeological Sites Identified within the Survey Area

Site	Affiliation	NRHP Recommendation
40MD267	ca. 1880 Railroad	Not Eligible
40MD268	Twentieth Century Euro-American	Not Eligible
40MD269	Late Nineteenth to Mid-Twentieth Century Euro-American	Not Eligible
40MD270	Mid-Nineteenth to Mid-Twentieth Century Euro-American	Undetermined
40MD271	Twentieth Century Euro-American	Not Eligible
40MD272	Native American (Middle to Late Woodland)	Undetermined
40MD273	Native American (Middle to Late Woodland)	Undetermined
40MD274	Twentieth Century Euro-American	Not Eligible
40MD275	Unknown Native American	Not Eligible
40MD276	Native American (Middle to Late Woodland)	Undetermined
40MD277	Twentieth Century Euro-American	Not Eligible
40MD278	Twentieth Century Euro-American	Not Eligible
40MD279	Mid-Nineteenth to Early Twentieth Century Euro-American	Undetermined
NSCR 1	Twentieth Century Euro-American	Not Eligible
NSCR 2	Twentieth Century Euro-American	Not Eligible
NSCR 3	Twentieth Century Euro-American	Not Eligible
NSCR 4	Twentieth Century Euro-American	Not Eligible
NSCR 5	Twentieth Century Euro-American	Not Eligible

TVAR recommends no additional investigations of these resources. Five sites (40MD270, 40MD272, 40MD273, 40MD276, and 40MD279) warrant an NRHP eligibility status of undetermined. TVAR recommends avoidance of these five sites pending additional archaeological investigations to better ascertain the NRHP eligibility statuses of these resources. The five non-site cultural resources and 53 isolated finds lack significant research potential beyond the findings of the Phase I survey and are not eligible for listing on the NRHP. TVAR recommends that no further archaeological investigations of the five non-site cultural resources or 53 isolated finds are necessary in connection with the proposed project.

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APPENDIX A: SHOVEL TEST ROSTER

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1	negative	1093288	465373		0-50	
Shovel Test	2	negative	1093381	465368		0-50	
Shovel Test	3	negative	1093483	465376		0-50	
Shovel Test	4	negative	1093572	465368		0-50	
Shovel Test	5	negative	1093676	465378		0-50	
Shovel Test	6	negative	1093773	465375		0-50	
Shovel Test	7	negative	1093871	465372		0-50	
Shovel Test	8	negative	1093967	465376		0-50	
Shovel Test	9	negative	1094066	465374		0-50	
Shovel Test	10	negative	1094167	465370		0-50	
Shovel Test	11	negative	1094268	465368		0-50	
Shovel Test	12	negative	1094371	465371		0-50	
Shovel Test	13	negative	1094466	465372		0-50	
Shovel Test	14	negative	1094558	465369		0-50	
Shovel Test	15	negative	1094656	465364		0-50	
Shovel Test	16	negative	1094759	465363		0-50	
Shovel Test	17	negative	1094763	465463		0-50	
Shovel Test	18	negative	1094658	465462		0-50	
Shovel Test	19	negative	1094565	465464		0-50	
Shovel Test	20	negative	1094460	465465		0-50	
Shovel Test	21	negative	1094361	465462		0-50	
Shovel Test	22	negative	1094264	465469		0-50	
Shovel Test	23	negative	1094165	465469		0-50	
Shovel Test	24	negative	1094074	465467		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	25	negative	1093971	465470		0-50	
Shovel Test	26	negative	1093873	465478		0-50	
Shovel Test	27	negative	1093776	465474		0-50	
Shovel Test	28	negative	1093672	465473		0-50	
Shovel Test	29	negative	1093576	465480		0-50	
Shovel Test	30	negative	1093479	465478		0-50	
Shovel Test	31	negative	1093379	465475		0-50	
Shovel Test	32	negative	1093281	465483		0-50	
Shovel Test	33	negative	1093279	465578		0-50	
Shovel Test	34	negative	1093382	465581		0-50	
Shovel Test	35	negative	1093479	465578		0-50	
Shovel Test	36	negative	1093578	465572		0-50	
Shovel Test	37	negative	1093678	465578		0-50	
Shovel Test	38	negative	1093775	465571		0-50	
Shovel Test	39	negative	1093871	465568		0-50	
Shovel Test	40	negative	1093973	465571		0-50	
Shovel Test	41	negative	1094068	465568		0-50	
Shovel Test	42	negative	1094170	465565		0-50	
Shovel Test	43	negative	1094276	465569		0-50	
Shovel Test	44	negative	1094366	465566		0-50	
Shovel Test	45	negative	1094466	465563		0-50	
Shovel Test	46	negative	1094567	465566		0-23	
Shovel Test	47	negative	1094663	465560		0-50	
Shovel Test	48	negative	1094758	465562		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	49	negative	1094854	465560		0-50	
Shovel Test	50	negative	1094369	465659		0-50	
Shovel Test	51	negative	1094265	465667		0-50	
Shovel Test	52	negative	1094163	465664		0-50	
Shovel Test	53	negative	1094072	465668		0-50	
Shovel Test	54	negative	1093976	465668		0-50	
Shovel Test	55	negative	1093870	465666		0-50	
Shovel Test	56	negative	1093777	465667		0-50	
Shovel Test	57	negative	1093676	465674		0-50	
Shovel Test	58	negative	1093577	465668		0-50	
Shovel Test	59	negative	1093483	465671		0-50	
Shovel Test	60	negative	1093384	465672		0-50	
Shovel Test	61	negative	1093283	465672		0-50	
Shovel Test	62	negative	1093284	465774		0-50	
Shovel Test	63	negative	1093379	465770		0-50	
Shovel Test	64	negative	1093479	465777		0-50	
Shovel Test	65	negative	1093581	465773		0-50	
Shovel Test	66	negative	1093674	465774		0-50	
Shovel Test	67	negative	1093777	465767		0-50	
Shovel Test	68	negative	1093878	465769		0-50	
Shovel Test	69	negative	1093973	465769		0-50	
Shovel Test	70	negative	1094075	465768		0-50	
Shovel Test	71	negative	1094175	465765		0-50	
Shovel Test	72	negative	1094273	465762		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	73	negative	1094373	465765		0-51	
Shovel Test	74	negative	1094467	465859		0-50	
Shovel Test	75	negative	1094371	465866		0-50	
Shovel Test	77	negative	1094171	465863		0-50	
Shovel Test	78	negative	1094075	465865		0-50	
Shovel Test	79	negative	1093976	465865		0-51	
Shovel Test	80	negative	1093880	465866		0-50	
Shovel Test	81	negative	1093779	465865		0-50	
Shovel Test	82	negative	1093679	465873		0-50	
Shovel Test	83	negative	1093583	465871		0-50	
Shovel Test	84	negative	1093484	465869		0-50	
Shovel Test	85	negative	1093381	465868		0-50	
Shovel Test	86	negative	1093287	465871		0-50	
Shovel Test	87	negative	1093291	465971		0-50	
Shovel Test	88	negative	1093388	465965		0-50	
Shovel Test	89	negative	1093482	465962		0-50	
Shovel Test	90	negative	1093581	465963		0-50	
Shovel Test	91	negative	1093678	465967		0-50	
Shovel Test	92	negative	1093774	465963		0-50	
Shovel Test	93	negative	1093876	465964		0-50	
Shovel Test	94	negative	1093981	465961		0-50	
Shovel Test	95	negative	1094073	465962		0-50	
Shovel Test	96	negative	1094175	465961		0-50	
Shovel Test	97	negative	1094271	465960		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	98	negative	1094370	465958		0-50	
Shovel Test	99	negative	1094470	465961		0-50	
Shovel Test	100	negative	1094570	465957		0-50	
Shovel Test	101	negative	1094667	465957		0-50	
Shovel Test	102	negative	1094966	466055		0-50	
Shovel Test	103	negative	1094859	466053		0-50	
Shovel Test	104	negative	1094769	466054		0-50	
Shovel Test	105	negative	1094668	466053		0-50	
Shovel Test	106	negative	1094566	466058		0-30	
Shovel Test	107	negative	1094465	466058		0-50	
Shovel Test	108	negative	1094373	466060		0-50	
Shovel Test	109	negative	1094270	466062		0-50	
Shovel Test	110	negative	1094177	466062		0-50	
Shovel Test	111	negative	1094076	466063		0-50	
Shovel Test	112	negative	1093978	466067		0-50	
Shovel Test	113	negative	1093880	466065		0-50	
Shovel Test	114	negative	1093789	466066		0-50	
Shovel Test	115	negative	1093683	466067		0-50	
Shovel Test	116	negative	1093584	466065		0-50	
Shovel Test	117	negative	1093487	466068		0-50	
Shovel Test	118	negative	1093387	466070		0-50	
Shovel Test	119	negative	1093291	466066		0-50	
Shovel Test	120	negative	1093291	466169		0-50	
Shovel Test	121	negative	1093397	466169		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	122	negative	1093489	466165		0-50	
Shovel Test	123	negative	1093583	466163		0-50	
Shovel Test	124	negative	1093682	466162		0-50	
Shovel Test	125	negative	1093779	466165		0-50	
Shovel Test	126	negative	1093978	466163		0-50	
Shovel Test	127	negative	1094079	466163		0-50	
Shovel Test	128	negative	1094172	466157		0-51	
Shovel Test	129	negative	1094271	466155		0-50	
Shovel Test	130	negative	1094373	466154		0-50	
Shovel Test	131	negative	1094468	466161		0-50	
Shovel Test	132	negative	1094570	466154		0-50	
Shovel Test	133	negative	1094667	466156		0-50	
Shovel Test	134	negative	1094769	466153		0-50	
Shovel Test	135	negative	1094865	466154		0-50	
Shovel Test	136	negative	1094971	466155		0-50	
Shovel Test	137	negative	1095061	466151		0-50	
Shovel Test	138	negative	1095161	466254		0-50	
Shovel Test	139	negative	1095060	466248		0-44	
Shovel Test	140	negative	1094957	466246		0-50	
Shovel Test	141	negative	1094858	466245		0-50	
Shovel Test	142	negative	1094770	466255		0-50	
Shovel Test	143	negative	1094667	466254		0-19	
Shovel Test	144	negative	1094575	466259		0-50	
Shovel Test	145	negative	1094469	466259		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	146	negative	1094377	466255		0-50	
Shovel Test	147	negative	1094279	466259		0-50	
Shovel Test	148	negative	1094172	466255		0-50	
Shovel Test	149	negative	1094073	466261		0-50	
Shovel Test	150	negative	1094177	466360		0-50	
Shovel Test	151	negative	1094274	466352		0-50	
Shovel Test	152	negative	1094373	466352		0-30	
Shovel Test	153	negative	1094469	466352		0-50	
Shovel Test	154	negative	1094570	466350		0-50	
Shovel Test	155	negative	1094669	466350		0-37	
Shovel Test	156	negative	1094767	466349		0-50	
Shovel Test	157	negative	1094864	466345		0-50	
Shovel Test	158	negative	1094964	466344		0-30	
Shovel Test	159	negative	1095064	466342		0-40	
Shovel Test	160	negative	1095159	466342		0-50	
Shovel Test	161	negative	1095253	466342		0-30	
Shovel Test	162	negative	1095262	466444		0-50	
Shovel Test	163	negative	1095160	466442		0-35	
Shovel Test	164	negative	1095065	466441		0-33	
Shovel Test	165	negative	1094973	466451		0-51	
Shovel Test	166	positive	1094870	466450	Isolated Find 35	0-50	
Shovel Test	167	negative	1094767	466445		0-52	
Shovel Test	168	negative	1094673	466445		0-50	
Shovel Test	169	negative	1094573	466450		0-40	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	170	negative	1094466	466452		0-35	
Shovel Test	171	negative	1094375	466457		0-50	
Shovel Test	172	negative	1094280	466457		0-33	
Shovel Test	173	negative	1094178	466458		0-50	
Shovel Test	174	negative	1094273	466553		0-35	
Shovel Test	175	negative	1094378	466554		0-50	
Shovel Test	176	negative	1094479	466552		0-50	
Shovel Test	177	negative	1094580	466545		0-50	
Shovel Test	178	negative	1094664	466543		0-54	
Shovel Test	179	negative	1094769	466545		0-50	
Shovel Test	180	negative	1094871	466544		0-50	
Shovel Test	181	negative	1094962	466547		0-50	
Shovel Test	182	negative	1095077	466549		0-50	
Shovel Test	183	negative	1095175	466545		0-50	
Shovel Test	184	negative	1095158	466638		0-50	
Shovel Test	185	negative	1095060	466640		0-50	
Shovel Test	186	negative	1094965	466646		0-50	
Shovel Test	187	negative	1094872	466642		0-50	
Shovel Test	188	negative	1094773	466646		0-51	
Shovel Test	189	negative	1094671	466646		0-50	
Shovel Test	190	negative	1094568	466645		0-50	
Shovel Test	191	negative	1094475	466644		0-50	
Shovel Test	192	positive	1094382	466647	Isolated Find 11	0-50	
Shovel Test	193	negative	1094386	466745		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	194	negative	1094476	466736		0-32	
Shovel Test	195	negative	1094580	466743		0-50	
Shovel Test	196	negative	1094673	466740		0-50	
Shovel Test	197	negative	1094775	466733		0-49	
Shovel Test	198	negative	1094875	466741		0-51	
Shovel Test	199	negative	1094975	466744		0-34	
Shovel Test	200	negative	1095059	466741		0-30	
Shovel Test	201	negative	1094355	464388	40MD271	0-50	
Shovel Test	202	negative	1094257	464395		0-50	
Shovel Test	203	negative	1094163	464386		0-39	
Shovel Test	204	negative	1094059	464386		0-35	
Shovel Test	205	negative	1093956	464393		0-50	
Shovel Test	206	negative	1093868	464397		0-50	
Shovel Test	207	negative	1093766	464390		0-35	
Shovel Test	208	negative	1093662	464394		0-42	
Shovel Test	209	negative	1093567	464389		0-38	
Shovel Test	210	negative	1093465	464399		0-50	
Shovel Test	211	negative	1093373	464397		0-50	
Shovel Test	212	negative	1093369	464500		0-50	
Shovel Test	213	negative	1093470	464497		0-50	
Shovel Test	214	negative	1093568	464484		0-50	
Shovel Test	215	negative	1093666	464487		0-50	
Shovel Test	216	negative	1093770	464490		0-50	
Shovel Test	217	negative	1093866	464487		0-40	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	218	negative	1093964	464483		0-50	
Shovel Test	219	negative	1094059	464482		0-38	
Shovel Test	220	negative	1094157	464485		0-50	
Shovel Test	221	negative	1094253	464484		0-50	
Shovel Test	222	positive	1094355	464486	40MD271	0-30	
Shovel Test	223	negative	1094455	464486	40MD271	0-31	
Shovel Test	224	positive	1094459	464583	40MD271	0-40	
Shovel Test	225	positive	1094351	464580	40MD271	0-55	
Shovel Test	226	negative	1094253	464584		0-50	
Shovel Test	227	negative	1094162	464585		0-50	
Shovel Test	228	negative	1094059	464590		0-50	
Shovel Test	229	negative	1093963	464584		0-36	
Shovel Test	230	negative	1093859	464588		0-51	
Shovel Test	231	negative	1093764	464585		0-50	
Shovel Test	232	negative	1093667	464590		0-31	
Shovel Test	233	negative	1093565	464592		0-50	
Shovel Test	234	negative	1093471	464592		0-49	
Shovel Test	235	negative	1093375	464585		0-50	
Shovel Test	236	negative	1093273	464592		0-50	
Shovel Test	237	negative	1093276	464692		0-50	
Shovel Test	238	negative	1093371	464690		0-50	
Shovel Test	239	negative	1093472	464691		0-50	
Shovel Test	240	negative	1093567	464689		0-50	
Shovel Test	241	negative	1093666	464685		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	242	negative	1093766	464687		0-50	
Shovel Test	243	negative	1093864	464683		0-50	
Shovel Test	244	negative	1093964	464682		0-50	
Shovel Test	245	negative	1094062	464683		0-50	
Shovel Test	246	negative	1094162	464681		0-50	
Shovel Test	247	negative	1094259	464680		0-50	
Shovel Test	248	positive	1094356	464680	40MD271	0-50	
Shovel Test	249	negative	1094454	464677		0-50	
Shovel Test	250	negative	1094551	464677		0-50	
Shovel Test	251	negative	1094555	464775		0-50	
Shovel Test	252	negative	1094454	464779		0-35	
Shovel Test	253	negative	1094357	464778		0-30	
Shovel Test	254	negative	1094261	464781		0-45	
Shovel Test	255	negative	1094162	464780		0-50	
Shovel Test	256	negative	1094063	464783		0-50	
Shovel Test	257	negative	1093964	464784		0-50	
Shovel Test	258	negative	1093861	464784		0-50	
Shovel Test	259	negative	1093770	464788		0-50	
Shovel Test	260	negative	1093673	464789		0-50	
Shovel Test	261	negative	1093564	464787		0-50	
Shovel Test	262	negative	1093469	464792		0-50	
Shovel Test	263	negative	1093375	464793		0-31	
Shovel Test	264	negative	1093274	464796		0-31	
Shovel Test	265	negative	1093274	464891		0-25	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	266	negative	1093375	464883		0-50	
Shovel Test	267	negative	1093471	464886		0-50	
Shovel Test	268	negative	1093571	464882		0-50	
Shovel Test	269	negative	1093665	464882		0-50	
Shovel Test	270	negative	1093770	464884		0-50	
Shovel Test	271	negative	1093868	464885		0-50	
Shovel Test	272	negative	1093968	464878		0-30	
Shovel Test	273	negative	1094062	464879		0-50	
Shovel Test	274	negative	1094160	464881		0-50	
Shovel Test	275	negative	1094256	464874		0-50	
Shovel Test	276	negative	1094360	464878		0-50	
Shovel Test	277	negative	1094455	464876		0-50	
Shovel Test	278	negative	1094553	464874		0-31	
Shovel Test	279	negative	1094559	464972		0-42	
Shovel Test	280	negative	1094460	464975		0-50	
Shovel Test	281	negative	1094354	464972		0-50	
Shovel Test	282	negative	1094259	464976		0-50	
Shovel Test	283	negative	1094163	464978		0-50	
Shovel Test	284	negative	1094063	464979		0-50	
Shovel Test	285	negative	1093966	464978		0-50	
Shovel Test	286	negative	1093863	464978		0-51	
Shovel Test	287	negative	1093768	464981		0-50	
Shovel Test	288	negative	1093674	464980		0-50	
Shovel Test	289	negative	1093571	464985		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	290	negative	1093479	464984		0-50	
Shovel Test	291	negative	1093377	464987		0-50	
Shovel Test	292	negative	1093274	464987		0-37	
Shovel Test	293	negative	1093282	465088		0-50	
Shovel Test	294	negative	1093374	465083		0-50	
Shovel Test	295	negative	1093472	465085		0-30	
Shovel Test	296	negative	1093574	465085		0-50	
Shovel Test	297	negative	1093671	465082		0-53	
Shovel Test	298	negative	1093769	465079		0-50	
Shovel Test	299	negative	1093868	465081		0-50	
Shovel Test	300	negative	1093969	465082		0-35	
Shovel Test	301	negative	1094068	465073		0-50	
Shovel Test	302	negative	1094166	465074		0-50	
Shovel Test	303	negative	1094264	465074		0-50	
Shovel Test	304	negative	1094363	465073		0-50	
Shovel Test	305	negative	1094456	465072		0-50	
Shovel Test	306	negative	1094561	465070		0-36	
Shovel Test	307	negative	1094560	465173		0-56	
Shovel Test	308	negative	1094454	465173		0-50	
Shovel Test	309	negative	1094364	465169		0-50	
Shovel Test	310	negative	1094258	465170		0-35	
Shovel Test	311	negative	1094169	465177		0-50	
Shovel Test	312	negative	1094068	465177		0-51	
Shovel Test	313	negative	1093967	465175		0-33	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	314	negative	1093867	465184		0-50	
Shovel Test	315	negative	1093780	465175		0-50	
Shovel Test	316	negative	1093678	465176		0-34	
Shovel Test	317	negative	1093581	465184		0-50	
Shovel Test	318	negative	1093477	465182		0-36	
Shovel Test	319	negative	1093377	465187		0-50	
Shovel Test	320	negative	1093277	465184		0-50	
Shovel Test	321	negative	1093284	465281		0-50	
Shovel Test	322	negative	1093375	465279		0-35	
Shovel Test	323	negative	1093475	465278		0-50	
Shovel Test	324	negative	1093578	465270		0-50	
Shovel Test	325	negative	1093673	465280		0-50	
Shovel Test	326	negative	1093767	465272		0-50	
Shovel Test	327	negative	1093877	465274		0-50	
Shovel Test	328	negative	1093971	465268		0-40	
Shovel Test	329	negative	1094063	465273		0-35	
Shovel Test	330	negative	1094162	465273		0-50	
Shovel Test	331	negative	1094262	465275		0-50	
Shovel Test	332	negative	1094367	465264		0-51	
Shovel Test	333	negative	1094459	465274		0-50	
Shovel Test	334	negative	1094556	465268		0-50	
Shovel Test	335	negative	1094644	465266		0-51	
Shovel Test	336	negative	1094758	465266		0-50	
Shovel Test	337	negative	1094853	465068		0-35	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	339	negative	1094852	464969		0-50	
Shovel Test	340	negative	1094850	464873		0-50	
Shovel Test	341	negative	1094751	464869		0-35	
Shovel Test	342	negative	1094652	464870		0-52	
Shovel Test	343	negative	1094654	464776		0-50	
Shovel Test	344	negative	1094750	464775		0-31	
Shovel Test	345	negative	1094752	464977		0-33	
Shovel Test	346	negative	1094848	464775		0-50	
Shovel Test	347	negative	1094752	465173		0-50	
Shovel Test	348	negative	1094656	465171		0-43	
Shovel Test	349	negative	1094654	465069		0-30	
Shovel Test	350	negative	1094759	465067		0-50	
Shovel Test	351	negative	1094654	464972		0-50	
Shovel Test	352	negative	1094750	464681		0-50	
Shovel Test	353	negative	1094651	464677		0-33	
Shovel Test	354	negative	1095163	466738		0-25	
Shovel Test	355	negative	1095183	466847		0-34	
Shovel Test	356	negative	1095073	466840		0-50	
Shovel Test	357	negative	1094978	466841		0-50	
Shovel Test	358	negative	1094870	466834		0-30	
Shovel Test	359	negative	1094770	466839		0-50	
Shovel Test	360	negative	1094673	466836		0-33	
Shovel Test	361	negative	1094570	466852		0-50	
Shovel Test	362	negative	1094478	466842		0-26	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	363	negative	1094479	466936		0-50	
Shovel Test	364	positive	1094579	466945	Isolated Find 36	0-53	
Shovel Test	365	negative	1094684	466931		0-45	
Shovel Test	366	negative	1094769	466939		0-50	
Shovel Test	367	negative	1094865	466934		0-40	
Shovel Test	368	negative	1094962	466941		0-53	
Shovel Test	369	negative	1095070	466944		0-50	
Shovel Test	370	negative	1095167	466930		0-35	
Shovel Test	371	negative	1095172	467028		0-50	
Shovel Test	372	negative	1095067	467035		0-51	
Shovel Test	373	negative	1094971	467038		0-50	
Shovel Test	374	negative	1094868	467029		0-50	
Shovel Test	375	negative	1094783	467034		0-50	
Shovel Test	376	negative	1094694	467041		0-50	
Shovel Test	377	negative	1094570	467034		0-56	
Shovel Test	378	negative	1094485	467029		0-50	
Shovel Test	379	negative	1094473	467132		0-51	
Shovel Test	380	negative	1094577	467133		0-31	
Shovel Test	381	negative	1094685	467138		0-50	
Shovel Test	382	negative	1094777	467136		0-50	
Shovel Test	383	negative	1094873	467132		0-50	
Shovel Test	384	negative	1094975	467136		0-38	
Shovel Test	385	negative	1095067	467131		0-50	
Shovel Test	386	negative	1095175	467228		0-41	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	387	negative	1095070	467226		0-50	
Shovel Test	388	negative	1094974	467226		0-50	
Shovel Test	389	negative	1094890	467233		0-40	
Shovel Test	390	negative	1094781	467237		0-50	
Shovel Test	391	negative	1094684	467226		0-50	
Shovel Test	392	negative	1094577	467218		0-50	
Shovel Test	393	negative	1094572	467336		0-50	
Shovel Test	394	negative	1094678	467330		0-30	
Shovel Test	395	negative	1094784	467325		0-50	
Shovel Test	396	negative	1094879	467332		0-50	
Shovel Test	397	negative	1094971	467329		0-50	
Shovel Test	398	negative	1095069	467330		0-32	
Shovel Test	399	negative	1095179	467331		0-50	
Shovel Test	400	negative	1095280	467333		0-30	
Shovel Test	401	negative	1095372	467324		0-31	
Shovel Test	402	negative	1095466	467316		0-51	
Shovel Test	403	negative	1095676	467413		0-50	
Shovel Test	404	negative	1095574	467434		0-50	
Shovel Test	405	negative	1095457	467420		0-50	
Shovel Test	406	negative	1095361	467426		0-50	
Shovel Test	407	negative	1095276	467430		0-36	
Shovel Test	408	negative	1095182	467421		0-56	
Shovel Test	409	negative	1095085	467429		0-32	
Shovel Test	410	negative	1094978	467425		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	411	negative	1094887	467431		0-50	
Shovel Test	412	negative	1094785	467427		0-50	
Shovel Test	413	negative	1094686	467426		0-50	
Shovel Test	414	negative	1094684	467508		0-50	
Shovel Test	415	negative	1094778	467522		0-51	
Shovel Test	416	negative	1094877	467543		0-50	
Shovel Test	417	negative	1094973	467526		0-50	
Shovel Test	418	negative	1095074	467521		0-50	
Shovel Test	419	negative	1095182	467524		0-50	
Shovel Test	420	negative	1095280	467537		0-50	
Shovel Test	421	negative	1095371	467525		0-50	
Shovel Test	422	negative	1095469	467527		0-50	
Shovel Test	423	negative	1095574	467523		0-50	
Shovel Test	424	negative	1095568	467626		0-50	
Shovel Test	425	negative	1095487	467617		0-50	
Shovel Test	426	negative	1095370	467621		0-50	
Shovel Test	427	negative	1095264	467634		0-50	
Shovel Test	428	negative	1095174	467630		0-50	
Shovel Test	429	negative	1095076	467633		0-50	
Shovel Test	430	negative	1094978	467632		0-50	
Shovel Test	431	negative	1094885	467631		0-50	
Shovel Test	432	negative	1094787	467644		0-50	
Shovel Test	433	negative	1094786	467737		0-50	
Shovel Test	434	negative	1094879	467733		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	435	negative	1094986	467722		0-50	
Shovel Test	436	negative	1095082	467726		0-50	
Shovel Test	437	negative	1095175	467730		0-50	
Shovel Test	438	negative	1095273	467724		0-50	
Shovel Test	439	negative	1095385	467718		0-50	
Shovel Test	441	negative	1095488	467720		0-50	
Shovel Test	442	negative	1095472	467830		0-50	
Shovel Test	443	negative	1095369	467814		0-50	
Shovel Test	444	negative	1095283	467815		0-50	
Shovel Test	445	negative	1095186	467816		0-50	
Shovel Test	446	negative	1095085	467822		0-50	
Shovel Test	447	negative	1094987	467823		0-50	
Shovel Test	448	negative	1094880	467826		0-50	
Shovel Test	449	negative	1094778	467814		0-50	
Shovel Test	450	negative	1094684	467838		0-50	
Shovel Test	451	negative	1094693	467921		0-50	
Shovel Test	452	negative	1094783	467932		0-50	
Shovel Test	453	negative	1094891	467925		0-50	
Shovel Test	454	negative	1094982	467924		0-50	
Shovel Test	455	negative	1095084	467919		0-50	
Shovel Test	456	negative	1095172	467903		0-50	
Shovel Test	457	negative	1095278	467917		0-50	
Shovel Test	458	negative	1095366	467916		0-50	
Shovel Test	459	negative	1095467	467919		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	460	negative	1095569	467912		0-50	
Shovel Test	461	negative	1095768	468010		0-49	
Shovel Test	462	negative	1095671	468001		0-50	
Shovel Test	463	negative	1095585	467998		0-50	
Shovel Test	464	negative	1095483	468019		0-50	
Shovel Test	465	negative	1095364	468016		0-50	
Shovel Test	466	negative	1095275	468013		0-50	
Shovel Test	467	negative	1095186	468003		0-50	
Shovel Test	468	negative	1095075	468017		0-50	
Shovel Test	469	negative	1094975	468016		0-50	
Shovel Test	470	negative	1094881	468029		0-50	
Shovel Test	471	positive	1094776	468023	Isolated Find 6	0-50	
Shovel Test	472	negative	1094688	468032		0-50	
Shovel Test	473	negative	1094695	468129		0-50	
Shovel Test	474	negative	1094781	468114		0-49	
Shovel Test	475	negative	1094890	468121		0-50	
Shovel Test	476	negative	1094987	468124		0-49	
Shovel Test	477	negative	1095084	468117		0-50	
Shovel Test	478	negative	1095178	468116		0-50	
Shovel Test	479	negative	1095281	468118		0-50	
Shovel Test	480	negative	1095383	468112		0-50	
Shovel Test	481	negative	1095482	468112		0-50	
Shovel Test	482	positive	1095589	468114	Isolated Find 4	0-50	
Shovel Test	483	negative	1095672	468112		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	484	negative	1095765	468112		0-50	
Shovel Test	485	negative	1095863	468105		0-50	
Shovel Test	486	negative	1095958	468207		0-50	
Shovel Test	487	negative	1095872	468207		0-50	
Shovel Test	488	negative	1095764	468215		0-50	
Shovel Test	489	negative	1095670	468213		0-50	
Shovel Test	490	negative	1095567	468210		0-50	
Shovel Test	491	negative	1095476	468209		0-50	
Shovel Test	492	negative	1095375	468213		0-50	
Shovel Test	493	negative	1095277	468213		0-50	
Shovel Test	494	negative	1095184	468214		0-50	
Shovel Test	495	negative	1095081	468229		0-50	
Shovel Test	496	negative	1094980	468214		0-50	
Shovel Test	497	negative	1094883	468223		0-50	
Shovel Test	498	negative	1094786	468221		0-50	
Shovel Test	499	negative	1094687	468220		0-50	
Shovel Test	500	negative	1094688	468309		0-50	
Shovel Test	501	negative	1094785	468316		0-50	
Shovel Test	502	negative	1094875	468312		0-50	
Shovel Test	503	negative	1094990	468316		0-50	
Shovel Test	504	negative	1095090	468313		0-50	
Shovel Test	505	negative	1095182	468318		0-50	
Shovel Test	506	negative	1095285	468314		0-50	
Shovel Test	507	negative	1095382	468312		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	508	negative	1095476	468313		0-50	
Shovel Test	509	negative	1095576	468310		0-50	
Shovel Test	510	negative	1095675	468311		0-50	
Shovel Test	511	negative	1095772	468304		0-50	
Shovel Test	512	negative	1095870	468311		0-50	
Shovel Test	513	negative	1095963	468308		0-50	
Shovel Test	514	negative	1095960	468416		0-50	
Shovel Test	515	negative	1095863	468399		0-50	
Shovel Test	516	negative	1095775	468401		0-50	
Shovel Test	517	negative	1095676	468407		0-50	
Shovel Test	518	negative	1095572	468410		0-50	
Shovel Test	519	negative	1095472	468404		0-50	
Shovel Test	520	negative	1095378	468413		0-50	
Shovel Test	521	negative	1095279	468418		0-50	
Shovel Test	522	negative	1095188	468424		0-50	
Shovel Test	523	negative	1095088	468406		0-97	
Shovel Test	524	negative	1094979	468416		0-50	
Shovel Test	525	negative	1094877	468419		0-50	
Shovel Test	526	negative	1094792	468426		0-50	
Shovel Test	527	negative	1094787	468515		0-50	
Shovel Test	528	negative	1094897	468506		0-50	
Shovel Test	529	negative	1094988	468509		0-50	
Shovel Test	530	negative	1095092	468508		0-50	
Shovel Test	531	negative	1095183	468507		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	532	negative	1095285	468510		0-50	
Shovel Test	533	negative	1095378	468511		0-50	
Shovel Test	534	negative	1095472	468508		0-50	
Shovel Test	535	negative	1095573	468499		0-50	
Shovel Test	536	negative	1095679	468506		0-50	
Shovel Test	537	negative	1095770	468493		0-50	
Shovel Test	538	negative	1095874	468498		0-50	
Shovel Test	539	negative	1095980	468497		0-50	
Shovel Test	540	negative	1095965	468600		0-50	
Shovel Test	541	negative	1095874	468595		0-50	
Shovel Test	542	negative	1095772	468598		0-50	
Shovel Test	543	negative	1095679	468605		0-50	
Shovel Test	544	negative	1095576	468606		0-50	
Shovel Test	545	negative	1095483	468607		0-51	
Shovel Test	546	negative	1095381	468604		0-50	
Shovel Test	547	negative	1095290	468603		0-50	
Shovel Test	548	negative	1095187	468610		0-50	
Shovel Test	549	negative	1095081	468614		0-50	
Shovel Test	550	negative	1094996	468606		0-50	
Shovel Test	551	negative	1094894	468602		0-50	
Shovel Test	552	negative	1094792	468612		0-50	
Shovel Test	553	negative	1094785	468706		0-50	
Shovel Test	554	negative	1094878	468709		0-50	
Shovel Test	555	negative	1094985	468709		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	556	negative	1095090	468704		0-50	
Shovel Test	557	negative	1095185	468707		0-49	
Shovel Test	558	negative	1095284	468701		0-50	
Shovel Test	559	negative	1095385	468695		0-50	
Shovel Test	560	negative	1095481	468692		0-50	
Shovel Test	561	negative	1095588	468698	40MD272	0-50	
Shovel Test	562	positive	1095675	468701	40MD272	0-50	
Shovel Test	563	negative	1095777	468697		0-50	
Shovel Test	564	negative	1095868	468706		0-50	
Shovel Test	565	negative	1095975	468697		0-50	
Shovel Test	566	negative	1095976	468801		0-64	
Shovel Test	567	negative	1095888	468798		0-50	
Shovel Test	568	negative	1095773	468806		0-50	
Shovel Test	569	negative	1095684	468807		0-50	
Shovel Test	570	negative	1095582	468805	40MD272	0-51	
Shovel Test	571	negative	1095494	468805	40MD272	0-50	
Shovel Test	572	negative	1095386	468796	40MD272	0-50	
Shovel Test	573	negative	1095288	468791		0-50	
Shovel Test	574	negative	1095188	468801		0-40	
Shovel Test	575	negative	1095089	468810		0-50	
Shovel Test	576	negative	1094987	468801		0-50	
Shovel Test	577	negative	1094893	468810		0-50	
Shovel Test	578	negative	1094794	468813		0-50	
Shovel Test	579	negative	1094791	468909		0-60	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	580	negative	1094900	468900		0-50	
Shovel Test	581	negative	1094991	468900		0-50	
Shovel Test	582	negative	1095095	468904		0-51	
Shovel Test	583	negative	1095188	468909		0-50	
Shovel Test	584	negative	1095282	468909		0-50	
Shovel Test	585	negative	1095379	468899		0-50	
Shovel Test	586	negative	1095488	468917		0-50	
Shovel Test	587	negative	1095591	468898		0-50	
Shovel Test	588	negative	1095682	468892		0-50	
Shovel Test	589	negative	1095777	468896		0-50	
Shovel Test	590	negative	1095779	468997		0-50	
Shovel Test	591	negative	1095877	468897		0-50	
Shovel Test	592	negative	1095187	468996		0-50	
Shovel Test	593	negative	1095083	468998		0-50	
Shovel Test	594	negative	1094984	469001		0-50	
Shovel Test	595	negative	1094893	469004		0-50	
Shovel Test	596	negative	1094795	469010		0-50	
Shovel Test	597	negative	1094898	469107		0-50	
Shovel Test	598	negative	1094983	469106		0-50	
Shovel Test	599	negative	1095079	469092		0-50	
Shovel Test	600	negative	1095181	469098		0-59	
Shovel Test	602	negative	1095197	469206		0-50	
Shovel Test	603	negative	1095089	469198		0-50	
Shovel Test	604	negative	1094995	469199		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	605	negative	1094891	469204		0-51	
Shovel Test	610	negative	1095390	469292		0-50	
Shovel Test	622	positive	1095494	469492	Isolated Find 17	0-58	
Shovel Test	623	negative	1095492	469397		0-26	
Shovel Test	624	negative	1095393	469399		0-40	
Shovel Test	625	negative	1095296	469400		0-40	
Shovel Test	626	negative	1095191	469400		0-50	
Shovel Test	627	negative	1095095	469395		0-28	
Shovel Test	628	negative	1094993	469393		0-24	
Shovel Test	629	negative	1095001	469308		0-21	
Shovel Test	630	negative	1095095	469297		0-50	
Shovel Test	631	negative	1095193	469298		0-30	
Shovel Test	632	negative	1095291	469293		0-30	
Shovel Test	633	negative	1095290	469192		0-26	
Shovel Test	700	negative	1095279	469000		0-50	
Shovel Test	701	negative	1095278	469098		0-50	
Shovel Test	702	negative	1095387	469103		0-49	
Shovel Test	704	negative	1095386	469192		0-50	
Shovel Test	705	negative	1095492	469293		0-50	
Shovel Test	706	negative	1095580	469400		0-50	
Shovel Test	707	negative	1095596	469494		0-50	
Shovel Test	708	negative	1095693	469585		0-55	
Shovel Test	709	negative	1095592	469602		0-54	
Shovel Test	710	negative	1095690	469675		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	711	negative	1095689	469782		0-50	
Shovel Test	712	negative	1095682	469870		0-50	
Shovel Test	713	negative	1095695	469994		0-50	
Shovel Test	714	negative	1095584	470082		0-50	
Shovel Test	715	negative	1095499	470077		0-50	
Shovel Test	716	negative	1095472	470174		0-50	
Shovel Test	717	negative	1095398	470081		0-50	
Shovel Test	718	negative	1095299	470086		0-50	
Shovel Test	719	negative	1095198	469988		0-37	
Shovel Test	720	negative	1095103	469886		0-50	
Shovel Test	721	negative	1095035	469799		0-59	
Shovel Test	722	negative	1094999	469696		0-56	
Shovel Test	723	negative	1094915	469491		0-50	
Shovel Test	724	negative	1094897	469401		0-50	
Shovel Test	725	negative	1094900	469309		0-50	
Shovel Test	726	negative	1094312	469806		0-50	
Shovel Test	727	negative	1094415	469807		0-50	
Shovel Test	728	negative	1094399	469695		0-50	
Shovel Test	729	negative	1094298	469701		0-50	
Shovel Test	730	negative	1094215	469702		0-50	
Shovel Test	731	negative	1094221	469596		0-50	
Shovel Test	732	negative	1094312	469600		0-50	
Shovel Test	733	negative	1094929	469606		0-50	
Shovel Test	734	negative	1094405	469485		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	735	negative	1094300	469504		0-50	
Shovel Test	736	negative	1094299	469401		0-50	
Shovel Test	737	negative	1094402	469397		0-50	
Shovel Test	738	negative	1094396	469307		0-50	
Shovel Test	739	negative	1094298	469306		0-50	
Shovel Test	740	negative	1094313	469201		0-50	
Shovel Test	741	negative	1094306	469102		0-50	
Shovel Test	742	negative	1094285	469019		0-50	
Shovel Test	743	negative	1094391	469026		0-50	
Shovel Test	744	negative	1094463	468961		0-50	
Shovel Test	745	negative	1093705	468381		0-50	
Shovel Test	746	negative	1093601	468427		0-50	
Shovel Test	747	negative	1093509	468435		0-57	
Shovel Test	748	negative	1093545	468338		0-50	
Shovel Test	749	negative	1093502	468230		0-56	
Shovel Test	750	negative	1093502	468135		0-50	
Shovel Test	751	negative	1093607	468134		0-50	
Shovel Test	752	negative	1093603	468035		0-50	
Shovel Test	753	negative	1093602	467936		0-50	
Shovel Test	755	negative	1093501	467838		0-50	
Shovel Test	756	negative	1093403	467839		0-50	
Shovel Test	757	negative	1093305	467840		0-50	
Shovel Test	758	negative	1093305	467750		0-50	
Shovel Test	759	negative	1093404	467738		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	760	negative	1093500	467745		0-50	
Shovel Test	761	negative	1093601	467742		0-50	
Shovel Test	762	negative	1093601	467636		0-25	
Shovel Test	763	negative	1093508	467645		0-50	
Shovel Test	764	negative	1093391	467648		0-50	
Shovel Test	765	negative	1093307	467647		0-40	
Shovel Test	766	negative	1093598	467542		0-50	
Shovel Test	767	negative	1093502	467536		0-50	
Shovel Test	768	negative	1093991	467528		0-50	
Shovel Test	769	negative	1094099	467525		0-50	
Shovel Test	770	negative	1094079	467428		0-50	
Shovel Test	771	negative	1093990	467439		0-50	
Shovel Test	772	negative	1093896	467456		0-50	
Shovel Test	773	negative	1093876	467351		0-50	
Shovel Test	774	negative	1093986	467347		0-50	
Shovel Test	775	negative	1093987	467240		0-50	
Shovel Test	776	positive	1093893	467239	Isolated Find 30	0-52	
Shovel Test	777	negative	1093792	467250		0-50	
Shovel Test	778	negative	1093788	467150		0-50	
Shovel Test	779	negative	1093879	467152		0-50	
Shovel Test	780	negative	1093988	467146		0-50	
Shovel Test	781	negative	1094082	467141		0-50	
Shovel Test	782	negative	1094070	467248		0-59	
Shovel Test	783	negative	1094082	467046		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	784	negative	1093986	467061		0-50	
Shovel Test	785	negative	1093889	467049		0-50	
Shovel Test	786	negative	1093789	467044		0-50	
Shovel Test	787	negative	1093690	467045		0-50	
Shovel Test	788	negative	1093596	467052		0-59	
Shovel Test	789	negative	1093893	466945		0-52	
Shovel Test	790	positive	1093982	466948	Isolated Find 38	0-50	
Shovel Test	791	negative	1093947	466842		0-50	
Shovel Test	792	negative	1094284	466648		0-50	
Shovel Test	793	negative	1094291	466747		0-50	
Shovel Test	794	negative	1094285	466844		0-50	
Shovel Test	795	negative	1094380	466851		0-50	
Shovel Test	796	negative	1094383	466944		0-50	
Shovel Test	797	negative	1094373	467037		0-49	
Shovel Test	798	negative	1094382	467142		0-50	
Shovel Test	799	negative	1094484	467236		0-50	
Shovel Test	800	negative	1094486	467338		0-50	
Shovel Test	801	negative	1094480	467438		0-50	
Shovel Test	802	negative	1094487	467533		0-50	
Shovel Test	803	negative	1094583	467532		0-50	
Shovel Test	804	negative	1094580	467433		0-51	
Shovel Test	805	negative	1094582	467629		0-50	
Shovel Test	806	negative	1094585	467729		0-50	
Shovel Test	807	negative	1094678	467730		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	808	positive	1094687	467631	Isolated Find 39	0-50	
Shovel Test	809	negative	1095572	467821		0-50	
Shovel Test	810	negative	1095669	467813		0-50	
Shovel Test	811	negative	1095762	467808		0-50	
Shovel Test	812	negative	1095867	467790		0-50	
Shovel Test	813	negative	1095956	467718		0-35	
Shovel Test	814	negative	1095863	467715		0-56	
Shovel Test	815	negative	1095765	467715		0-50	
Shovel Test	816	negative	1095666	467716		0-50	
Shovel Test	817	negative	1095568	467718		0-50	
Shovel Test	819	negative	1095666	467620		0-50	
Shovel Test	820	negative	1095762	467623		0-50	
Shovel Test	821	negative	1095859	467614		0-50	
Shovel Test	822	negative	1095949	467621		0-50	
Shovel Test	823	negative	1095668	467513		0-50	
Shovel Test	824	negative	1095864	467519		0-50	
Shovel Test	825	negative	1095764	467520		0-50	
Shovel Test	826	negative	1095765	467421		0-50	
Shovel Test	827	negative	1095668	467320		0-50	
Shovel Test	828	negative	1095566	467324		0-50	
Shovel Test	829	negative	1095559	467232		0-50	
Shovel Test	830	negative	1095657	467233		0-33	
Shovel Test	831	negative	1095462	467233		0-50	
Shovel Test	832	negative	1095366	467231		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	833	negative	1095271	467230		0-50	
Shovel Test	834	negative	1095168	467133		0-50	
Shovel Test	835	negative	1095273	467130		0-57	
Shovel Test	836	negative	1095370	467122		0-28	
Shovel Test	837	negative	1095461	467134		0-50	
Shovel Test	838	negative	1095569	467130		0-50	
Shovel Test	839	negative	1095469	467032		0-50	
Shovel Test	840	negative	1095366	467023		0-50	
Shovel Test	841	negative	1095274	467046		0-28	
Shovel Test	842	negative	1095260	466935		0-50	
Shovel Test	843	negative	1095363	466932		0-50	
Shovel Test	844	negative	1095458	466938		0-50	
Shovel Test	845	negative	1095457	466834		0-50	
Shovel Test	846	negative	1095362	466834		0-54	
Shovel Test	847	negative	1095263	466835		0-50	
Shovel Test	848	negative	1095262	466738		0-50	
Shovel Test	849	negative	1095360	466734		0-50	
Shovel Test	850	negative	1095460	466740		0-50	
Shovel Test	851	negative	1095362	466640		0-36	
Shovel Test	852	negative	1095351	466550		0-50	
Shovel Test	853	negative	1095263	466644		0-50	
Shovel Test	854	negative	1095261	466547		0-50	
Shovel Test	856	negative	1098781	464339		0-50	
Shovel Test	857	negative	1098780	464226		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	858	negative	1098782	464139		0-50	
Shovel Test	859	negative	1098778	464042		0-50	
Shovel Test	860	negative	1098780	463943		0-56	
Shovel Test	861	negative	1098778	463848		0-50	
Shovel Test	862	negative	1098775	463748		0-50	
Shovel Test	863	negative	1098775	463653		0-50	
Shovel Test	864	negative	1098773	463552		0-50	
Shovel Test	865	negative	1098772	463453		0-50	
Shovel Test	866	negative	1098772	463354		0-54	
Shovel Test	867	negative	1098673	463357		0-64	
Shovel Test	868	negative	1098673	463456		0-50	
Shovel Test	869	negative	1098675	463553		0-53	
Shovel Test	870	negative	1098678	463650		0-52	
Shovel Test	871	negative	1098677	463752		0-50	
Shovel Test	872	negative	1098683	463849		0-50	
Shovel Test	873	negative	1098687	463939		0-50	
Shovel Test	874	negative	1098678	464043		0-50	
Shovel Test	875	negative	1098664	464142		0-50	
Shovel Test	876	negative	1098680	464243		0-50	
Shovel Test	877	negative	1098685	464348		0-50	
Shovel Test	878	negative	1098582	464332		0-50	
Shovel Test	879	negative	1098583	464246		0-50	
Shovel Test	880	negative	1098578	464141		0-49	
Shovel Test	881	negative	1098584	464053		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	882	negative	1098588	463945		0-50	
Shovel Test	883	negative	1098589	463850		0-52	
Shovel Test	884	negative	1098577	463747		0-50	
Shovel Test	885	negative	1098578	463651		0-53	
Shovel Test	886	negative	1098573	463557		0-50	
Shovel Test	887	negative	1098571	463437		0-50	
Shovel Test	888	negative	1098472	463451		0-50	
Shovel Test	889	negative	1098475	463543		0-50	
Shovel Test	890	negative	1098481	463653		0-53	
Shovel Test	891	negative	1098484	463750		0-50	
Shovel Test	892	negative	1098486	463843		0-50	
Shovel Test	893	negative	1098481	463948		0-50	
Shovel Test	894	negative	1098485	464045		0-50	
Shovel Test	895	negative	1098491	464143		0-50	
Shovel Test	896	negative	1098483	464242		0-50	
Shovel Test	897	negative	1098481	464338		0-58	
Shovel Test	898	negative	1098385	464342		0-50	
Shovel Test	899	negative	1098384	464249		0-50	
Shovel Test	900	negative	1098385	464150		0-50	
Shovel Test	901	negative	1098389	464054		0-50	
Shovel Test	902	negative	1098392	463948		0-50	
Shovel Test	903	negative	1098392	463849		0-50	
Shovel Test	904	negative	1098379	463754		0-50	
Shovel Test	905	negative	1098382	463649		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	906	negative	1098379	463552		0-50	
Shovel Test	907	negative	1098374	463458		0-54	
Shovel Test	908	negative	1098279	463459		0-50	
Shovel Test	909	negative	1098282	463550		0-50	
Shovel Test	910	negative	1098289	463651		0-50	
Shovel Test	911	negative	1098287	463746		0-50	
Shovel Test	912	negative	1098286	463848		0-50	
Shovel Test	913	negative	1098278	463954		0-50	
Shovel Test	914	negative	1098288	464052		0-50	
Shovel Test	915	negative	1098291	464146		0-50	
Shovel Test	916	negative	1098298	464266		0-53	
Shovel Test	917	negative	1098294	464340		0-50	
Shovel Test	918	negative	1098196	464352		0-50	
Shovel Test	919	negative	1098201	464262		0-50	
Shovel Test	920	negative	1098186	464149		0-50	
Shovel Test	921	negative	1098184	464044		0-50	
Shovel Test	922	negative	1098188	463955		0-50	
Shovel Test	923	negative	1098184	463856		0-50	
Shovel Test	924	negative	1098181	463760		0-50	
Shovel Test	925	negative	1098084	463757		0-50	
Shovel Test	926	negative	1098095	463855		0-50	
Shovel Test	927	negative	1098082	463953		0-50	
Shovel Test	928	negative	1098091	464045		0-50	
Shovel Test	929	negative	1098087	464153		0-54	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	930	negative	1098092	464244		0-50	
Shovel Test	931	negative	1098089	464342		0-50	
Shovel Test	932	negative	1097996	464356		0-49	
Shovel Test	933	negative	1097998	464248		0-50	
Shovel Test	934	negative	1097995	464150		0-50	
Shovel Test	935	negative	1097987	464048		0-50	
Shovel Test	936	negative	1097990	463954		0-50	
Shovel Test	937	negative	1097986	463857		0-50	
Shovel Test	938	negative	1097889	464058		0-50	
Shovel Test	939	negative	1097901	464151		0-50	
Shovel Test	940	negative	1097898	464241		0-50	
Shovel Test	941	negative	1097898	464340		0-50	
Shovel Test	942	negative	1097793	464349		0-49	
Shovel Test	943	negative	1097792	464250		0-50	
Shovel Test	944	negative	1097796	464158		0-50	
Shovel Test	945	negative	1097785	464061		0-50	
Shovel Test	946	negative	1097694	464058		0-50	
Shovel Test	947	negative	1097695	464156		0-50	
Shovel Test	948	negative	1097700	464248		0-50	
Shovel Test	949	negative	1097699	464355		0-50	
Shovel Test	950	negative	1097593	464350		0-50	
Shovel Test	951	negative	1097607	464251		0-50	
Shovel Test	952	negative	1097599	464151		0-50	
Shovel Test	953	negative	1097604	464062		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	954	negative	1097495	464055		0-59	
Shovel Test	955	negative	1097501	464157		0-50	
Shovel Test	956	negative	1097495	464247		0-50	
Shovel Test	957	negative	1097500	464349		0-55	
Shovel Test	958	negative	1097400	464349		0-50	
Shovel Test	959	negative	1097399	464266		0-50	
Shovel Test	960	negative	1097412	464156		0-50	
Shovel Test	961	negative	1097390	464056		0-50	
Shovel Test	962	negative	1097309	464059		0-50	
Shovel Test	963	negative	1097312	464153		0-50	
Shovel Test	964	negative	1097301	464253		0-50	
Shovel Test	965	negative	1097297	464348		0-50	
Shovel Test	966	negative	1097212	464353		0-50	
Shovel Test	967	negative	1097213	464264		0-50	
Shovel Test	968	negative	1097198	464162		0-50	
Shovel Test	969	negative	1097203	464064		0-50	
Shovel Test	970	negative	1097210	463966		0-50	
Shovel Test	971	negative	1097108	463877		0-50	
Shovel Test	972	negative	1097105	463966		0-50	
Shovel Test	973	negative	1097115	464066		0-55	
Shovel Test	974	negative	1097120	464156		0-49	
Shovel Test	975	negative	1097125	464266		0-50	
Shovel Test	976	negative	1097124	464357		0-50	
Shovel Test	977	negative	1097016	464356		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	978	negative	1097012	464257		0-55	
Shovel Test	979	negative	1097012	464165		0-50	
Shovel Test	980	negative	1097013	464069		0-50	
Shovel Test	981	negative	1097005	463969		0-50	
Shovel Test	982	negative	1097003	463864		0-50	
Shovel Test	983	negative	1096907	463870		0-50	
Shovel Test	984	negative	1096907	463964		0-50	
Shovel Test	985	negative	1096908	464061		0-50	
Shovel Test	986	negative	1096913	464162		0-50	
Shovel Test	987	negative	1096913	464259		0-50	
Shovel Test	988	negative	1096916	464357		0-50	
Shovel Test	989	negative	1096814	464360		0-50	
Shovel Test	990	negative	1096808	464262		0-50	
Shovel Test	991	negative	1096813	464163		0-50	
Shovel Test	992	negative	1096807	464066		0-50	
Shovel Test	993	negative	1096812	463971		0-50	
Shovel Test	994	negative	1096809	463866		0-50	
Shovel Test	995	negative	1096712	463871		0-50	
Shovel Test	996	negative	1096710	463962		0-50	
Shovel Test	997	negative	1096710	464064		0-50	
Shovel Test	998	negative	1096716	464163		0-50	
Shovel Test	999	negative	1096713	464261		0-50	
Shovel Test	1000	positive	1096714	464360	40MD274	0-62	
Shovel Test	1001	positive	1096620	464364	40MD274	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1002	negative	1096615	464262	40MD274	0-50	
Shovel Test	1003	negative	1096613	464168		0-50	
Shovel Test	1004	negative	1096617	464064		0-50	
Shovel Test	1005	negative	1096612	463964		0-50	
Shovel Test	1006	negative	1096607	463872		0-50	
Shovel Test	1007	negative	1096516	463865		0-50	
Shovel Test	1008	negative	1096502	463970		0-54	
Shovel Test	1009	negative	1096513	464069		0-50	
Shovel Test	1010	negative	1096511	464163		0-50	
Shovel Test	1011	negative	1096526	464257	40MD274	0-50	
Shovel Test	1012	positive	1096530	464367	40MD274	0-50	
Shovel Test	1013	negative	1096416	464361	40MD274	0-50	
Shovel Test	1014	positive	1096420	464268	40MD274	0-50	
Shovel Test	1015	negative	1096424	464164		0-50	
Shovel Test	1016	negative	1096424	464076		0-50	
Shovel Test	1017	negative	1096421	463960		0-50	
Shovel Test	1018	negative	1096414	463876		0-50	
Shovel Test	1019	negative	1096310	463871		0-50	
Shovel Test	1020	negative	1096320	463967		0-50	
Shovel Test	1021	negative	1096312	464064		0-50	
Shovel Test	1022	positive	1096316	464163	40MD274	0-50	
Shovel Test	1023	negative	1096313	464273		0-50	
Shovel Test	1024	negative	1096257	464152		0-50	
Shovel Test	1025	negative	1096226	464066		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1026	negative	1096219	463968		0-50	
Shovel Test	1027	negative	1096228	463874		0-50	
Shovel Test	1028	negative	1096220	463780		0-50	
Shovel Test	1029	negative	1096120	463781		0-50	
Shovel Test	1030	negative	1096116	463867		0-50	
Shovel Test	1031	negative	1096124	463976		0-50	
Shovel Test	1032	negative	1096038	463860		0-50	
Shovel Test	1033	negative	1099865	464031		0-50	
Shovel Test	1034	negative	1099863	463933		0-50	
Shovel Test	1035	negative	1099857	463836		0-50	
Shovel Test	1036	positive	1099859	463731	Isolated Find 40	0-50	
Shovel Test	1037	negative	1099762	463648		0-50	
Shovel Test	1038	negative	1099767	463738		0-50	
Shovel Test	1039	negative	1099758	463842		0-50	
Shovel Test	1040	negative	1099763	463935		0-50	
Shovel Test	1041	negative	1099763	464035		0-52	
Shovel Test	1042	negative	1099763	464133		0-50	
Shovel Test	1043	negative	1099862	464130		0-50	
Shovel Test	1044	positive	1099962	464132	NSCR 5	0-50	
Shovel Test	1045	negative	1099957	464038		0-50	
Shovel Test	1046	negative	1099961	463932		0-50	
Shovel Test	1047	negative	1099960	463833		0-50	
Shovel Test	1048	negative	1099956	463741		0-50	
Shovel Test	1049	positive	1100058	463835	Isolated Find 18	0-56	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1050	negative	1100060	463933		0-50	
Shovel Test	1051	negative	1100060	464039		0-50	
Shovel Test	1052	positive	1100055	464132	NSCR 5	0-50	
Shovel Test	1053	negative	1100156	464127		0-50	
Shovel Test	1054	negative	1100257	464226		0-50	
Shovel Test	1055	negative	1100161	464225		0-50	
Shovel Test	1056	negative	1100061	464228		0-50	
Shovel Test	1057	negative	1099964	464229		0-50	
Shovel Test	1058	negative	1099865	464228		0-50	
Shovel Test	1059	negative	1099766	464231		0-50	
Shovel Test	1060	negative	1099668	464231		0-50	
Shovel Test	1061	negative	1099567	464233		0-50	
Shovel Test	1062	negative	1099470	464233		0-50	
Shovel Test	1063	negative	1099370	464235		0-50	
Shovel Test	1064	negative	1099274	464235		0-50	
Shovel Test	1065	negative	1099173	464239		0-50	
Shovel Test	1066	negative	1099078	464237		0-50	
Shovel Test	1067	negative	1098979	464241		0-50	
Shovel Test	1068	negative	1098881	464239		0-50	
Shovel Test	1069	negative	1098881	464141		0-50	
Shovel Test	1070	negative	1098978	464139		0-50	
Shovel Test	1071	negative	1099075	464143		0-50	
Shovel Test	1072	negative	1099175	464142		0-42	
Shovel Test	1073	negative	1099271	464139		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1074	negative	1099371	464136		0-50	
Shovel Test	1075	negative	1099469	464133		0-50	
Shovel Test	1076	negative	1099566	464131		0-50	
Shovel Test	1077	negative	1099662	464134		0-50	
Shovel Test	1078	negative	1099660	464037		0-50	
Shovel Test	1079	negative	1099664	463938		0-50	
Shovel Test	1080	negative	1099661	463837		0-50	
Shovel Test	1081	negative	1099652	463735		0-50	
Shovel Test	1082	negative	1099659	463642		0-50	
Shovel Test	1083	negative	1099657	463546		0-50	
Shovel Test	1084	negative	1099560	463449		0-50	
Shovel Test	1085	negative	1099561	463545		0-50	
Shovel Test	1086	negative	1099560	463643		0-50	
Shovel Test	1087	negative	1099560	463740		0-50	
Shovel Test	1088	negative	1099566	463835		0-50	
Shovel Test	1089	negative	1099567	463939		0-50	
Shovel Test	1090	negative	1099568	464033		0-50	
Shovel Test	1091	negative	1099465	464036		0-50	
Shovel Test	1092	negative	1099468	463933		0-50	
Shovel Test	1093	negative	1099470	463840		0-50	
Shovel Test	1094	negative	1099470	463741		0-50	
Shovel Test	1095	negative	1099478	463636		0-50	
Shovel Test	1096	negative	1099463	463543		0-50	
Shovel Test	1097	negative	1099464	463449		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1098	negative	1099467	463343		0-50	
Shovel Test	1099	negative	1099364	463249		0-50	
Shovel Test	1100	negative	1099365	463350		0-50	
Shovel Test	1101	negative	1099356	463449		0-50	
Shovel Test	1102	negative	1099371	463542		0-50	
Shovel Test	1103	negative	1099370	463646		0-50	
Shovel Test	1104	negative	1099374	463741		0-50	
Shovel Test	1105	negative	1099379	463842		0-50	
Shovel Test	1106	negative	1099372	463935		0-50	
Shovel Test	1107	negative	1099369	464037		0-50	
Shovel Test	1108	negative	1099278	464039		0-50	
Shovel Test	1109	negative	1099272	463935		0-50	
Shovel Test	1110	negative	1099275	463849		0-50	
Shovel Test	1111	negative	1099274	463749		0-50	
Shovel Test	1112	negative	1099255	463646		0-50	
Shovel Test	1113	negative	1099273	463545		0-50	
Shovel Test	1114	negative	1099262	463444		0-50	
Shovel Test	1115	negative	1099275	463349		0-50	
Shovel Test	1116	negative	1099276	463254		0-50	
Shovel Test	1117	negative	1099278	463181		0-50	
Shovel Test	1118	negative	1099161	463148		0-50	
Shovel Test	1119	positive	1099162	463257	Isolated Find 41	0-53	
Shovel Test	1120	negative	1099166	463349		0-50	
Shovel Test	1121	negative	1099166	463455		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1122	negative	1099168	463543		0-50	
Shovel Test	1123	negative	1099172	463641		0-50	
Shovel Test	1124	negative	1099172	463745		0-50	
Shovel Test	1125	negative	1099174	463841		0-50	
Shovel Test	1126	negative	1099177	463952		0-50	
Shovel Test	1127	negative	1099169	464035		0-50	
Shovel Test	1128	negative	1099076	464040		0-50	
Shovel Test	1129	negative	1099084	463942		0-50	
Shovel Test	1130	negative	1099069	463847		0-50	
Shovel Test	1131	negative	1099075	463746		0-50	
Shovel Test	1132	negative	1099074	463649		0-50	
Shovel Test	1133	negative	1099071	463551		0-50	
Shovel Test	1134	negative	1099069	463450		0-50	
Shovel Test	1139	negative	1099028	462994		0-50	
Shovel Test	1140	negative	1098971	463361		0-50	
Shovel Test	1142	negative	1098972	463446		0-50	
Shovel Test	1143	negative	1098966	463548		0-57	
Shovel Test	1144	negative	1098978	463643		0-50	
Shovel Test	1145	negative	1098971	463740		0-50	
Shovel Test	1146	negative	1098969	463841		0-50	
Shovel Test	1147	negative	1098978	463939		0-57	
Shovel Test	1148	negative	1098984	464035		0-56	
Shovel Test	1149	negative	1098877	464040		0-50	
Shovel Test	1150	negative	1098872	463941		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1151	negative	1098875	463841		0-25	
Shovel Test	1152	negative	1098879	463748		0-59	
Shovel Test	1153	negative	1098871	463647		0-50	
Shovel Test	1154	negative	1098870	463545		0-54	
Shovel Test	1155	negative	1098871	463446		0-50	
Shovel Test	1156	negative	1098867	463351		0-50	
Shovel Test	1157	negative	1098872	463250		0-50	
Shovel Test	1200	negative	1098569	463358		0-50	
Shovel Test	1201	negative	1098582	463259		0-50	
Shovel Test	1202	negative	1098573	463156		0-55	
Shovel Test	1203	negative	1098571	463067		0-50	
Shovel Test	1204	negative	1098575	462962		0-50	
Shovel Test	1205	negative	1098575	462866		0-50	
Shovel Test	1206	negative	1098563	462762		0-65	
Shovel Test	1207	negative	1098573	462669		0-50	
Shovel Test	1208	negative	1098473	462477		0-50	
Shovel Test	1209	negative	1098472	462567		0-50	
Shovel Test	1210	negative	1098473	462673		0-64	
Shovel Test	1211	negative	1098474	462773		0-50	
Shovel Test	1212	negative	1098472	462867		0-50	
Shovel Test	1213	negative	1098473	462962		0-50	
Shovel Test	1214	negative	1098475	463058		0-50	
Shovel Test	1215	negative	1098473	463162		0-60	
Shovel Test	1216	negative	1098476	463260		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1217	negative	1098475	463359		0-50	
Shovel Test	1218	negative	1098378	463361		0-50	
Shovel Test	1219	negative	1098375	463259		0-50	
Shovel Test	1220	negative	1098372	463162		0-50	
Shovel Test	1221	negative	1098378	463077		0-50	
Shovel Test	1222	negative	1098376	462959		0-50	
Shovel Test	1223	negative	1098377	462867		0-50	
Shovel Test	1224	negative	1098371	462768		0-50	
Shovel Test	1225	negative	1098369	462670		0-50	
Shovel Test	1226	negative	1098369	462574		0-50	
Shovel Test	1227	negative	1098369	462469		0-50	
Shovel Test	1228	negative	1098270	462374		0-63	
Shovel Test	1229	negative	1098272	462478		0-50	
Shovel Test	1230	negative	1098274	462572		0-50	
Shovel Test	1231	negative	1098271	462669		0-57	
Shovel Test	1232	negative	1098277	462774		0-50	
Shovel Test	1233	negative	1098275	462866		0-50	
Shovel Test	1234	negative	1098275	462964		0-50	
Shovel Test	1235	negative	1098280	463062		0-58	
Shovel Test	1236	negative	1098285	463162		0-50	
Shovel Test	1237	negative	1098281	463262		0-57	
Shovel Test	1238	negative	1098280	463360		0-50	
Shovel Test	1239	negative	1098180	463362		0-50	
Shovel Test	1240	negative	1098182	463261		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1241	negative	1098181	463167		0-50	
Shovel Test	1242	negative	1098181	463059		0-56	
Shovel Test	1243	negative	1098173	462969		0-50	
Shovel Test	1244	negative	1098178	462867		0-50	
Shovel Test	1245	negative	1098178	462769		0-50	
Shovel Test	1246	negative	1098175	462674		0-50	
Shovel Test	1247	negative	1098168	462568		0-50	
Shovel Test	1248	negative	1098175	462472		0-55	
Shovel Test	1249	negative	1098177	462376		0-50	
Shovel Test	1250	negative	1098172	462281		0-50	
Shovel Test	1251	negative	1098069	462176		0-50	
Shovel Test	1252	negative	1098069	462272		0-50	
Shovel Test	1253	negative	1098075	462375		0-55	
Shovel Test	1254	negative	1098076	462479		0-50	
Shovel Test	1255	negative	1098074	462575		0-50	
Shovel Test	1256	negative	1098078	462672		0-50	
Shovel Test	1257	negative	1098080	462772		0-50	
Shovel Test	1258	negative	1098081	462864		0-50	
Shovel Test	1259	negative	1098077	462965		0-50	
Shovel Test	1260	negative	1098084	463068		0-50	
Shovel Test	1261	negative	1098092	463165		0-50	
Shovel Test	1262	negative	1098080	463258		0-50	
Shovel Test	1263	negative	1097986	463263		0-50	
Shovel Test	1264	negative	1097979	463162		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1265	negative	1097980	463066		0-50	
Shovel Test	1266	negative	1097992	462966		0-50	
Shovel Test	1267	negative	1097980	462873		0-50	
Shovel Test	1268	negative	1097984	462771		0-50	
Shovel Test	1269	negative	1097976	462674		0-50	
Shovel Test	1270	negative	1097975	462576		0-50	
Shovel Test	1271	negative	1097974	462475		0-50	
Shovel Test	1272	negative	1097975	462378		0-50	
Shovel Test	1273	negative	1097974	462280		0-57	
Shovel Test	1274	negative	1097971	462182		0-50	
Shovel Test	1275	negative	1097876	462187		0-50	
Shovel Test	1276	negative	1097875	462380		0-50	
Shovel Test	1277	negative	1097877	462478		0-50	
Shovel Test	1278	negative	1097877	462577		0-50	
Shovel Test	1279	negative	1097880	462675		0-50	
Shovel Test	1280	negative	1097876	462772		0-50	
Shovel Test	1281	negative	1097883	462870		0-50	
Shovel Test	1282	negative	1097883	462970		0-50	
Shovel Test	1283	negative	1097884	463070		0-50	
Shovel Test	1284	negative	1097883	463168		0-50	
Shovel Test	1285	negative	1097885	463265		0-50	
Shovel Test	1286	negative	1097785	463265		0-50	
Shovel Test	1287	negative	1097786	463167		0-50	
Shovel Test	1288	negative	1097782	463071		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1289	negative	1097785	462970		0-50	
Shovel Test	1290	negative	1097786	462873		0-50	
Shovel Test	1291	negative	1097784	462776		0-50	
Shovel Test	1292	negative	1097783	462675		0-50	
Shovel Test	1293	negative	1097792	462579		0-50	
Shovel Test	1294	negative	1097777	462477		0-50	
Shovel Test	1295	negative	1097780	462384		0-50	
Shovel Test	1296	negative	1097781	462280		0-25	
Shovel Test	1297	negative	1097776	462186		0-50	
Shovel Test	1298	negative	1097681	462186		0-50	
Shovel Test	1299	negative	1097682	462283		0-50	
Shovel Test	1300	negative	1097673	462382		0-45	
Shovel Test	1301	positive	1097678	462479	Isolated Find 31	0-50	
Shovel Test	1302	negative	1097681	462583		0-50	
Shovel Test	1303	negative	1097682	462678		0-50	
Shovel Test	1304	negative	1097678	462776		0-50	
Shovel Test	1305	negative	1097685	462875		0-50	
Shovel Test	1306	negative	1097684	462975		0-50	
Shovel Test	1307	negative	1097677	463063		0-50	
Shovel Test	1308	negative	1097691	463170		0-50	
Shovel Test	1309	negative	1097685	463273		0-50	
Shovel Test	1310	negative	1097589	463263		0-50	
Shovel Test	1311	negative	1097588	463173		0-50	
Shovel Test	1312	negative	1097589	463070		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1313	negative	1097586	462972		0-50	
Shovel Test	1314	negative	1097589	462878		0-50	
Shovel Test	1315	negative	1097593	462686		0-50	
Shovel Test	1316	negative	1097592	462587		0-50	
Shovel Test	1317	negative	1097585	462480		0-50	
Shovel Test	1318	negative	1097578	462389		0-50	
Shovel Test	1319	negative	1097576	462288		0-50	
Shovel Test	1320	negative	1097478	462572		0-50	
Shovel Test	1321	negative	1097488	462672		0-50	
Shovel Test	1322	negative	1097483	462782		0-50	
Shovel Test	1323	negative	1097490	462880		0-50	
Shovel Test	1324	negative	1097485	462969		0-50	
Shovel Test	1325	negative	1097488	463072		0-50	
Shovel Test	1326	negative	1097484	463179		0-50	
Shovel Test	1327	negative	1097483	463270		0-50	
Shovel Test	1328	negative	1097390	463271		0-50	
Shovel Test	1329	negative	1097395	463169		0-50	
Shovel Test	1330	negative	1097395	463066		0-50	
Shovel Test	1331	negative	1097393	462977		0-50	
Shovel Test	1332	negative	1097387	462874		0-50	
Shovel Test	1333	negative	1097390	462778		0-50	
Shovel Test	1334	negative	1097314	462975		0-50	
Shovel Test	1335	negative	1097292	463073		0-50	
Shovel Test	1336	negative	1097292	463173		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1337	negative	1097295	463273		0-57	
Shovel Test	1338	negative	1097199	463368		0-50	
Shovel Test	1339	negative	1097197	463277		0-50	
Shovel Test	1340	negative	1097196	463173		0-62	
Shovel Test	1341	negative	1097097	463076		0-50	
Shovel Test	1342	negative	1097095	463176		0-50	
Shovel Test	1343	negative	1097101	463263		0-50	
Shovel Test	1344	negative	1097095	463374		0-25	
Shovel Test	1345	negative	1097001	463370		0-50	
Shovel Test	1346	negative	1096996	463276		0-50	
Shovel Test	1347	negative	1096997	463178		0-50	
Shovel Test	1348	negative	1096997	463085		0-56	
Shovel Test	1349	negative	1096998	462978		0-53	
Shovel Test	1350	negative	1096979	462873		0-50	
Shovel Test	1351	negative	1096995	462784		0-50	
Shovel Test	1352	negative	1096994	462688		0-50	
Shovel Test	1353	negative	1096990	462589		0-50	
Shovel Test	1354	negative	1097095	462581		0-50	
Shovel Test	1355	negative	1097098	462674		0-38	
Shovel Test	1356	negative	1097096	462789		0-50	
Shovel Test	1357	negative	1097095	462880		0-50	
Shovel Test	1358	negative	1097069	462991		0-50	
Shovel Test	1359	positive	1097008	463468	40MD279	0-66	
Shovel Test	1360	positive	1097003	463571	40MD279	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1361	negative	1097104	463658		0-58	
Shovel Test	1362	negative	1097097	463571	40MD279	0-50	
Shovel Test	1363	negative	1097103	463473		0-50	
Shovel Test	1364	negative	1097200	463465		0-50	
Shovel Test	1365	negative	1097200	463565		0-50	
Shovel Test	1366	negative	1097192	463656		0-50	
Shovel Test	1367	negative	1097201	463767		0-50	
Shovel Test	1368	negative	1097208	463867		0-50	
Shovel Test	1369	negative	1097313	463961		0-50	
Shovel Test	1370	negative	1097301	463861		0-50	
Shovel Test	1371	negative	1097297	463766		0-50	
Shovel Test	1372	negative	1097306	463660		0-50	
Shovel Test	1373	positive	1097291	463572	Isolated Find 20	0-58	
Shovel Test	1374	negative	1097280	463460		0-50	
Shovel Test	1375	negative	1097302	463369		0-50	
Shovel Test	1376	negative	1097388	463373		0-50	
Shovel Test	1377	negative	1097387	463462		0-55	
Shovel Test	1378	negative	1097395	463568		0-50	
Shovel Test	1379	negative	1097400	463654		0-50	
Shovel Test	1380	negative	1097398	463766		0-50	
Shovel Test	1381	negative	1097402	463864		0-50	
Shovel Test	1382	negative	1097399	463953		0-50	
Shovel Test	1383	positive	1097505	463958	Isolated Find 42	0-50	
Shovel Test	1384	negative	1097501	463861		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1385	negative	1097495	463764		0-50	
Shovel Test	1386	negative	1097496	463655		0-50	
Shovel Test	1387	negative	1097497	463570		0-50	
Shovel Test	1388	negative	1097491	463471		0-50	
Shovel Test	1389	negative	1097490	463357		0-50	
Shovel Test	1390	negative	1097594	463369		0-50	
Shovel Test	1391	positive	1096899	463372	40MD279	0-25	
Shovel Test	1392	negative	1096907	463275		0-50	
Shovel Test	1393	negative	1096904	463179		0-50	
Shovel Test	1394	negative	1096900	463075		0-50	
Shovel Test	1395	negative	1096901	462977		0-50	
Shovel Test	1396	negative	1096898	462883		0-50	
Shovel Test	1397	negative	1096900	462785		0-50	
Shovel Test	1398	negative	1096809	462794		0-50	
Shovel Test	1399	negative	1096813	462878		0-50	
Shovel Test	1400	negative	1096799	462983		0-50	
Shovel Test	1401	negative	1096807	463083		0-50	
Shovel Test	1402	negative	1096810	463175		0-50	
Shovel Test	1403	negative	1096804	463276		0-50	
Shovel Test	1404	negative	1096796	463376		0-50	
Shovel Test	1405	negative	1096802	463474		0-50	
Shovel Test	1406	negative	1096713	463474		0-50	
Shovel Test	1407	negative	1096715	463377		0-50	
Shovel Test	1408	negative	1096706	463277		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1409	negative	1096707	463180		0-50	
Shovel Test	1410	negative	1096700	463081		0-50	
Shovel Test	1411	negative	1096703	462982		0-50	
Shovel Test	1412	negative	1096696	462888		0-50	
Shovel Test	1413	negative	1096600	462988		0-50	
Shovel Test	1414	negative	1096603	463080		0-50	
Shovel Test	1415	negative	1096604	463176		0-50	
Shovel Test	1416	negative	1096609	463376		0-50	
Shovel Test	1417	negative	1096606	463478		0-50	
Shovel Test	1418	negative	1096510	463478		0-50	
Shovel Test	1419	negative	1096502	463379		0-25	
Shovel Test	1420	negative	1096501	463284		0-50	
Shovel Test	1421	negative	1096504	463173		0-50	
Shovel Test	1422	negative	1096511	463087		0-50	
Shovel Test	1423	negative	1096404	463181		0-50	
Shovel Test	1424	negative	1096405	463276		0-50	
Shovel Test	1425	negative	1096420	463377		0-50	
Shovel Test	1426	negative	1097587	463460		0-50	
Shovel Test	1427	negative	1097595	463566		0-50	
Shovel Test	1428	negative	1097599	463665		0-50	
Shovel Test	1429	negative	1097591	463763		0-50	
Shovel Test	1430	negative	1097601	463851		0-50	
Shovel Test	1431	negative	1097597	463950		0-50	
Shovel Test	1432	negative	1097683	463951		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1433	negative	1097692	463859		0-50	
Shovel Test	1434	negative	1097693	463757		0-50	
Shovel Test	1435	negative	1097690	463664		0-55	
Shovel Test	1436	negative	1097698	463556		0-50	
Shovel Test	1437	negative	1097692	463463		0-64	
Shovel Test	1438	negative	1097696	463366		0-50	
Shovel Test	1439	negative	1097790	463368		0-50	
Shovel Test	1440	negative	1097785	463457		0-50	
Shovel Test	1441	negative	1097792	463552		0-50	
Shovel Test	1442	negative	1097787	463654		0-50	
Shovel Test	1443	negative	1097783	463752		0-50	
Shovel Test	1444	negative	1097801	463858		0-50	
Shovel Test	1445	negative	1097799	463952		0-50	
Shovel Test	1446	negative	1097891	463951		0-50	
Shovel Test	1447	negative	1097893	463855		0-50	
Shovel Test	1448	negative	1097885	463764		0-53	
Shovel Test	1449	negative	1097887	463662		0-50	
Shovel Test	1450	negative	1097898	463561		0-50	
Shovel Test	1451	positive	1097893	463370	Isolated Find 43	0-50	
Shovel Test	1452	negative	1097974	463360		0-50	
Shovel Test	1453	negative	1097982	463459		0-50	
Shovel Test	1454	negative	1097986	463564		0-50	
Shovel Test	1455	positive	1097991	463655	Isolated Find 21	0-55	
Shovel Test	1456	negative	1097993	463765		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1457	negative	1098090	463667		0-50	
Shovel Test	1458	negative	1098084	463553		0-50	
Shovel Test	1459	negative	1098084	463464		0-50	
Shovel Test	1460	negative	1098085	463362		0-50	
Shovel Test	1461	negative	1098185	463457		0-50	
Shovel Test	1462	negative	1098187	463559		0-50	
Shovel Test	1463	negative	1098185	463653		0-50	
Shovel Test	1464	positive	1098372	462373	Isolated Find 22	0-50	
Shovel Test	1465	negative	1098469	462379		0-50	
Shovel Test	1466	negative	1098556	462365		0-50	
Shovel Test	1467	negative	1098660	462380		0-58	
Shovel Test	1468	negative	1098765	462368		0-50	
Shovel Test	1469	negative	1098858	462370		0-50	
Shovel Test	1470	negative	1098959	462364		0-50	
Shovel Test	1471	negative	1098961	462271		0-50	
Shovel Test	1472	negative	1098851	462272		0-50	
Shovel Test	1473	negative	1098768	462274		0-50	
Shovel Test	1474	negative	1098660	462271		0-50	
Shovel Test	1475	negative	1098562	462278		0-50	
Shovel Test	1476	negative	1098465	462276		0-50	
Shovel Test	1477	negative	1098363	462272		0-50	
Shovel Test	1478	negative	1098273	462275		0-50	
Shovel Test	1479	negative	1098175	462176		0-50	
Shovel Test	1480	negative	1098277	462180		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1481	negative	1098359	462180		0-50	
Shovel Test	1482	negative	1098478	462178		0-50	
Shovel Test	1483	negative	1098566	462177		0-50	
Shovel Test	1484	negative	1098663	462176		0-50	
Shovel Test	1485	negative	1098746	462168		0-50	
Shovel Test	1486	negative	1098866	462172		0-50	
Shovel Test	1487	negative	1098964	462176		0-50	
Shovel Test	1488	negative	1099043	462169		0-50	
Shovel Test	1489	negative	1099147	462073		0-50	
Shovel Test	1490	negative	1099050	462074		0-50	
Shovel Test	1491	negative	1098947	462077		0-50	
Shovel Test	1492	negative	1098861	462083		0-50	
Shovel Test	1493	negative	1098755	462084		0-50	
Shovel Test	1494	negative	1098658	462072		0-50	
Shovel Test	1495	negative	1098567	462082		0-50	
Shovel Test	1496	negative	1098476	462082		0-50	
Shovel Test	1497	negative	1098366	462083		0-50	
Shovel Test	1498	negative	1098259	462084		0-50	
Shovel Test	1499	negative	1098172	462081		0-50	
Shovel Test	1500	negative	1098067	462081		0-50	
Shovel Test	1501	negative	1098067	461981		0-50	
Shovel Test	1502	negative	1098170	461983		0-50	
Shovel Test	1503	negative	1098263	461982		0-50	
Shovel Test	1504	negative	1098365	461982		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1505	negative	1098462	461983		0-50	
Shovel Test	1506	negative	1098564	461983		0-50	
Shovel Test	1507	negative	1098659	461979		0-50	
Shovel Test	1508	negative	1098756	461975		0-50	
Shovel Test	1509	negative	1098855	461977		0-50	
Shovel Test	1510	negative	1098955	461975		0-50	
Shovel Test	1511	negative	1099060	461980		0-50	
Shovel Test	1512	negative	1099148	461977		0-50	
Shovel Test	1513	negative	1099150	461874		0-50	
Shovel Test	1514	negative	1099051	461876		0-25	
Shovel Test	1515	negative	1098947	461879		0-50	
Shovel Test	1516	negative	1098857	461874		0-50	
Shovel Test	1517	negative	1098754	461883		0-50	
Shovel Test	1518	negative	1098658	461882		0-50	
Shovel Test	1519	negative	1098556	461881		0-50	
Shovel Test	1520	negative	1098458	461880		0-50	
Shovel Test	1521	negative	1098368	461884		0-50	
Shovel Test	1522	negative	1098262	461882		0-50	
Shovel Test	1523	negative	1098165	461884		0-50	
Shovel Test	1524	negative	1098262	461786		0-50	
Shovel Test	1525	negative	1098362	461780		0-50	
Shovel Test	1526	negative	1098457	461784		0-50	
Shovel Test	1527	negative	1098569	461785		0-50	
Shovel Test	1528	negative	1098658	461787		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1529	negative	1098754	461774		0-50	
Shovel Test	1530	negative	1098850	461781		0-60	
Shovel Test	1531	negative	1098962	461776		0-50	
Shovel Test	1532	negative	1099049	461780		0-50	
Shovel Test	1533	negative	1099134	461783		0-50	
Shovel Test	1534	negative	1099148	461673		0-50	
Shovel Test	1535	negative	1099045	461674		0-50	
Shovel Test	1536	negative	1098953	461678		0-50	
Shovel Test	1537	negative	1098853	461681		0-50	
Shovel Test	1538	negative	1098758	461690		0-50	
Shovel Test	1539	negative	1098652	461688		0-50	
Shovel Test	1540	negative	1098550	461686		0-50	
Shovel Test	1541	negative	1098461	461689		0-50	
Shovel Test	1542	negative	1098361	461692		0-50	
Shovel Test	1543	negative	1098654	461590		0-50	
Shovel Test	1544	negative	1098757	461579		0-70	
Shovel Test	1545	negative	1098856	461588		0-50	
Shovel Test	1546	negative	1098944	461569		0-50	
Shovel Test	1547	negative	1099044	461573		0-50	
Shovel Test	1548	negative	1099145	461572		0-50	
Shovel Test	1549	negative	1095854	463564		0-50	
Shovel Test	1550	negative	1095824	463482		0-50	
Shovel Test	1551	negative	1095719	463395		0-50	
Shovel Test	1552	negative	1095664	463289		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1553	negative	1095618	463196	NSCR 3	0-50	
Shovel Test	1554	negative	1095524	463097		0-50	
Shovel Test	1555	negative	1095620	463091	NSCR 3	0-50	
Shovel Test	1556	positive	1095717	463090	NSCR 3	0-50	
Shovel Test	1557	negative	1095815	463089	NSCR 3	0-50	
Shovel Test	1558	negative	1095915	463089	NSCR 3	0-50	
Shovel Test	1559	negative	1096010	463086	NSCR 3	0-50	
Shovel Test	1560	negative	1096112	463089	NSCR 3	0-57	
Shovel Test	1561	positive	1096207	463086	NSCR 3	0-50	
Shovel Test	1562	negative	1096310	463085		0-50	
Shovel Test	1563	negative	1096110	462989	NSCR 3	0-50	
Shovel Test	1564	negative	1096014	462991	NSCR 3	0-50	
Shovel Test	1565	negative	1095914	462992	NSCR 3	0-50	
Shovel Test	1566	negative	1095813	462994	NSCR 3	0-55	
Shovel Test	1567	negative	1095716	462991		0-50	
Shovel Test	1568	negative	1095720	463186	NSCR 3	0-50	
Shovel Test	1569	negative	1095816	463188	NSCR 3	0-50	
Shovel Test	1570	negative	1095920	463185	NSCR 3	0-50	
Shovel Test	1571	negative	1096015	463186	NSCR 3	0-25	
Shovel Test	1572	positive	1096113	463185	40MD275	0-70	
Shovel Test	1573	negative	1096211	463182		0-50	
Shovel Test	1574	negative	1096306	463187		0-50	
Shovel Test	1575	negative	1096217	463284		0-25	
Shovel Test	1576	negative	1096111	463285		0-57	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1577	negative	1096011	463284	40MD275	0-50	
Shovel Test	1578	negative	1095917	463288		0-50	
Shovel Test	1579	negative	1095820	463285		0-50	
Shovel Test	1580	negative	1095716	463292	NSCR 3	0-50	
Shovel Test	1581	negative	1095822	463384		0-50	
Shovel Test	1582	negative	1095916	463384		0-50	
Shovel Test	1583	negative	1096015	463383		0-50	
Shovel Test	1584	negative	1096114	463380		0-50	
Shovel Test	1585	negative	1096213	463383		0-50	
Shovel Test	1586	negative	1096302	463383		0-50	
Shovel Test	1587	negative	1096310	463284		0-43	
Shovel Test	1588	negative	1096410	463475		0-62	
Shovel Test	1589	negative	1096314	463481		0-50	
Shovel Test	1590	negative	1096214	463479		0-13	
Shovel Test	1591	positive	1096111	463486	Isolated Find 44	0-54	
Shovel Test	1592	negative	1096016	463482		0-50	
Shovel Test	1593	negative	1095922	463484		0-50	
Shovel Test	1594	negative	1095920	463579		0-50	
Shovel Test	1595	negative	1096014	463582		0-50	
Shovel Test	1597	negative	1096304	462980		0-50	
Shovel Test	1598	negative	1096405	462996		0-50	
No Dig Point	1599	no dig - ravine	1096500	462974			
Shovel Test	1600	negative	1097569	461793		0-50	
Shovel Test	1601	negative	1097570	461890		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1602	negative	1097477	461892		0-50	
Shovel Test	1603	negative	1097475	461791		0-50	
Shovel Test	1604	negative	1097475	461695		0-50	
Shovel Test	1605	negative	1097377	461701		0-50	
Shovel Test	1606	negative	1097380	461792		0-50	
Shovel Test	1607	negative	1097378	461897		0-50	
Shovel Test	1608	negative	1097280	461996		0-50	
Shovel Test	1609	negative	1097282	461896		0-50	
Shovel Test	1610	negative	1097276	461796		0-50	
Shovel Test	1611	negative	1097275	461696		0-56	
Shovel Test	1612	positive	1097269	461636	Isolated Find 24	0-50	
Shovel Test	1613	negative	1097178	461635		0-50	
Shovel Test	1614	negative	1097180	461692		0-50	
Shovel Test	1615	negative	1097184	461798		0-50	
Shovel Test	1616	negative	1097182	461898		0-50	
Shovel Test	1617	negative	1097180	461998		0-50	
Shovel Test	1618	negative	1097180	462090		0-50	
Shovel Test	1619	negative	1097082	462191		0-50	
Shovel Test	1620	negative	1097085	462102		0-50	
Shovel Test	1621	negative	1097081	462001		0-50	
Shovel Test	1622	negative	1097080	461892		0-50	
Shovel Test	1623	negative	1097092	461796		0-50	
Shovel Test	1624	negative	1097087	461701		0-50	
Shovel Test	1625	negative	1097092	461639		0-60	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1626	negative	1096985	461642		0-25	
Shovel Test	1627	negative	1096985	461695		0-54	
Shovel Test	1628	negative	1096984	461796		0-50	
Shovel Test	1629	negative	1096980	461896		0-50	
Shovel Test	1631	negative	1096984	461990		0-50	
Shovel Test	1632	negative	1096992	462094		0-50	
Shovel Test	1633	negative	1096988	462188		0-50	
Shovel Test	1634	negative	1096987	462282		0-55	
Shovel Test	1635	negative	1096990	462388		0-54	
Shovel Test	1636	negative	1096895	462394		0-50	
Shovel Test	1637	negative	1096792	462397		0-50	
Shovel Test	1638	negative	1096695	462390		0-50	
Shovel Test	1639	negative	1096603	462394		0-54	
Shovel Test	1640	negative	1096501	462392		0-50	
Shovel Test	1641	negative	1096401	462397		0-50	
Shovel Test	1642	negative	1096300	462398		0-50	
Shovel Test	1643	negative	1096203	462398		0-59	
Shovel Test	1644	negative	1096103	462401		0-50	
Shovel Test	1645	negative	1096005	462398		0-50	
Shovel Test	1646	positive	1095901	462403	Isolated Find 45	0-50	
Shovel Test	1647	negative	1095910	462492		0-50	
Shovel Test	1648	negative	1096008	462499		0-50	
Shovel Test	1649	negative	1096100	462488		0-50	
Shovel Test	1650	negative	1096400	462590		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1651	negative	1096302	462589		0-50	
Shovel Test	1652	negative	1096200	462587		0-50	
Shovel Test	1653	negative	1096111	462601		0-50	
Shovel Test	1654	positive	1095997	462596	Isolated Find 52	0-50	
Shovel Test	1655	positive	1096110	462695	Isolated Find 53	0-50	
Shovel Test	1656	negative	1096201	462683	40MD276	0-50	
Shovel Test	1657	positive	1096304	462686	40MD276	0-50	
Shovel Test	1658	negative	1096397	462682	40MD276	0-50	
Shovel Test	1659	negative	1096013	462300		0-50	
Shovel Test	1660	negative	1096110	462304		0-50	
Shovel Test	1661	negative	1096212	462298		0-50	
Shovel Test	1662	negative	1096303	462299		0-50	
Shovel Test	1664	negative	1096495	462298		0-50	
Shovel Test	1665	negative	1096596	462293		0-50	
Shovel Test	1666	negative	1096401	462294		0-50	
Shovel Test	1667	negative	1096683	462289		0-50	
Shovel Test	1668	negative	1096779	462293		0-57	
Shovel Test	1669	negative	1096882	462298		0-61	
Shovel Test	1670	negative	1096888	462188		0-50	
Shovel Test	1671	negative	1096787	462189		0-50	
Shovel Test	1672	negative	1096694	462196		0-50	
Shovel Test	1673	negative	1096597	462197		0-52	
Shovel Test	1674	negative	1096502	462202		0-50	
Shovel Test	1675	negative	1096397	462199		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1676	negative	1096297	462198		0-50	
Shovel Test	1677	negative	1096201	462201		0-50	
Shovel Test	1678	negative	1096099	462206		0-50	
Shovel Test	1679	negative	1095998	462197		0-53	
Shovel Test	1680	negative	1095909	462204		0-59	
Shovel Test	1681	negative	1095805	462205		0-50	
Shovel Test	1682	negative	1095809	462105		0-50	
Shovel Test	1683	negative	1095911	462114		0-50	
Shovel Test	1684	negative	1096001	462104		0-52	
Shovel Test	1685	negative	1096108	462102		0-50	
Shovel Test	1686	negative	1096199	462105		0-50	
Shovel Test	1689	negative	1096303	462097		0-50	
Shovel Test	1690	negative	1096392	462096		0-58	
Shovel Test	1691	negative	1096501	462098		0-50	
Shovel Test	1692	negative	1096595	462090		0-50	
Shovel Test	1693	negative	1096684	462098		0-50	
Shovel Test	1694	negative	1096795	462086		0-50	
Shovel Test	1695	negative	1096882	462092		0-59	
Shovel Test	1696	negative	1096884	462003		0-25	
Shovel Test	1697	negative	1096775	461995		0-50	
Shovel Test	1698	negative	1096683	462001		0-50	
Shovel Test	1699	negative	1096601	462000		0-50	
Shovel Test	1700	negative	1096496	462006		0-50	
Shovel Test	1701	negative	1096395	462008		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1702	negative	1096293	462005		0-57	
Shovel Test	1703	negative	1096199	461998		0-50	
Shovel Test	1704	negative	1096104	462015		0-50	
Shovel Test	1705	negative	1095995	462004		0-50	
Shovel Test	1706	negative	1095906	461997		0-50	
Shovel Test	1707	negative	1095808	462007		0-50	
Shovel Test	1708	negative	1095798	461908		0-50	
Shovel Test	1709	negative	1095903	461908		0-50	
Shovel Test	1710	negative	1096000	461904		0-50	
Shovel Test	1711	positive	1096102	461902	Isolated Find 46	0-50	
Shovel Test	1712	negative	1096196	461906		0-52	
Shovel Test	1713	negative	1096294	461905		0-50	
Shovel Test	1714	negative	1096394	461904		0-50	
Shovel Test	1715	negative	1096489	461901		0-50	
Shovel Test	1716	negative	1096589	461902		0-50	
Shovel Test	1717	negative	1096689	461898		0-50	
Shovel Test	1718	negative	1096791	461895		0-50	
Shovel Test	1719	negative	1096888	461898		0-50	
Shovel Test	1720	negative	1096886	461799		0-50	
Shovel Test	1721	negative	1096782	461801		0-50	
Shovel Test	1722	negative	1096689	461797		0-50	
Shovel Test	1723	negative	1096592	461803		0-50	
Shovel Test	1724	negative	1096492	461802		0-50	
Shovel Test	1725	negative	1096394	461804		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1726	negative	1096300	461803		0-50	
Shovel Test	1727	negative	1096201	461808		0-50	
Shovel Test	1728	negative	1096101	461806		0-50	
Shovel Test	1729	negative	1096000	461806		0-50	
Shovel Test	1730	negative	1095908	461804		0-50	
Shovel Test	1731	negative	1095807	461812		0-50	
Shovel Test	1732	negative	1095704	461807		0-50	
Shovel Test	1733	negative	1095611	461809		0-50	
Shovel Test	1734	negative	1095506	461810		0-50	
Shovel Test	1735	negative	1095412	461813		0-25	
Shovel Test	1736	negative	1095311	461819		0-50	
Shovel Test	1737	negative	1095212	461821		0-50	
Shovel Test	1738	negative	1095114	461816		0-50	
Shovel Test	1739	negative	1095012	461819		0-50	
Shovel Test	1740	negative	1094917	461817		0-50	
Shovel Test	1741	negative	1094813	461822		0-50	
Shovel Test	1742	negative	1094716	461823		0-50	
Shovel Test	1743	negative	1094622	461821		0-50	
Shovel Test	1744	positive	1094528	461820	Isolated Find 1	0-50	
Shovel Test	1745	negative	1094425	461819		0-50	
Shovel Test	1746	negative	1094331	461825		0-50	
Shovel Test	1747	negative	1094345	461929		0-50	
Shovel Test	1748	negative	1094421	461923		0-50	
Shovel Test	1749	negative	1094528	461929		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1750	positive	1094627	461911	Isolated Find 2	0-50	
Shovel Test	1751	negative	1094720	461929		0-50	
Shovel Test	1752	negative	1094817	461918		0-50	
Shovel Test	1753	negative	1094916	461915		0-50	
Shovel Test	1754	negative	1095008	461917		0-50	
Shovel Test	1755	negative	1095116	461916		0-50	
Shovel Test	1756	negative	1095216	461920		0-50	
Shovel Test	1757	negative	1095321	461907		0-50	
Shovel Test	1758	negative	1095410	461914		0-50	
Shovel Test	1759	negative	1095507	461911		0-50	
Shovel Test	1760	negative	1095598	461902		0-50	
Shovel Test	1761	negative	1095707	461916		0-50	
Shovel Test	1762	negative	1095705	462012		0-50	
Shovel Test	1763	negative	1095606	462005		0-50	
Shovel Test	1764	negative	1095521	462007		0-50	
Shovel Test	1765	negative	1095409	462019		0-50	
Shovel Test	1766	negative	1095311	462011		0-50	
Shovel Test	1767	negative	1095211	462016		0-52	
Shovel Test	1768	negative	1095107	462019		0-50	
Shovel Test	1769	negative	1095011	462015		0-50	
Shovel Test	1770	negative	1094915	462014		0-59	
Shovel Test	1771	negative	1094820	462019		0-50	
Shovel Test	1772	negative	1094725	462017		0-50	
Shovel Test	1773	negative	1094627	462021		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1774	negative	1094523	462022		0-50	
Shovel Test	1775	negative	1094430	462018		0-50	
Shovel Test	1776	negative	1094338	462015		0-50	
Shovel Test	1777	negative	1094432	462121		0-50	
Shovel Test	1778	negative	1094527	462116		0-50	
Shovel Test	1779	negative	1094623	462122		0-50	
Shovel Test	1780	negative	1094723	462119		0-50	
Shovel Test	1781	negative	1094817	462123		0-50	
Shovel Test	1782	negative	1094926	462118		0-50	
Shovel Test	1783	negative	1095017	462106		0-50	
Shovel Test	1784	negative	1095119	462116		0-54	
Shovel Test	1785	positive	1095219	462107	Isolated Find 9	0-50	
Shovel Test	1786	negative	1095114	462206		0-50	
Shovel Test	1787	negative	1095019	462206		0-50	
Shovel Test	1788	negative	1094916	462218		0-50	
Shovel Test	1789	negative	1094825	462217		0-25	
Shovel Test	1790	negative	1094718	462216		0-50	
Shovel Test	1791	negative	1094632	462226		0-50	
Shovel Test	1792	negative	1094527	462219		0-50	
Shovel Test	1793	negative	1094634	462298		0-50	
Shovel Test	1794	negative	1094727	462314		0-50	
Shovel Test	1795	negative	1094362	461752		0-50	
Shovel Test	1796	negative	1094428	461750		0-50	
Shovel Test	1797	negative	1094532	461747		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1798	negative	1094622	461739		0-50	
Shovel Test	1799	negative	1094716	461732		0-50	
Shovel Test	1800	negative	1094813	461731		0-50	
Shovel Test	1801	negative	1094919	461731		0-50	
Shovel Test	1802	negative	1095015	461733		0-50	
Shovel Test	1803	negative	1095112	461720		0-50	
Shovel Test	1804	negative	1095210	461719		0-50	
Shovel Test	1805	positive	1095312	461721	Isolated Find 3	0-50	
Shovel Test	1806	negative	1095406	461713		0-50	
Shovel Test	1807	negative	1095510	461710		0-50	
Shovel Test	1808	negative	1095601	461718		0-55	
Shovel Test	1809	negative	1095705	461713		0-50	
Shovel Test	1810	negative	1095802	461715		0-50	
Shovel Test	1811	negative	1095892	461706		0-50	
Shovel Test	1812	negative	1095996	461704		0-50	
Shovel Test	1813	negative	1096098	461699		0-50	
Shovel Test	1814	negative	1096199	461716		0-50	
Shovel Test	1815	negative	1096290	461712		0-50	
Shovel Test	1816	negative	1096387	461711		0-50	
Shovel Test	1817	negative	1096501	461695		0-50	
Shovel Test	1818	negative	1096590	461697		0-50	
Shovel Test	1819	negative	1096693	461696		0-50	
Shovel Test	1820	negative	1096792	461704		0-50	
Shovel Test	1821	negative	1096884	461706		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1823	negative	1096405	462789	40MD276	0-50	
Shovel Test	1824	negative	1096303	462793	40MD276	0-50	
Shovel Test	1825	negative	1096104	462796		0-50	
Shovel Test	1827	negative	1095911	462598		0-50	
Shovel Test	1829	negative	1096008	462696		0-50	
Shovel Test	1831	negative	1096305	462717	40MD276	0-55	
Shovel Test	1832	negative	1096305	462754	40MD276	0-50	
Shovel Test	1833	positive	1096333	462684	40MD276	0-50	
Shovel Test	1834	negative	1096367	462682	40MD276	0-53	
Shovel Test	1835	negative	1096306	462654	40MD276	0-50	
Shovel Test	1836	negative	1096303	462620	40MD276	0-50	
Shovel Test	1837	negative	1096113	462723		0-50	
Shovel Test	1838	negative	1096110	462755		0-50	
Shovel Test	1839	negative	1096079	462691		0-56	
Shovel Test	1840	negative	1096046	462691		0-54	
Shovel Test	1841	negative	1096001	462627		0-54	
Shovel Test	1842	negative	1096025	462660		0-53	
Shovel Test	1843	negative	1095969	462591		0-50	
Shovel Test	1844	negative	1095941	462592		0-51	
Shovel Test	1845	negative	1096002	462558		0-50	
Shovel Test	1846	negative	1096008	462524		0-50	
Shovel Test	1847	negative	1096112	463210	40MD275	0-50	
Shovel Test	1848	negative	1096110	463251		0-50	
Shovel Test	1849	negative	1096077	463184	40MD275	0-55	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1850	negative	1096045	463186	NSCR 3	0-50	
Shovel Test	1851	negative	1096148	463185	40MD275	0-50	
Shovel Test	1852	negative	1096110	463119	NSCR 3	0-50	
Shovel Test	1853	negative	1096111	463155	40MD275	0-50	
Shovel Test	1854	negative	1096182	463185		0-57	
Shovel Test	1855	negative	1096150	463482		0-56	
Shovel Test	1856	negative	1096187	463481		0-54	
Shovel Test	1857	negative	1096113	463455		0-50	
Shovel Test	1858	negative	1096111	463415		0-50	
Shovel Test	1859	negative	1096077	463487		0-50	
Shovel Test	1860	negative	1096046	463485		0-57	
Shovel Test	1861	negative	1096110	463513		0-50	
Shovel Test	1863	negative	1096115	463580		0-50	
Shovel Test	1864	negative	1096116	463550		0-50	
Shovel Test	1865	negative	1096215	463578		0-50	
Shovel Test	1866	negative	1096412	463581		0-50	
Shovel Test	1867	negative	1096514	463579		0-50	
Shovel Test	1868	negative	1096611	463576		0-50	
Shovel Test	1869	negative	1096707	463575		0-50	
Shovel Test	1870	positive	1096807	463572	40MD279	0-50	
Shovel Test	1871	negative	1096905	463568	40MD279	0-50	
Shovel Test	1872	negative	1096903	463472	40MD279	0-50	
Shovel Test	1873	negative	1097006	463666		0-50	
Shovel Test	1874	positive	1094320	464582	40MD271	0-55	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1875	negative	1094288	464584	40MD271	0-50	
Shovel Test	1876	negative	1094352	464613	40MD271	0-50	
Shovel Test	1877	negative	1094352	464648	40MD271	0-50	
Shovel Test	1878	positive	1094356	464717	40MD271	0-50	
Shovel Test	1879	negative	1094357	464750	40MD271	0-50	
Shovel Test	1880	positive	1094378	464580	40MD271	0-50	
Shovel Test	1881	positive	1094416	464580	40MD271	0-50	
Shovel Test	1882	negative	1094489	464581	40MD271	0-50	
Shovel Test	1883	negative	1094533	464575		0-50	
Shovel Test	1884	negative	1094356	464519	40MD271	0-50	
Shovel Test	1885	positive	1094351	464550	40MD271	0-50	
Shovel Test	1886	positive	1094355	464444	40MD271	0-50	
Shovel Test	1887	positive	1094357	464416	40MD271	0-58	
Shovel Test	1888	positive	1094354	464361	40MD271	0-50	
Shovel Test	1889	positive	1096619	464325	40MD274	0-50	
Shovel Test	1890	negative	1096617	464292	40MD274	0-55	
Shovel Test	1891	positive	1096621	464394	40MD274	0-52	
Shovel Test	1892	positive	1096623	464428	40MD274	0-53	
Shovel Test	1893	positive	1096622	464479	40MD274	0-50	
Shovel Test	1894	positive	1096591	464363	40MD274	0-50	
Shovel Test	1895	positive	1096558	464366	40MD274	0-54	
Shovel Test	1896	positive	1096490	464364	40MD274	0-50	
Shovel Test	1897	positive	1096451	464363	40MD274	0-50	
Shovel Test	1898	positive	1096648	464363	40MD274	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1899	negative	1096686	464361	40MD274	0-50	
Shovel Test	1900	negative	1096748	464361	40MD274	0-50	
Shovel Test	1901	negative	1096785	464364		0-50	
Shovel Test	1902	negative	1096381	464363		0-57	
Shovel Test	1903	positive	1096158	464460	40MD270	0-50	
Shovel Test	1904	positive	1096197	464464	40MD270	0-50	
Shovel Test	1905	positive	1096261	464466	40MD270	0-50	
Shovel Test	1906	positive	1096297	464468	40MD270	0-50	
Shovel Test	1907	negative	1096093	464462	40MD270	0-50	
Shovel Test	1908	positive	1096062	464462	40MD270	0-50	
Shovel Test	1909	positive	1095994	464466	40MD270	0-50	
Shovel Test	1910	positive	1095966	464469	40MD270	0-50	
Shovel Test	1911	positive	1095901	464476	40MD270	0-50	
Shovel Test	1912	negative	1095865	464470	40MD270	0-50	
Shovel Test	1913	negative	1095798	464470	40MD270	0-50	
Shovel Test	1914	positive	1095769	464472	40MD270	0-50	
Shovel Test	1915	positive	1096035	464503	40MD270	0-50	
Shovel Test	1916	negative	1096025	464535	40MD270	0-50	
Shovel Test	1918	negative	1096032	464633	40MD270	0-50	
Shovel Test	1919	positive	1096026	464598	40MD270	0-50	
Shovel Test	1920	positive	1096027	464436	40MD270	0-50	
Shovel Test	1921	positive	1096027	464399	40MD270	0-50	
Shovel Test	1922	negative	1096023	464336	40MD270	0-50	
Shovel Test	1923	positive	1096027	464297	40MD270	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1924	negative	1096362	464466		0-50	
Shovel Test	1926	positive	1095698	464474	40MD270	0-50	
Shovel Test	1927	positive	1095660	464475	40MD270	0-50	
Shovel Test	1928	negative	1095591	464475	20MD270	0-50	
Shovel Test	1930	positive	1097008	463422	40MD279	0-50	
Shovel Test	1931	negative	1097007	463397	40MD279	0-50	
Shovel Test	1932	negative	1097009	463509	40MD279	0-50	
Shovel Test	1933	negative	1097010	463539	40MD279	0-50	
Shovel Test	1934	positive	1097038	463572	40MD279	0-50	
Shovel Test	1935	negative	1097072	463571	40MD279	0-50	
Shovel Test	1936	negative	1097005	463606		0-50	
Shovel Test	1937	negative	1097005	463637		0-50	
Shovel Test	1938	negative	1096970	463571	40MD279	0-50	
Shovel Test	1939	negative	1096933	463571	40MD279	0-50	
Shovel Test	1940	positive	1097133	463568	40MD279	0-50	
Shovel Test	1941	negative	1097166	463566	40MD279	0-50	
Shovel Test	1942	negative	1097225	463566		0-50	
Shovel Test	1943	negative	1097262	463569		0-50	
Shovel Test	1944	negative	1097322	463567		0-50	
Shovel Test	1945	negative	1097358	463569		0-50	
Shovel Test	1947	negative	1099163	463275		0-50	
Shovel Test	1948	negative	1099164	463314		0-50	
Shovel Test	1949	negative	1099196	463256		0-50	
Shovel Test	1950	negative	1099235	463256		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	1951	negative	1099162	463212		0-50	
Shovel Test	1952	negative	1099162	463179		0-50	
Shovel Test	1953	negative	1099134	463260		0-50	
Shovel Test	1954	negative	1099100	463257		0-50	
Shovel Test	1995	negative	1096726	465544		0-50	
Shovel Test	1996	negative	1096824	465539		0-50	
Shovel Test	1997	negative	1096923	465545		0-50	
Shovel Test	1998	negative	1097029	465537		0-53	
Shovel Test	1999	negative	1097118	465536		0-50	
Shovel Test	2000	negative	1095616	462989		0-50	
Shovel Test	2001	negative	1095517	462988		0-50	
Shovel Test	2002	positive	1095422	462994	Isolated Find 47	0-50	
Shovel Test	2003	negative	1095327	462896		0-50	
Shovel Test	2004	negative	1095417	462895		0-50	
Shovel Test	2005	negative	1095521	462882		0-50	
Shovel Test	2006	negative	1095624	462900		0-50	
Shovel Test	2007	negative	1095711	462894		0-50	
Shovel Test	2008	negative	1095817	462893		0-53	
Shovel Test	2009	negative	1095810	462798		0-50	
Shovel Test	2010	negative	1095718	462793		0-50	
Shovel Test	2011	negative	1095612	462802		0-50	
Shovel Test	2012	negative	1095517	462795		0-50	
Shovel Test	2013	negative	1095423	462795		0-50	
Shovel Test	2014	negative	1095317	462792		0-52	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
No Dig Point	2016	no dig - roadside ditch, paved road	1095218	462794			
Shovel Test	2017	negative	1095125	462694		0-50	
Shovel Test	2018	negative	1095221	462700		0-50	
Shovel Test	2019	negative	1095315	462702		0-50	
Shovel Test	2020	negative	1095425	462703		0-50	
Shovel Test	2021	negative	1095525	462696		0-50	
Shovel Test	2022	negative	1095602	462696		0-50	
Shovel Test	2023	negative	1095713	462695		0-50	
Shovel Test	2024	negative	1095803	462690		0-50	
Shovel Test	2025	negative	1095617	462602		0-50	
Shovel Test	2026	negative	1095525	462598		0-50	
Shovel Test	2027	negative	1095416	462604		0-50	
Shovel Test	2028	negative	1095322	462605		0-50	
Shovel Test	2029	negative	1095220	462603		0-50	
Shovel Test	2030	negative	1095127	462604		0-50	
Shovel Test	2031	negative	1095033	462607		0-50	
Shovel Test	2032	negative	1094923	462526		0-50	
Shovel Test	2033	negative	1095018	462506		0-50	
Shovel Test	2034	negative	1095115	462499		0-50	
Shovel Test	2035	negative	1095216	462523		0-50	
Shovel Test	2036	negative	1095324	462514		0-50	
Shovel Test	2037	negative	1095415	462498		0-50	
Shovel Test	2038	negative	1095517	462498		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2039	negative	1095610	462503		0-50	
Shovel Test	2040	negative	1095615	462404		0-50	
Shovel Test	2041	negative	1095509	462406		0-50	
Shovel Test	2042	negative	1095416	462405		0-50	
Shovel Test	2043	negative	1095320	462407		0-50	
Shovel Test	2044	negative	1095219	462410		0-50	
Shovel Test	2045	negative	1095128	462399		0-50	
Shovel Test	2046	negative	1095020	462410		0-50	
Shovel Test	2047	negative	1094921	462409		0-50	
Shovel Test	2048	negative	1094827	462407		0-50	
Shovel Test	2049	negative	1094821	462301		0-50	
Shovel Test	2050	negative	1094924	462309		0-50	
Shovel Test	2051	negative	1095351	462303		0-50	
Shovel Test	2052	negative	1095415	462310		0-50	
Shovel Test	2053	positive	1095316	462213	Isolated Find 48	0-50	
Shovel Test	2054	negative	1095415	462211		0-50	
No Dig Point	2056	no dig - pond	1095216	462204			
Shovel Test	2059	negative	1095519	462207		0-50	
Shovel Test	2060	negative	1095708	462107		0-50	
Shovel Test	2061	negative	1095604	462108		0-52	
Shovel Test	2062	negative	1095510	462106		0-50	
Shovel Test	2063	negative	1095406	462105		0-55	
Shovel Test	2064	negative	1095317	462111		0-50	
Shovel Test	2065	negative	1095709	462208		0-50	

			Easting	Northing	(cmbs)	(cmbs)
Shovel Test	2066	negative	1096519	464752	0-50	
Shovel Test	2067	negative	1096623	464745	0-50	
Shovel Test	2068	negative	1096430	464954	0-50	
Shovel Test	2069	negative	1096423	465347	0-50	
Shovel Test	2070	negative	1096527	465340	0-50	
Shovel Test	2071	negative	1096622	465337	0-50	
Shovel Test	2072	negative	1096727	465346	0-50	
Shovel Test	2073	negative	1096827	465344	0-50	
Shovel Test	2074	negative	1096923	465343	0-50	
Shovel Test	2075	negative	1097020	465335	0-50	
Shovel Test	2076	negative	1097128	465340	0-50	
Shovel Test	2077	negative	1097217	465337	0-50	
Shovel Test	2078	negative	1097318	465341	0-50	
Shovel Test	2079	negative	1097309	465253	0-50	
Shovel Test	2080	negative	1097217	465239	0-50	
Shovel Test	2081	negative	1097117	465241	0-50	
Shovel Test	2082	negative	1097017	465257	0-50	
Shovel Test	2083	negative	1097322	465437	0-50	
Shovel Test	2084	negative	1097218	465443	0-50	
Shovel Test	2085	negative	1097128	465442	0-50	
Shovel Test	2086	negative	1097023	465437	0-50	
Shovel Test	2087	negative	1096918	465451	0-50	
Shovel Test	2088	negative	1096829	465437	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2090	negative	1096628	465442		0-50	
Shovel Test	2091	negative	1096525	465440		0-50	
Shovel Test	2092	negative	1096428	465438		0-50	
Shovel Test	2093	negative	1096525	465544		0-50	
Shovel Test	2094	negative	1096633	465553		0-50	
Shovel Test	2096	negative	1098676	463265		0-50	
Shovel Test	2097	negative	1098762	463253		0-60	
Shovel Test	2098	negative	1098965	463256		0-50	
Shovel Test	2099	negative	1099062	463255		0-50	
Shovel Test	2100	negative	1099058	463156		0-50	
Shovel Test	2101	negative	1098972	463162		0-50	
Shovel Test	2102	negative	1098866	463157		0-50	
Shovel Test	2103	negative	1098771	463159		0-50	
Shovel Test	2104	negative	1098674	463162		0-50	
Shovel Test	2105	negative	1098678	463060		0-50	
Shovel Test	2106	negative	1098774	463059		0-50	
Shovel Test	2107	negative	1098867	463061		0-53	
Shovel Test	2108	negative	1098963	463057		0-53	
Shovel Test	2109	negative	1099066	463056		0-50	
Shovel Test	2110	negative	1099159	463052		0-50	
Shovel Test	2111	negative	1099255	463054		0-33	
Shovel Test	2112	negative	1099258	462957		0-35	
Shovel Test	2113	negative	1099163	462958		0-50	
Shovel Test	2114	negative	1099066	462952		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2115	negative	1098966	462953		0-50	
Shovel Test	2116	negative	1098865	462958		0-50	
Shovel Test	2117	negative	1098763	462963		0-50	
Shovel Test	2118	negative	1098667	462967		0-50	
Shovel Test	2119	negative	1098671	462865		0-50	
Shovel Test	2120	negative	1098769	462867		0-50	
Shovel Test	2121	negative	1098860	462867		0-50	
Shovel Test	2122	negative	1098965	462869		0-54	
Shovel Test	2123	negative	1099063	462864		0-50	
Shovel Test	2124	negative	1099164	462861		0-50	
Shovel Test	2125	negative	1099259	462858		0-50	
Shovel Test	2126	negative	1099157	462761		0-50	
Shovel Test	2127	negative	1099061	462763		0-50	
Shovel Test	2128	negative	1098962	462760		0-50	
Shovel Test	2129	negative	1098960	462666		0-50	
Shovel Test	2130	negative	1099058	462659		0-50	
Shovel Test	2131	negative	1099159	462666		0-50	
Shovel Test	2132	negative	1099159	462557		0-50	
Shovel Test	2133	negative	1099056	462566		0-50	
Shovel Test	2134	negative	1098961	462564		0-50	
Shovel Test	2135	negative	1099061	462468		0-50	
Shovel Test	2136	negative	1099157	462467		0-50	
Shovel Test	2137	negative	1099155	462368		0-50	
Shovel Test	2138	negative	1099055	462364		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2139	negative	1099157	462272		0-50	
Shovel Test	2140	negative	1099060	462268		0-50	
Shovel Test	2141	negative	1099155	462168		0-50	
Shovel Test	2142	negative	1098759	462459		0-50	
Shovel Test	2143	negative	1098673	462474		0-50	
Shovel Test	2144	negative	1098560	462485		0-28	
Shovel Test	2145	negative	1098568	462575		0-50	
No Dig Point	2146	no dig - roadside ditch	1098667	462672			
Shovel Test	2147	negative	1098768	462673		0-50	
Shovel Test	2148	negative	1098867	462763		0-50	
Shovel Test	2149	negative	1098666	462569		0-50	
Shovel Test	2150	negative	1098757	462766		0-50	
Shovel Test	2151	negative	1098671	462757		0-25	
Shovel Test	2152	positive	1099665	463437	Isolated Find 49	0-64	
Shovel Test	2153	negative	1099862	463634		0-50	
Shovel Test	2154	negative	1099771	463539		0-50	
Shovel Test	2155	negative	1094180	466555		0-50	
Shovel Test	2156	negative	1094079	466549		0-50	
Shovel Test	2157	negative	1094079	466650		0-50	
Shovel Test	2158	negative	1094180	466648		0-54	
Shovel Test	2159	negative	1094183	466750		0-50	
Shovel Test	2160	negative	1094086	466750		0-50	
Shovel Test	2161	negative	1094084	466848		0-50	
Shovel Test	2162	negative	1094178	466852		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2163	negative	1094289	466947		0-50	
Shovel Test	2164	negative	1094187	466941		0-50	
Shovel Test	2165	negative	1094082	466943		0-35	
Shovel Test	2166	negative	1094189	467042		0-50	
Shovel Test	2167	negative	1094287	467038		0-50	
Shovel Test	2168	negative	1094288	467138		0-50	
Shovel Test	2169	negative	1094179	467154		0-50	
Shovel Test	2170	negative	1094189	467237		0-60	
Shovel Test	2171	negative	1094386	467240		0-50	
Shovel Test	2172	negative	1094384	467343		0-50	
Shovel Test	2173	negative	1094380	467447		0-50	
Shovel Test	2174	negative	1094387	467532		0-50	
Shovel Test	2175	negative	1094400	467628		0-50	
Shovel Test	2176	negative	1094483	467630		0-50	
Shovel Test	2177	negative	1094584	467826		0-50	
Shovel Test	2178	negative	1094590	467927		0-50	
Shovel Test	2179	negative	1094583	468022		0-50	
Shovel Test	2180	negative	1094584	468122		0-50	
Shovel Test	2181	negative	1094589	468222		0-50	
Shovel Test	2182	negative	1094594	468319		0-50	
Shovel Test	2183	negative	1094587	468413		0-50	
Shovel Test	2184	negative	1094697	468412		0-50	
Shovel Test	2185	negative	1094698	468509		0-50	
Shovel Test	2186	negative	1094687	468618		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2187	negative	1094700	468714		0-50	
Shovel Test	2188	negative	1094691	468802		0-50	
Shovel Test	2189	negative	1094693	468911		0-50	
Shovel Test	2190	negative	1094793	469096		0-50	
Shovel Test	2191	negative	1094790	469199		0-55	
Shovel Test	2192	negative	1094795	469315		0-50	
Shovel Test	2193	negative	1094797	469406		0-50	
Shovel Test	2194	negative	1094803	469490		0-50	
Shovel Test	2195	negative	1094801	469596		0-50	
Shovel Test	2196	negative	1094800	469695		0-50	
Shovel Test	2197	negative	1094911	469702		0-50	
Shovel Test	2198	negative	1094900	469803		0-50	
Shovel Test	2199	negative	1094906	469897		0-54	
Shovel Test	2200	negative	1095005	469888		0-50	
Shovel Test	2201	negative	1095101	469985		0-50	
Shovel Test	2202	negative	1094994	469996		0-50	
Shovel Test	2203	negative	1094910	469996		0-50	
Shovel Test	2204	negative	1094906	470092		0-50	
Shovel Test	2205	negative	1095011	470081		0-50	
Shovel Test	2206	negative	1095101	470082		0-50	
Shovel Test	2207	negative	1095202	470079		0-50	
Shovel Test	2208	negative	1095396	470181		0-50	
Shovel Test	2209	negative	1095299	470183		0-50	
Shovel Test	2210	negative	1095203	470191		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2211	negative	1095102	470192		0-50	
Shovel Test	2212	negative	1095005	470186		0-53	
Shovel Test	2213	negative	1094906	470188		0-50	
Shovel Test	2214	negative	1094805	470189		0-50	
Shovel Test	2215	negative	1094805	470286		0-50	
Shovel Test	2216	negative	1094906	470279		0-50	
Shovel Test	2217	negative	1095005	470284		0-50	
Shovel Test	2218	negative	1095108	470282		0-50	
Shovel Test	2219	negative	1095202	470285		0-50	
Shovel Test	2220	negative	1095299	470277		0-50	
Shovel Test	2221	negative	1095400	470288		0-50	
Shovel Test	2222	negative	1095501	470280		0-50	
Shovel Test	2223	negative	1095591	470276		0-50	
Shovel Test	2224	negative	1095683	470282		0-50	
Shovel Test	2225	negative	1095589	470179		0-50	
Shovel Test	2226	negative	1095694	470092		0-50	
Shovel Test	2227	negative	1095792	470084		0-50	
Shovel Test	2228	negative	1095793	469981		0-50	
Shovel Test	2229	negative	1095781	469881		0-50	
Shovel Test	2230	negative	1095788	469783		0-50	
Shovel Test	2231	negative	1095788	469689		0-50	
Shovel Test	2232	negative	1095786	469586		0-50	
Shovel Test	2233	negative	1095887	469488		0-50	
Shovel Test	2234	negative	1095782	469490		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2235	negative	1095687	469490		0-50	
Shovel Test	2236	negative	1095687	469394		0-50	
Shovel Test	2237	negative	1095789	469380		0-50	
Shovel Test	2238	negative	1095876	469375		0-50	
Shovel Test	2239	negative	1095986	469291		0-50	
Shovel Test	2240	negative	1095879	469299		0-50	
Shovel Test	2241	negative	1095677	469189		0-50	
Shovel Test	2242	negative	1095783	469191		0-50	
Shovel Test	2243	negative	1095880	469187		0-54	
Shovel Test	2244	negative	1095972	469190		0-50	
Shovel Test	2245	negative	1095974	469087		0-50	
Shovel Test	2246	negative	1095875	469098		0-50	
Shovel Test	2247	negative	1095777	469088		0-50	
Shovel Test	2248	negative	1095681	469095		0-50	
Shovel Test	2249	negative	1095582	469096		0-50	
Shovel Test	2250	negative	1095487	469095		0-50	
Shovel Test	2251	negative	1095385	468998		0-50	
Shovel Test	2252	negative	1095483	468995		0-50	
Shovel Test	2253	negative	1095583	468999		0-50	
Shovel Test	2254	negative	1095682	468996		0-50	
Shovel Test	2255	negative	1095872	468989		0-50	
Shovel Test	2256	negative	1095974	468992		0-50	
Shovel Test	2257	negative	1095978	468897		0-50	
Shovel Test	2258	negative	1095785	469287		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2259	negative	1095683	469296		0-50	
Shovel Test	2260	negative	1095581	469297		0-50	
Shovel Test	2261	negative	1095585	469193		0-50	
Shovel Test	2262	negative	1095484	469197		0-50	
Shovel Test	2263	negative	1095668	467917		0-50	
Shovel Test	2264	negative	1095762	467911		0-50	
Shovel Test	2265	negative	1095862	467910		0-50	
Shovel Test	2266	negative	1095871	468011		0-50	
Shovel Test	2267	negative	1095964	468103		0-50	
Shovel Test	2268	negative	1095963	468010		0-50	
Shovel Test	2269	negative	1095962	467908		0-50	
Shovel Test	2270	negative	1095965	467813		0-50	
Shovel Test	2271	negative	1096072	467813		0-50	
Shovel Test	2272	negative	1096155	467812		0-50	
Shovel Test	2273	negative	1096061	467718		0-50	
Shovel Test	2274	negative	1096057	467622		0-50	
Shovel Test	2275	negative	1096024	467537		0-50	
Shovel Test	2276	negative	1095955	467518		0-50	
Shovel Test	2277	negative	1095969	467419		0-50	
Shovel Test	2278	negative	1095862	467424		0-50	
Shovel Test	2279	negative	1094460	465660		0-54	
Shovel Test	2280	negative	1094562	465666		0-50	
Shovel Test	2281	negative	1094662	465662		0-50	
Shovel Test	2282	negative	1094759	465660		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2283	negative	1094865	465661		0-50	
Shovel Test	2284	negative	1094964	465658		0-50	
Shovel Test	2285	negative	1094957	465752		0-50	
Shovel Test	2286	negative	1094861	465761		0-50	
Shovel Test	2287	negative	1094761	465757		0-50	
Shovel Test	2288	negative	1094662	465758		0-50	
Shovel Test	2289	negative	1094568	465759		0-50	
Shovel Test	2290	negative	1094465	465762		0-50	
Shovel Test	2291	negative	1094563	465858		0-50	
Shovel Test	2292	negative	1094658	465857		0-50	
Shovel Test	2293	negative	1094762	465858		0-50	
Shovel Test	2294	negative	1094856	465858		0-50	
Shovel Test	2295	negative	1094273	465861		0-50	
Shovel Test	2296	negative	1094969	465858		0-50	
Shovel Test	2297	negative	1095059	465854		0-50	
Shovel Test	2298	negative	1095056	465952		0-50	
Shovel Test	2299	negative	1094959	465957		0-56	
Shovel Test	2300	negative	1094867	465955		0-50	
Shovel Test	2301	negative	1094766	465957		0-50	
Shovel Test	2302	negative	1095059	466052		0-50	
Shovel Test	2303	negative	1095159	466144		0-50	
Shovel Test	2304	negative	1095259	466244		0-50	
Shovel Test	2305	negative	1095355	466344		0-50	
Shovel Test	2306	negative	1095356	466439		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2307	negative	1095452	466635		0-50	
Shovel Test	2308	negative	1095559	466830		0-50	
Shovel Test	2309	negative	1095563	466933		0-50	
Shovel Test	2310	negative	1095564	467034		0-50	
Shovel Test	2311	negative	1095658	467029		0-50	
Shovel Test	2312	negative	1095665	467121		0-50	
Shovel Test	2313	negative	1095761	467031		0-50	
Shovel Test	2314	negative	1095763	467121		0-52	
Shovel Test	2315	negative	1095755	467222		0-50	
Shovel Test	2316	negative	1095762	467326		0-50	
Shovel Test	2317	negative	1096537	466830		0-50	
Shovel Test	2318	negative	1096544	466923		0-50	
Shovel Test	2319	negative	1096546	467016		0-50	
Shovel Test	2320	negative	1096548	467121		0-50	
Shovel Test	2321	negative	1096548	467211		0-50	
Shovel Test	2322	negative	1096548	467315		0-50	
Shovel Test	2323	negative	1096549	467516		0-50	
Shovel Test	2324	negative	1096554	467611		0-50	
Shovel Test	2325	negative	1096552	467710		0-50	
Shovel Test	2326	negative	1096552	467808		0-50	
Shovel Test	2327	negative	1096457	467807		0-50	
Shovel Test	2328	negative	1096357	467814		0-50	
Shovel Test	2329	negative	1096249	467815		0-50	
Shovel Test	2330	negative	1096156	467705		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2331	negative	1096253	467711		0-50	
Shovel Test	2332	negative	1096160	467617		0-50	
Shovel Test	2333	negative	1096247	467616		0-56	
Shovel Test	2334	negative	1096353	467610		0-50	
Shovel Test	2335	negative	1096452	467617		0-50	
No Dig Point	2336	no dig - pond	1096457	467514			
Shovel Test	2337	negative	1096360	467515		0-50	
Shovel Test	2338	negative	1096256	467516		0-50	
Shovel Test	2339	negative	1096157	467519		0-50	
Shovel Test	2340	negative	1096087	467408		0-50	
Shovel Test	2341	negative	1096054	467317		0-50	
Shovel Test	2342	negative	1095960	467313		0-50	
Shovel Test	2343	negative	1095952	467226		0-50	
Shovel Test	2344	negative	1095974	467124		0-50	
Shovel Test	2345	negative	1095854	467122		0-50	
Shovel Test	2346	negative	1095855	467224		0-50	
Shovel Test	2347	negative	1095854	467027		0-50	
Shovel Test	2348	negative	1095859	466934		0-50	
Shovel Test	2349	negative	1095761	466832		0-50	
Shovel Test	2350	negative	1095756	466737		0-50	
Shovel Test	2351	negative	1095657	466635		0-50	
Shovel Test	2352	negative	1095661	466537		0-30	
Shovel Test	2353	negative	1095559	466545		0-50	
Shovel Test	2354	negative	1095553	466453		0-52	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2355	negative	1095453	466437		0-50	
Shovel Test	2356	negative	1095461	466337		0-50	
Shovel Test	2357	negative	1095552	466345		0-50	
Shovel Test	2358	negative	1095657	466342		0-50	
Shovel Test	2359	negative	1095651	466239		0-50	
Shovel Test	2360	negative	1095453	466249		0-50	
Shovel Test	2361	negative	1095356	466243		0-50	
Shovel Test	2362	negative	1095353	466148		0-50	
Shovel Test	2363	negative	1095459	466149		0-50	
Shovel Test	2364	negative	1095358	466056		0-50	
Shovel Test	2365	negative	1095263	466050		0-50	
Shovel Test	2366	negative	1095188	466044		0-50	
No Dig Point	2367	no dig - pond	1095019	462308			
No Dig Point	2368	no dig - pond	1095120	462301			
Shovel Test	2370	negative	1095168	465945		0-50	
Shovel Test	2371	negative	1095260	465946		0-50	
Shovel Test	2372	negative	1095156	465855		0-50	
Shovel Test	2373	negative	1095151	465752		0-50	
Shovel Test	2374	negative	1095153	465654		0-50	
Shovel Test	2375	negative	1095077	465657		0-50	
Shovel Test	2376	negative	1095056	465558		0-50	
Shovel Test	2377	negative	1095150	465556		0-50	
Shovel Test	2378	negative	1095154	465464		0-50	
Shovel Test	2379	negative	1095054	465460		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2380	negative	1095051	465362		0-50	
Shovel Test	2381	negative	1095150	465363		0-50	
Shovel Test	2382	negative	1095148	465263		0-50	
Shovel Test	2385	negative	1096028	472260		0-50	
Shovel Test	2386	negative	1096028	472169		0-50	
Shovel Test	2387	negative	1096018	472064		0-50	
Shovel Test	2388	negative	1096012	471971		0-50	
Shovel Test	2389	negative	1096094	471945		0-50	
Shovel Test	2390	negative	1096094	471855		0-50	
Shovel Test	2391	negative	1096090	471757		0-50	
Shovel Test	2392	negative	1096087	471659		0-50	
Shovel Test	2393	negative	1096077	471557		0-50	
Shovel Test	2394	negative	1096078	471466		0-50	
Shovel Test	2395	negative	1096076	471369		0-50	
Shovel Test	2396	negative	1096068	471271		0-50	
Shovel Test	2397	negative	1096069	471170		0-50	
Shovel Test	2398	negative	1096060	471074		0-50	
Shovel Test	2399	negative	1096053	470975		0-50	
Shovel Test	2400	negative	1096047	470879		0-50	
Shovel Test	2401	negative	1096031	470783		0-50	
Shovel Test	2402	negative	1096064	470690		0-50	
Shovel Test	2403	positive	1096083	470599	Isolated Find 27	0-50	
Shovel Test	2404	negative	1096074	470499		0-50	
Shovel Test	2405	negative	1096074	470400		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2406	negative	1096067	470306		0-50	
Shovel Test	2407	negative	1095981	470181		0-50	
Shovel Test	2408	negative	1096057	470204		0-50	
Shovel Test	2412	negative	1097203	465534		0-50	
Shovel Test	2515	negative	1094748	464287		0-37	
Shovel Test	2516	negative	1094646	464281		0-50	
Shovel Test	2517	negative	1094541	464290		0-50	
Shovel Test	2518	negative	1094454	464290		0-50	
Shovel Test	2519	negative	1094352	464285		0-50	
Shovel Test	2520	negative	1094249	464295		0-50	
Shovel Test	2521	negative	1094154	464294		0-50	
Shovel Test	2522	positive	1094054	464293	40MD277	0-59	
Shovel Test	2523	negative	1093954	464292		0-50	
Shovel Test	2524	negative	1093856	464295		0-50	
Shovel Test	2525	negative	1093758	464296		0-50	
Shovel Test	2526	positive	1093660	464295	40MD278	0-50	
Shovel Test	2527	negative	1093562	464297		0-50	
Shovel Test	2528	negative	1093465	464293		0-53	
Shovel Test	2529	negative	1093372	464297		0-24	
Shovel Test	2530	negative	1093262	464300		0-50	
Shovel Test	2531	negative	1093273	464197		0-50	
Shovel Test	2532	negative	1093365	464199		0-52	
Shovel Test	2533	negative	1093462	464199		0-50	
Shovel Test	2534	positive	1093562	464192	40MD278	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2535	positive	1093660	464195	40MD278	0-50	
Shovel Test	2536	negative	1093759	464194		0-50	
Shovel Test	2537	negative	1093860	464192		0-50	
Shovel Test	2538	negative	1093956	464190		0-50	
Shovel Test	2539	positive	1094059	464190	40MD277	0-50	
Shovel Test	2540	positive	1094157	464188	40MD277	0-50	
Shovel Test	2541	positive	1094258	464186	40MD277	0-50	
Shovel Test	2542	negative	1094350	464190		0-50	
Shovel Test	2543	negative	1094450	464189		0-50	
Shovel Test	2544	negative	1094550	464181		0-50	
Shovel Test	2545	negative	1094643	464191		0-50	
Shovel Test	2546	negative	1094739	464184		0-50	
Shovel Test	2547	negative	1094649	464090		0-50	
Shovel Test	2548	negative	1094548	464092		0-50	
Shovel Test	2549	negative	1094445	464091		0-50	
Shovel Test	2550	negative	1094350	464090		0-50	
Shovel Test	2551	negative	1094252	464093		0-50	
Shovel Test	2552	negative	1094159	464091		0-50	
Shovel Test	2553	negative	1094054	464092		0-50	
Shovel Test	2554	negative	1093957	464095		0-50	
Shovel Test	2555	negative	1093859	464095		0-50	
Shovel Test	2556	positive	1093764	464094	40MD278	0-50	
Shovel Test	2557	positive	1093660	464098	40MD278	0-50	
Shovel Test	2558	negative	1093561	464099		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2559	negative	1093463	464097		0-50	
Shovel Test	2560	negative	1093368	464095		0-50	
Shovel Test	2561	negative	1093265	464101		0-50	
Shovel Test	2562	positive	1093167	464101	Isolated Find 25	0-50	
Shovel Test	2563	negative	1093167	464000		0-50	
Shovel Test	2564	negative	1093265	464003		0-50	
Shovel Test	2565	negative	1093365	464003		0-50	
Shovel Test	2566	positive	1093463	464000	Isolated Find 50	0-50	
Shovel Test	2567	negative	1093558	464001		0-50	
Shovel Test	2568	negative	1093657	464000		0-50	
Shovel Test	2569	negative	1093761	463997		0-50	
Shovel Test	2570	negative	1093858	463997		0-50	
Shovel Test	2571	negative	1093948	463998		0-50	
Shovel Test	2572	negative	1094055	463995		0-50	
Shovel Test	2573	negative	1094151	463996		0-50	
Shovel Test	2574	negative	1094249	463993		0-50	
Shovel Test	2575	negative	1094344	463997		0-50	
Shovel Test	2576	negative	1094445	463991		0-50	
Shovel Test	2577	negative	1094547	463990		0-50	
Shovel Test	2578	negative	1094641	463979		0-50	
Shovel Test	2579	negative	1094639	463890		0-50	
Shovel Test	2580	negative	1094550	463903		0-50	
Shovel Test	2581	negative	1094439	463894		0-50	
Shovel Test	2582	negative	1094349	463892		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2583	negative	1094252	463898		0-50	
Shovel Test	2584	negative	1094157	463899		0-50	
Shovel Test	2585	negative	1094049	463893		0-50	
Shovel Test	2586	negative	1093950	463892		0-50	
Shovel Test	2587	negative	1093853	463893		0-50	
Shovel Test	2588	negative	1093756	463900		0-50	
Shovel Test	2589	negative	1093664	463901		0-50	
Shovel Test	2590	negative	1093557	463902		0-50	
Shovel Test	2591	positive	1093457	463896	Isolated Find 12	0-100	
Shovel Test	2592	negative	1093358	463899		0-50	
Shovel Test	2593	negative	1093265	463902		0-50	
Shovel Test	2594	negative	1093164	463903		0-50	
Shovel Test	2595	negative	1093069	463904		0-50	
Shovel Test	2596	negative	1093073	463802		0-50	
Shovel Test	2597	negative	1093170	463803		0-50	
Shovel Test	2598	negative	1093266	463802		0-50	
Shovel Test	2599	negative	1093359	463799		0-50	
Shovel Test	2600	negative	1093456	463803		0-50	
Shovel Test	2601	negative	1093550	463808		0-50	
Shovel Test	2602	negative	1093660	463801		0-50	
Shovel Test	2603	negative	1093755	463798		0-50	
Shovel Test	2604	negative	1093853	463802		0-50	
Shovel Test	2605	negative	1093948	463806		0-50	
Shovel Test	2606	negative	1094045	463793		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2607	negative	1094147	463793		0-50	
Shovel Test	2608	negative	1094239	463773		0-50	
Shovel Test	2609	negative	1094348	463801		0-50	
Shovel Test	2610	negative	1094438	463795		0-50	
Shovel Test	2611	negative	1094543	463789		0-50	
Shovel Test	2612	negative	1094535	463695		0-50	
Shovel Test	2613	negative	1094448	463694		0-50	
Shovel Test	2614	negative	1094347	463695		0-50	
Shovel Test	2615	negative	1094244	463696		0-50	
Shovel Test	2616	negative	1094149	463697		0-50	
Shovel Test	2617	negative	1094050	463701		0-50	
Shovel Test	2618	negative	1093944	463704		0-50	
Shovel Test	2619	negative	1093860	463706		0-50	
Shovel Test	2620	negative	1093754	463709		0-50	
Shovel Test	2621	negative	1093663	463698		0-50	
Shovel Test	2622	negative	1093556	463707		0-50	
Shovel Test	2623	negative	1093459	463703		0-50	
Shovel Test	2624	negative	1093361	463705		0-50	
Shovel Test	2625	negative	1093262	463711		0-50	
Shovel Test	2626	positive	1093162	463708	NSCR 4	0-50	
Shovel Test	2627	positive	1093062	463705	NSCR 4	0-50	
Shovel Test	2628	negative	1092963	463709		0-50	
Shovel Test	2629	negative	1092969	463613		0-50	
Shovel Test	2630	negative	1093061	463608		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2631	negative	1093157	463609		0-50	
Shovel Test	2632	positive	1093257	463607	NSCR 4	0-50	
Shovel Test	2633	negative	1093362	463610		0-50	
Shovel Test	2634	negative	1093459	463607		0-50	
Shovel Test	2635	negative	1093558	463607		0-50	
Shovel Test	2636	negative	1093655	463611		0-50	
Shovel Test	2637	negative	1093751	463600		0-50	
Shovel Test	2638	negative	1093850	463604		0-50	
Shovel Test	2639	negative	1093950	463604		0-50	
Shovel Test	2640	negative	1094048	463598		0-50	
Shovel Test	2641	negative	1094150	463598		0-50	
Shovel Test	2642	negative	1094242	463600		0-50	
Shovel Test	2643	negative	1094346	463601		0-50	
Shovel Test	2644	negative	1094441	463602		0-50	
Shovel Test	2645	negative	1094540	463596		0-50	
Shovel Test	2646	negative	1094540	463500		0-50	
Shovel Test	2647	negative	1094442	463495		0-50	
Shovel Test	2648	negative	1094339	463500		0-50	
Shovel Test	2649	negative	1094245	463505		0-50	
Shovel Test	2650	negative	1094142	463500		0-50	
Shovel Test	2651	negative	1094050	463502		0-50	
Shovel Test	2652	negative	1093947	463504		0-50	
Shovel Test	2653	negative	1093849	463511		0-50	
Shovel Test	2654	negative	1093763	463512		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2655	negative	1093656	463504		0-50	
Shovel Test	2656	negative	1093558	463508		0-50	
Shovel Test	2657	negative	1093457	463506		0-50	
Shovel Test	2658	negative	1093359	463507		0-50	
Shovel Test	2659	negative	1093266	463510		0-50	
Shovel Test	2660	negative	1093165	463511		0-50	
Shovel Test	2661	negative	1093064	463506		0-50	
Shovel Test	2662	negative	1092964	463516		0-50	
Shovel Test	2663	negative	1092866	463513		0-50	
Shovel Test	2664	negative	1092768	463517		0-50	
Shovel Test	2665	negative	1092658	463491		0-50	
Shovel Test	2666	negative	1092673	463419		0-50	
Shovel Test	2667	negative	1092766	463414		0-50	
Shovel Test	2668	negative	1092875	463417		0-50	
Shovel Test	2669	negative	1092963	463416		0-50	
Shovel Test	2670	negative	1093059	463413		0-50	
Shovel Test	2671	negative	1093162	463413		0-50	
Shovel Test	2672	negative	1093264	463415		0-50	
Shovel Test	2673	negative	1093365	463415		0-50	
Shovel Test	2674	negative	1093458	463412		0-50	
Shovel Test	2675	negative	1093557	463410		0-50	
Shovel Test	2676	negative	1093650	463407		0-50	
Shovel Test	2677	negative	1093751	463405		0-50	
Shovel Test	2678	negative	1093854	463407		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2679	negative	1093949	463402		0-50	
Shovel Test	2680	negative	1094046	463404		0-50	
Shovel Test	2681	negative	1094149	463400		0-50	
Shovel Test	2682	negative	1094243	463403		0-50	
Shovel Test	2683	negative	1094339	463401		0-50	
Shovel Test	2684	negative	1094443	463401		0-50	
Shovel Test	2685	negative	1094502	463399		0-50	
Shovel Test	2686	negative	1094439	463303		0-50	
Shovel Test	2687	negative	1094486	463305		0-50	
Shovel Test	2688	negative	1094343	463299		0-50	
Shovel Test	2689	negative	1094247	463302		0-50	
Shovel Test	2690	negative	1094143	463304		0-50	
Shovel Test	2691	negative	1094047	463303		0-50	
Shovel Test	2692	negative	1093951	463307		0-50	
Shovel Test	2693	negative	1093849	463306		0-50	
Shovel Test	2694	negative	1093753	463308		0-50	
Shovel Test	2695	negative	1093650	463311		0-50	
Shovel Test	2696	negative	1093551	463312		0-50	
Shovel Test	2697	negative	1093455	463314		0-50	
Shovel Test	2698	negative	1093359	463313		0-50	
Shovel Test	2699	negative	1093260	463316		0-50	
Shovel Test	2701	negative	1093157	463309		0-50	
Shovel Test	2702	negative	1093064	463318		0-50	
Shovel Test	2703	negative	1092959	463314		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2704	negative	1092863	463317		0-50	
Shovel Test	2705	negative	1092757	463316		0-50	
Shovel Test	2706	negative	1092673	463323		0-50	
Shovel Test	2707	negative	1092670	463225		0-50	
Shovel Test	2708	negative	1092767	463216		0-50	
Shovel Test	2709	negative	1092862	463215		0-50	
Shovel Test	2710	negative	1092962	463223		0-50	
Shovel Test	2711	negative	1093067	463218		0-50	
Shovel Test	2712	negative	1093159	463217		0-50	
Shovel Test	2713	negative	1093253	463213		0-50	
Shovel Test	2714	negative	1093351	463212		0-50	
Shovel Test	2715	negative	1093447	463209		0-50	
Shovel Test	2716	negative	1093557	463214		0-50	
Shovel Test	2717	negative	1093656	463210		0-50	
Shovel Test	2718	negative	1093754	463210		0-50	
Shovel Test	2719	negative	1093847	463212		0-50	
Shovel Test	2720	negative	1093950	463205		0-50	
Shovel Test	2721	negative	1094047	463204		0-50	
Shovel Test	2722	negative	1094141	463209		0-50	
Shovel Test	2723	negative	1094239	463208		0-50	
Shovel Test	2724	negative	1094340	463207		0-50	
Shovel Test	2725	negative	1094438	463199		0-50	
Shovel Test	2726	negative	1094432	463103		0-50	
Shovel Test	2727	negative	1094341	463100		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2728	negative	1094246	463106		0-50	
Shovel Test	2729	negative	1094149	463106		0-50	
Shovel Test	2730	negative	1094044	463106		0-50	
Shovel Test	2731	negative	1093943	463111		0-50	
Shovel Test	2732	negative	1093849	463114		0-25	
Shovel Test	2733	negative	1093754	463113		0-50	
Shovel Test	2734	negative	1093655	463117		0-50	
Shovel Test	2735	negative	1093553	463119		0-50	
Shovel Test	2736	negative	1093460	463115		0-50	
Shovel Test	2737	negative	1093352	463120		0-50	
Shovel Test	2738	negative	1093258	463119		0-50	
Shovel Test	2739	negative	1093155	463118		0-50	
Shovel Test	2740	negative	1093063	463121		0-50	
Shovel Test	2741	negative	1092963	463113		0-27	
Shovel Test	2742	negative	1092864	463119		0-50	
Shovel Test	2743	negative	1092767	463120		0-50	
Shovel Test	2744	negative	1092664	463125		0-50	
Shovel Test	2745	negative	1092666	463027		0-38	
Shovel Test	2746	negative	1092762	463025		0-50	
Shovel Test	2747	negative	1092856	463023		0-50	
Shovel Test	2748	negative	1092957	463024		0-50	
Shovel Test	2749	negative	1093065	463018		0-50	
Shovel Test	2750	negative	1093155	463021		0-50	
Shovel Test	2751	negative	1093255	463021		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2752	negative	1093353	463025		0-50	
Shovel Test	2753	negative	1093454	463016		0-50	
Shovel Test	2754	negative	1093546	463013		0-50	
Shovel Test	2755	negative	1093646	463016		0-50	
Shovel Test	2756	negative	1093746	463012		0-50	
Shovel Test	2757	negative	1093847	463016		0-50	
Shovel Test	2758	negative	1093946	463015		0-50	
Shovel Test	2759	negative	1094048	463008		0-50	
Shovel Test	2760	negative	1094143	463015		0-50	
Shovel Test	2761	negative	1094240	463006		0-50	
Shovel Test	2762	negative	1094331	463004		0-50	
Shovel Test	2763	negative	1094400	463003		0-50	
Shovel Test	2764	negative	1094384	462909		0-50	
Shovel Test	2765	negative	1094336	462909		0-50	
Shovel Test	2766	negative	1094238	462909		0-50	
Shovel Test	2767	negative	1094145	462912		0-50	
Shovel Test	2768	negative	1094044	462907		0-50	
Shovel Test	2769	negative	1093945	462908		0-50	
Shovel Test	2770	negative	1093845	462915		0-50	
Shovel Test	2771	negative	1093746	462913		0-50	
Shovel Test	2772	negative	1093651	462915		0-50	
Shovel Test	2773	negative	1093549	462918		0-50	
Shovel Test	2774	negative	1093452	462916		0-50	
Shovel Test	2775	negative	1093350	462919		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2776	negative	1093254	462925		0-50	
Shovel Test	2777	negative	1093158	462922		0-50	
Shovel Test	2778	negative	1093058	462927		0-50	
Shovel Test	2779	negative	1092962	462925		0-50	
Shovel Test	2780	negative	1092858	462919		0-50	
Shovel Test	2781	negative	1092761	462927		0-50	
Shovel Test	2782	negative	1092666	462925		0-50	
Shovel Test	2783	negative	1092666	462822		0-50	
Shovel Test	2784	negative	1092760	462822		0-34	
Shovel Test	2785	negative	1092863	462826		0-50	
Shovel Test	2786	negative	1092961	462820		0-50	
Shovel Test	2787	negative	1093061	462825		0-50	
Shovel Test	2788	negative	1093155	462822		0-50	
Shovel Test	2789	negative	1093245	462821		0-50	
Shovel Test	2790	negative	1093347	462819		0-50	
Shovel Test	2791	negative	1093442	462821		0-50	
Shovel Test	2792	negative	1093551	462823		0-50	
Shovel Test	2793	negative	1093640	462813		0-50	
Shovel Test	2794	negative	1093745	462815		0-50	
Shovel Test	2795	negative	1093841	462816		0-50	
Shovel Test	2796	negative	1093941	462817		0-50	
Shovel Test	2797	negative	1094041	462806		0-50	
Shovel Test	2798	negative	1094140	462811		0-50	
Shovel Test	2799	negative	1094237	462817		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2800	negative	1094337	462811		0-50	
Shovel Test	2801	negative	1094337	462711		0-50	
Shovel Test	2802	negative	1094237	462712		0-50	
Shovel Test	2803	negative	1094138	462717		0-50	
Shovel Test	2804	negative	1094041	462713		0-50	
Shovel Test	2805	negative	1093944	462717		0-50	
Shovel Test	2806	negative	1093842	462719		0-50	
Shovel Test	2807	negative	1093744	462722		0-50	
Shovel Test	2808	negative	1093646	462717		0-50	
Shovel Test	2809	negative	1093538	462716		0-50	
Shovel Test	2810	negative	1093447	462716		0-50	
Shovel Test	2811	negative	1093352	462723		0-50	
Shovel Test	2812	negative	1093254	462718		0-50	
Shovel Test	2813	positive	1093145	462728	Isolated Find 33	0-26	
Shovel Test	2814	negative	1093055	462727		0-50	
Shovel Test	2815	negative	1092951	462727		0-50	
Shovel Test	2816	negative	1092856	462725		0-50	
Shovel Test	2817	negative	1092765	462732		0-50	
Shovel Test	2818	negative	1092661	462730		0-50	
Shovel Test	2819	negative	1092660	462626		0-50	
Shovel Test	2820	negative	1092758	462628		0-50	
Shovel Test	2821	negative	1092861	462627		0-41	
Shovel Test	2822	negative	1092963	462621		0-50	
Shovel Test	2823	negative	1093058	462626		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2824	negative	1093147	462622		0-50	
Shovel Test	2825	negative	1093250	462628		0-50	
Shovel Test	2826	negative	1093443	462626		0-50	
Shovel Test	2827	negative	1093555	462616		0-50	
Shovel Test	2828	negative	1093651	462613		0-50	
Shovel Test	2829	negative	1093740	462618		0-50	
Shovel Test	2830	negative	1093840	462617		0-50	
Shovel Test	2831	negative	1093933	462616		0-50	
Shovel Test	2832	negative	1094036	462612		0-50	
Shovel Test	2833	negative	1094135	462616		0-50	
Shovel Test	2834	negative	1094232	462614		0-50	
Shovel Test	2835	negative	1094338	462612		0-50	
Shovel Test	2836	negative	1094342	462515		0-50	
Shovel Test	2837	negative	1094232	462519		0-50	
Shovel Test	2838	negative	1094133	462514		0-50	
Shovel Test	2839	negative	1094032	462518		0-50	
Shovel Test	2840	negative	1093940	462521		0-50	
Shovel Test	2841	negative	1093838	462526		0-50	
Shovel Test	2842	negative	1093740	462516		0-50	
Shovel Test	2843	negative	1093638	462527		0-50	
Shovel Test	2844	negative	1093552	462526		0-30	
Shovel Test	2845	negative	1093445	462525		0-50	
Shovel Test	2846	negative	1093346	462515		0-50	
Shovel Test	2847	negative	1093251	462528		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2848	negative	1093149	462526		0-50	
Shovel Test	2849	negative	1093059	462518		0-50	
Shovel Test	2850	negative	1092958	462529		0-50	
Shovel Test	2851	negative	1092853	462533		0-50	
Shovel Test	2852	negative	1092759	462533		0-50	
Shovel Test	2853	negative	1092662	462534		0-50	
Shovel Test	2854	negative	1092655	462470		0-50	
Shovel Test	2855	negative	1092758	462464		0-50	
Shovel Test	2856	negative	1092848	462456		0-50	
Shovel Test	2857	negative	1092949	462447		0-50	
Shovel Test	2858	negative	1093053	462441		0-50	
Shovel Test	2859	negative	1093156	462434		0-50	
Shovel Test	2860	negative	1093234	462430		0-50	
Shovel Test	2861	negative	1093344	462434		0-50	
Shovel Test	2862	negative	1093459	462426		0-50	
Shovel Test	2863	negative	1093549	462429		0-50	
Shovel Test	2864	negative	1093652	462424		0-50	
Shovel Test	2865	negative	1093742	462423		0-50	
Shovel Test	2866	negative	1093839	462432		0-50	
Shovel Test	2867	negative	1093949	462419		0-50	
Shovel Test	2868	negative	1094044	462410		0-50	
Shovel Test	2869	negative	1094125	462429		0-50	
Shovel Test	2870	negative	1094235	462421		0-50	
Shovel Test	2871	negative	1094328	462421		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	2872	positive	1094328	462361	BLH001	0-50	
Shovel Test	2873	positive	1094235	462367	BLH001	0-50	
Shovel Test	2874	negative	1094127	462379	BLH001	0-50	
Shovel Test	2875	positive	1094045	462367	BLH001	0-50	
Shovel Test	2876	negative	1092557	462479		0-50	
Shovel Test	2877	negative	1092561	462533		0-50	
Shovel Test	2878	negative	1092563	462632		0-50	
Shovel Test	2879	negative	1092571	462732		0-50	
Shovel Test	2880	negative	1092569	462835		0-50	
Shovel Test	2881	negative	1092574	462923		0-57	
Shovel Test	2882	negative	1092558	463028		0-50	
Shovel Test	2883	negative	1092575	463130		0-50	
Shovel Test	2884	negative	1092573	463224		0-33	
Shovel Test	2885	negative	1092565	463321		0-30	
Shovel Test	2886	negative	1092563	463418		0-50	
Shovel Test	2887	negative	1092525	463458		0-50	
Shovel Test	2888	negative	1092475	463420		0-50	
Shovel Test	2889	negative	1092471	463321		0-50	
Shovel Test	2890	negative	1092467	463230		0-50	
Shovel Test	2891	negative	1092471	463125		0-50	
Shovel Test	2892	negative	1092461	463032		0-50	
Shovel Test	2893	negative	1092464	462929		0-50	
Shovel Test	3000	negative	1096155	467415		0-33	
Shovel Test	3001	negative	1096260	467393		0-29	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3002	negative	1096360	467391		0-50	
Shovel Test	3003	negative	1096456	467388		0-50	
Shovel Test	3004	positive	1096510	467386	Isolated Find 14	0-50	
Shovel Test	3005	negative	1096453	467314		0-50	
Shovel Test	3006	negative	1096350	467314		0-50	
Shovel Test	3007	negative	1096253	467316		0-50	
Shovel Test	3008	negative	1096155	467317		0-50	
Shovel Test	3009	negative	1096059	467219		0-50	
Shovel Test	3010	negative	1096154	467221		0-50	
Shovel Test	3011	negative	1096249	467216		0-50	
Shovel Test	3012	negative	1096348	467213		0-46	
Shovel Test	3013	negative	1096452	467218		0-50	
Shovel Test	3014	negative	1096447	467118		0-22	
Shovel Test	3015	negative	1096355	467123		0-41	
Shovel Test	3016	negative	1096253	467118		0-50	
Shovel Test	3017	negative	1096156	467121		0-50	
Shovel Test	3018	negative	1096053	467122		0-36	
Shovel Test	3019	negative	1095982	467023		0-44	
Shovel Test	3020	negative	1096053	467022		0-50	
Shovel Test	3021	negative	1096151	467023		0-50	
Shovel Test	3022	negative	1096251	467022		0-50	
Shovel Test	3023	negative	1096349	467021		0-37	
Shovel Test	3024	negative	1096449	467019		0-45	
Shovel Test	3025	negative	1096446	466923		0-30	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3026	negative	1096348	466921		0-33	
Shovel Test	3027	negative	1096246	466929		0-26	
Shovel Test	3028	negative	1096151	466926		0-46	
Shovel Test	3029	negative	1096051	466926		0-36	
Shovel Test	3030	negative	1095949	466932		0-28	
Shovel Test	3031	negative	1095888	466828		0-22	
Shovel Test	3032	negative	1095956	466830		0-50	
Shovel Test	3033	negative	1096051	466832		0-40	
Shovel Test	3034	negative	1096152	466825		0-50	
Shovel Test	3035	negative	1096245	466826		0-37	
Shovel Test	3036	negative	1096349	466824		0-28	
Shovel Test	3037	negative	1096441	466823		0-27	
Shovel Test	3038	negative	1096444	466724		0-50	
Shovel Test	3039	negative	1096347	466724		0-50	
Shovel Test	3040	negative	1096243	466730		0-35	
Shovel Test	3041	negative	1096152	466731		0-31	
Shovel Test	3042	negative	1096049	466728		0-50	
Shovel Test	3043	negative	1095950	466726		0-38	
Shovel Test	3044	negative	1095856	466731		0-37	
Shovel Test	3045	negative	1095793	466627		0-50	
Shovel Test	3046	negative	1095851	466635		0-25	
Shovel Test	3047	negative	1095946	466631		0-50	
Shovel Test	3048	negative	1096049	466630		0-50	
Shovel Test	3049	negative	1096146	466631		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3050	negative	1096246	466624		0-50	
Shovel Test	3051	negative	1096345	466627		0-50	
Shovel Test	3052	negative	1096444	466624		0-50	
Shovel Test	3053	negative	1096344	466528		0-50	
Shovel Test	3054	negative	1096245	466528		0-50	
Shovel Test	3055	negative	1096146	466528		0-50	
Shovel Test	3056	negative	1096048	466534		0-50	
Shovel Test	3057	negative	1095949	466530		0-51	
Shovel Test	3058	negative	1095849	466535		0-37	
Shovel Test	3059	negative	1095897	466433		0-33	
Shovel Test	3060	negative	1095947	466432		0-51	
Shovel Test	3061	negative	1096040	466434		0-50	
Shovel Test	3062	negative	1096148	466433		0-50	
Shovel Test	3063	negative	1096240	466429		0-50	
Shovel Test	3064	negative	1096346	466434		0-50	
Shovel Test	3065	negative	1096448	466430		0-50	
Shovel Test	3066	negative	1096441	466329		0-36	
Shovel Test	3067	negative	1096344	466335		0-50	
Shovel Test	3068	negative	1096246	466331		0-41	
Shovel Test	3069	negative	1096145	466334		0-50	
Shovel Test	3070	negative	1096050	466331		0-51	
Shovel Test	3071	negative	1095947	466334		0-36	
Shovel Test	3072	negative	1095879	466331		0-39	
Shovel Test	3073	negative	1095874	466236		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3074	negative	1095948	466237		0-45	
Shovel Test	3075	negative	1096045	466235		0-34	
Shovel Test	3076	negative	1096147	466234		0-51	
Surface Collection Point	3077	positive	1096197	466527	Isolated Find 15		
Shovel Test	3078	negative	1096243	466236		0-37	
Shovel Test	3079	negative	1096344	466232		0-50	
Shovel Test	3080	negative	1096443	466233		0-44	
Shovel Test	3081	negative	1096435	466135		0-50	
Shovel Test	3082	negative	1096339	466130		0-37	
Shovel Test	3083	negative	1096245	466138		0-34	
Shovel Test	3084	negative	1096141	466139	40MD273	0-50	
Shovel Test	3085	negative	1096042	466138		0-50	
Shovel Test	3086	negative	1095945	466139		0-50	
Shovel Test	3087	negative	1095853	466130		0-29	
Shovel Test	3088	negative	1095847	466045		0-50	
Shovel Test	3089	negative	1095945	466043		0-33	
Shovel Test	3090	negative	1096047	466045		0-50	
Shovel Test	3091	negative	1096142	466037		0-50	
Shovel Test	3092	positive	1096239	466037	40MD273	0-50	
Shovel Test	3093	negative	1096345	466036		0-31	
Shovel Test	3094	negative	1096437	466031		0-37	
Shovel Test	3095	negative	1096435	465937		0-36	
Shovel Test	3096	negative	1096336	465938		0-42	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Size	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3701	Negative	1069253	4825452		0-35	
Shovel Test	3702	Negative	1069144	4825438		0-20	
Shovel Test	3703	Negative	1069048	4825419		0-30	
Shovel Test	3704	Negative	1069229	4825425		0-35	
Shovel Test	3705	Negative	1069254	4825429		0-20	
Shovel Test	3706	Negative	1069276	4825444		0-25	
Shovel Test	3707	Negative	1069282	4825458		0-30	
Shovel Test	3708	Negative	1069302	4825469		0-40	
Shovel Test	3709	Negative	1069326	4825479		0-30	
Shovel Test	3710	Negative	1069350	4825488		0-25	
Shovel Test	3711	Negative	1069375	4825494		0-30	
Shovel Test	3712	Negative	1069399	4825504		0-30	
Shovel Test	3713	Negative	1069423	4825514		0-30	
Shovel Test	3714	Negative	1069447	4825524		0-30	
Shovel Test	3715	Negative	1069471	4825534		0-30	
Shovel Test	3716	Negative	1069495	4825544		0-30	
Shovel Test	3717	Negative	1069519	4825554		0-30	
Shovel Test	3718	Negative	1069543	4825564		0-30	
Shovel Test	3719	Negative	1069567	4825574		0-30	
Shovel Test	3720	Negative	1069591	4825584		0-30	
Shovel Test	3721	Negative	1069615	4825594		0-30	
Shovel Test	3722	Negative	1069639	4825604		0-30	
Shovel Test	3723	Negative	1069663	4825614		0-30	
Shovel Test	3724	Negative	1069687	4825624		0-30	
Shovel Test	3725	Negative	1069711	4825634		0-30	
Shovel Test	3726	Negative	1069735	4825644		0-30	
Shovel Test	3727	Negative	1069759	4825654		0-30	
Shovel Test	3728	Negative	1069783	4825664		0-30	
Shovel Test	3729	Negative	1069807	4825674		0-30	
Shovel Test	3730	Negative	1069831	4825684		0-30	
Shovel Test	3731	Negative	1069855	4825694		0-30	
Shovel Test	3732	Negative	1069879	4825704		0-30	
Shovel Test	3733	Negative	1069903	4825714		0-30	
Shovel Test	3734	Negative	1069927	4825724		0-30	
Shovel Test	3735	Negative	1069951	4825734		0-30	
Shovel Test	3736	Negative	1069975	4825744		0-30	
Shovel Test	3737	Negative	1069999	4825754		0-30	
Shovel Test	3738	Negative	1070023	4825764		0-30	
Shovel Test	3739	Negative	1070047	4825774		0-30	
Shovel Test	3740	Negative	1070071	4825784		0-30	
Shovel Test	3741	Negative	1070095	4825794		0-30	
Shovel Test	3742	Negative	1070119	4825804		0-30	
Shovel Test	3743	Negative	1070143	4825814		0-30	
Shovel Test	3744	Negative	1070167	4825824		0-30	
Shovel Test	3745	Negative	1070191	4825834		0-30	
Shovel Test	3746	Negative	1070215	4825844		0-30	
Shovel Test	3747	Negative	1070239	4825854		0-30	
Shovel Test	3748	Negative	1070263	4825864		0-30	
Shovel Test	3749	Negative	1070287	4825874		0-30	
Shovel Test	3750	Negative	1070311	4825884		0-30	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3121	negative	1096039	465841		0-31	
Shovel Test	3122	negative	1096141	465840		0-31	
Shovel Test	3123	negative	1096239	465839		0-50	
Shovel Test	3124	negative	1096340	465837		0-32	
Shovel Test	3125	negative	1096434	465846		0-37	
Shovel Test	3126	negative	1096436	465736		0-37	
Shovel Test	3127	negative	1096337	465740		0-30	
Shovel Test	3128	negative	1096239	465740		0-36	
Shovel Test	3129	negative	1096143	465743		0-34	
Shovel Test	3130	negative	1096042	465748		0-29	
Shovel Test	3131	negative	1095944	465744		0-48	
Shovel Test	3132	negative	1095846	465746		0-32	
Shovel Test	3133	negative	1095742	465750		0-33	
Shovel Test	3134	negative	1095644	465749		0-29	
Shovel Test	3135	negative	1095547	465749		0-40	
Shovel Test	3136	negative	1095449	465748		0-50	
Shovel Test	3137	negative	1095354	465749		0-32	
Shovel Test	3138	negative	1095251	465750		0-32	
Shovel Test	3139	negative	1095252	465656		0-46	
Shovel Test	3140	negative	1095351	465652		0-32	
Shovel Test	3141	negative	1095449	465650		0-50	
Shovel Test	3142	negative	1095547	465652		0-38	
Shovel Test	3143	negative	1095650	465651		0-50	
Shovel Test	3144	negative	1095745	465651		0-32	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3145	negative	1095846	465653		0-50	
Shovel Test	3146	negative	1095942	465646		0-37	
Shovel Test	3147	negative	1096041	465646		0-40	
Shovel Test	3148	negative	1096140	465642		0-50	
Shovel Test	3149	negative	1096238	465643		0-40	
Shovel Test	3150	negative	1096337	465643		0-42	
Shovel Test	3151	negative	1096438	465639		0-50	
Shovel Test	3152	negative	1096433	465545		0-41	
Shovel Test	3153	negative	1096334	465548		0-50	
Shovel Test	3154	negative	1096239	465543		0-37	
Shovel Test	3155	negative	1096132	465541	NSCR 2	0-44	
Shovel Test	3156	positive	1096038	465545	NSCR 2	0-50	
Shovel Test	3157	positive	1095941	465547	NSCR 2	0-28	
Shovel Test	3158	positive	1095846	465551	NSCR 2	0-50	
Shovel Test	3159	negative	1095744	465554		0-50	
Shovel Test	3160	negative	1095645	465550		0-50	
Shovel Test	3161	negative	1095547	465557		0-38	
Shovel Test	3162	negative	1095447	465553		0-34	
Shovel Test	3163	negative	1095353	465552		0-30	
Shovel Test	3164	negative	1095447	465454		0-40	
Shovel Test	3165	negative	1095544	465456		0-41	
Shovel Test	3166	negative	1095648	465454		0-35	
Shovel Test	3167	positive	1095744	465449	NSCR 2	0-60	
Shovel Test	3168	negative	1095840	465453	NSCR 2	0-33	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3169	positive	1095939	465449	NSCR 2	0-50	
Shovel Test	3170	negative	1096040	465448	NSCR 2	0-25	
Shovel Test	3171	negative	1096233	465446	NSCR 2	0-31	
Shovel Test	3172	positive	1096335	465455	NSCR 2	0-50	
Shovel Test	3173	positive	1094448	464384	40MD271	0-34	
Shovel Test	3174	positive	1094549	464383	40MD271	0-50	
Shovel Test	3175	negative	1094648	464382		0-39	
Shovel Test	3176	negative	1094749	464376		0-41	
Shovel Test	3177	negative	1094853	464379		0-37	
Shovel Test	3178	negative	1094944	464380		0-33	
Shovel Test	3179	positive	1095043	464377	40MD268	0-50	
Shovel Test	3180	positive	1095143	464375	40MD268	0-39	
Shovel Test	3181	positive	1095111	464344	40MD268	0-50	
Shovel Test	3182	negative	1095240	464370		0-34	
Shovel Test	3183	negative	1095335	464370		0-40	
Shovel Test	3184	positive	1095329	464467	40MD268	0-50	
Shovel Test	3185	negative	1095238	464475	40MD268	0-37	
Shovel Test	3186	negative	1095143	464477	40MD268	0-31	
Shovel Test	3187	positive	1095045	464469	40MD268	0-35	
Shovel Test	3188	negative	1094940	464478		0-40	
Shovel Test	3189	negative	1094843	464473		0-37	
Shovel Test	3190	negative	1094744	464482		0-31	
Shovel Test	3191	negative	1094653	464481		0-50	
Shovel Test	3192	negative	1094544	464475	40MD271	0-30	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3193	negative	1094557	464578		0-40	
Shovel Test	3194	negative	1094654	464579		0-50	
Shovel Test	3195	negative	1094755	464577		0-50	
Shovel Test	3196	negative	1094843	464576		0-50	
Shovel Test	3197	negative	1094944	464578		0-28	
Shovel Test	3198	negative	1095042	464576		0-51	
Shovel Test	3199	negative	1095142	464575		0-38	
Shovel Test	3200	negative	1095235	464567		0-25	
Shovel Test	3201	negative	1095324	464554		0-36	
Shovel Test	3202	negative	1095330	464669		0-35	
Shovel Test	3203	negative	1095240	464671		0-32	
Shovel Test	3204	negative	1095145	464675		0-36	
Shovel Test	3205	negative	1095044	464666		0-36	
Shovel Test	3206	negative	1094948	464674		0-29	
Shovel Test	3207	negative	1095158	464730		0-28	
No Dig Point	3208	no dig - gas tank	1095437	464663			
No Dig Point	3209	no dig - concrete pad	1095537	464667			
Shovel Test	3210	negative	1095635	464666		0-50	
Shovel Test	3211	negative	1095735	464668	40MD270	0-40	
Shovel Test	3212	negative	1095831	464665	40MD270	0-35	
Shovel Test	3213	negative	1095929	464659	40MD270	0-50	
Shovel Test	3214	negative	1096031	464662	40MD270	0-35	
Shovel Test	3215	negative	1096124	464659	40MD270	0-30	
Shovel Test	3216	negative	1096222	464661	40MD270	0-46	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3217	negative	1096325	464661		0-35	
Shovel Test	3218	negative	1096422	464658		0-31	
Shovel Test	3219	negative	1096515	464659		0-37	
Shovel Test	3220	negative	1096419	464560		0-50	
Shovel Test	3221	negative	1096325	464560	40MD270	0-50	
Shovel Test	3222	negative	1096225	464563	40MD270	0-50	
Shovel Test	3223	positive	1096125	464566	40MD270	0-31	
Shovel Test	3224	positive	1096024	464563	40MD270	0-50	
Shovel Test	3225	negative	1095931	464567	40MD270	0-36	
Shovel Test	3226	negative	1095830	464565	40MD270	0-37	
Shovel Test	3227	negative	1095731	464564	40MD270	0-50	
Shovel Test	3228	positive	1095632	464565	40MD270	0-50	
Shovel Test	3229	positive	1095626	464473	40MD270	0-31	
Shovel Test	3230	positive	1095734	464473	40MD270	0-50	
Shovel Test	3231	negative	1095831	464469	40MD270	0-49	
Shovel Test	3232	negative	1095942	464474	40MD270	0-33	
Shovel Test	3233	negative	1096032	464467	40MD270	0-30	
Shovel Test	3234	positive	1096126	464462	40MD270	0-50	
Shovel Test	3235	positive	1096222	464466	40MD270	0-37	
Shovel Test	3236	negative	1096326	464468	40MD270	0-40	
Shovel Test	3237	negative	1096220	464365	40MD270	0-3	
Shovel Test	3238	negative	1096122	464365	40MD270	0-6	
Shovel Test	3239	positive	1096024	464369	40MD270	0-23	
Shovel Test	3240	negative	1095926	464366	40MD270	0-40	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3241	positive	1095831	464369	40MD270	0-50	
Shovel Test	3242	negative	1095726	464367	40MD270	0-33	
Shovel Test	3243	negative	1095630	464371	20MD270	0-32	
Shovel Test	3244	negative	1095634	464272		0-31	
Shovel Test	3245	positive	1095726	464274	40MD270	0-37	
Shovel Test	3246	negative	1095828	464270	40MD270	0-31	
Shovel Test	3247	positive	1095923	464268	40MD270	0-29	
Shovel Test	3248	positive	1096027	464269	40MD270	0-26	
Shovel Test	3249	positive	1096097	464264	40MD270	0-45	
Shovel Test	3250	negative	1096400	464754		0-33	
Shovel Test	3251	negative	1096328	464757		0-45	
Shovel Test	3252	negative	1096224	464760		0-31	
Shovel Test	3253	negative	1096130	464760		0-34	
Shovel Test	3254	positive	1096020	464752	40MD270	0-50	
Shovel Test	3255	positive	1095914	464761	40MD270	0-50	
Shovel Test	3256	negative	1095831	464755	20MD270	0-26	
Shovel Test	3257	negative	1095742	464761		0-36	
Shovel Test	3258	negative	1095637	464767		0-51	
Shovel Test	3259	negative	1095542	464764		0-50	
Shovel Test	3260	negative	1095449	464763		0-33	
Shovel Test	3261	negative	1095344	464768		0-36	
Shovel Test	3262	negative	1095442	464863		0-31	
Shovel Test	3263	negative	1095541	464862		0-43	
Shovel Test	3264	negative	1095637	464859		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3265	negative	1095739	464863		0-29	
Shovel Test	3266	negative	1095836	464859		0-38	
Shovel Test	3267	negative	1095937	464859		0-44	
Shovel Test	3268	negative	1096033	464857		0-38	
Shovel Test	3269	negative	1096136	464858		0-30	
Shovel Test	3270	negative	1096236	464856		0-34	
Shovel Test	3271	negative	1096327	464853		0-36	
No Dig Point	3272	no dig - paved road	1096417	464857			
Shovel Test	3273	negative	1096324	464955		0-50	
Shovel Test	3274	negative	1096229	464953		0-36	
Shovel Test	3275	negative	1096131	464960		0-39	
Shovel Test	3276	negative	1096032	464961		0-32	
Shovel Test	3277	negative	1095936	464960		0-37	
Shovel Test	3278	negative	1095837	464959		0-33	
Shovel Test	3279	negative	1095734	464956		0-47	
Shovel Test	3280	negative	1095642	464958		0-32	
Shovel Test	3281	negative	1095540	464964		0-45	
Shovel Test	3282	negative	1095443	464965		0-39	
Shovel Test	3283	negative	1095338	464964		0-41	
Shovel Test	3284	negative	1095347	465058		0-36	
Shovel Test	3285	negative	1095445	465063		0-36	
Shovel Test	3286	negative	1095546	465068		0-37	
Shovel Test	3287	negative	1095641	465059		0-43	
Shovel Test	3288	negative	1095742	465062		0-42	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3289	negative	1095839	465059		0-50	
Shovel Test	3290	negative	1095941	465061		0-31	
Shovel Test	3291	negative	1096035	465053		0-30	
Shovel Test	3292	negative	1096128	465060		0-50	
Shovel Test	3293	negative	1096229	465054		0-35	
Shovel Test	3294	negative	1096331	465052		0-41	
Shovel Test	3295	negative	1096427	465052		0-18	
Shovel Test	3296	negative	1096428	465144		0-35	
Shovel Test	3297	negative	1096332	465150		0-21	
Shovel Test	3298	negative	1096234	465150		0-36	
Shovel Test	3299	negative	1096133	465146		0-33	
Shovel Test	3300	negative	1096039	465152		0-31	
Shovel Test	3301	negative	1095937	465156		0-36	
Shovel Test	3302	negative	1095833	465158		0-41	
Shovel Test	3303	negative	1095739	465164		0-50	
Shovel Test	3304	negative	1095640	465155		0-50	
Shovel Test	3305	negative	1095539	465158		0-38	
Shovel Test	3306	negative	1095445	465161		0-21	
Shovel Test	3307	negative	1095343	465167		0-40	
Shovel Test	3308	negative	1095257	465165		0-33	
Shovel Test	3309	negative	1095244	465256		0-26	
Shovel Test	3310	negative	1095339	465268		0-32	
Shovel Test	3311	negative	1095441	465256		0-19	
Shovel Test	3312	negative	1095546	465266		0-39	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3313	negative	1095644	465254		0-43	
Shovel Test	3314	negative	1095728	465255		0-50	
Shovel Test	3315	negative	1095836	465254		0-31	
Shovel Test	3316	negative	1095935	465244		0-43	
Shovel Test	3317	negative	1096038	465245	NSCR 2	0-30	
Shovel Test	3318	negative	1096137	465253	NSCR 2	0-37	
Shovel Test	3319	negative	1096229	465254	NSCR 2	0-16	
Shovel Test	3320	negative	1096341	465252	NSCR 2	0-37	
Shovel Test	3321	positive	1096334	465345	NSCR 2	0-29	
Shovel Test	3322	negative	1096230	465348	NSCR 2	0-29	
No Dig Point	3323	no dig - concrete pad	1096136	465350	NSCR 2		
Shovel Test	3324	negative	1096038	465350	NSCR 2	0-30	
Shovel Test	3325	positive	1095936	465353	NSCR 2	0-28	
Shovel Test	3326	positive	1095853	465359	NSCR 2	0-33	
Shovel Test	3327	negative	1095743	465356		0-35	
Shovel Test	3328	negative	1095643	465357		0-32	
Shovel Test	3329	negative	1095546	465358		0-32	
Shovel Test	3330	negative	1095448	465356		0-39	
Shovel Test	3331	negative	1095351	465353		0-51	
Shovel Test	3332	negative	1095255	465366		0-31	
Shovel Test	3333	negative	1093981	466260		0-50	
Shovel Test	3334	negative	1093871	466263		0-50	
Shovel Test	3335	negative	1093779	466264		0-50	
Shovel Test	3336	negative	1093683	466265		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3337	negative	1093582	466265		0-50	
Shovel Test	3338	negative	1093486	466271		0-50	
Shovel Test	3339	negative	1093387	466271		0-50	
Shovel Test	3340	negative	1093285	466272		0-49	
Shovel Test	3341	negative	1094084	466361		0-50	
Shovel Test	3342	negative	1093975	466361		0-50	
Shovel Test	3343	negative	1093886	466361		0-50	
Shovel Test	3344	negative	1093787	466362		0-50	
Shovel Test	3345	negative	1093686	466364		0-50	
Shovel Test	3346	negative	1093590	466364		0-50	
Shovel Test	3347	negative	1093488	466361		0-50	
Shovel Test	3348	negative	1093385	466366		0-50	
Shovel Test	3349	negative	1093288	466364		0-50	
Shovel Test	3350	negative	1094072	466457		0-50	
Shovel Test	3351	negative	1093980	466462		0-50	
Shovel Test	3352	negative	1093883	466460		0-50	
Shovel Test	3353	negative	1093786	466459		0-50	
Shovel Test	3354	negative	1093692	466467		0-50	
Shovel Test	3355	negative	1093590	466464		0-50	
Shovel Test	3356	negative	1093484	466467		0-50	
Shovel Test	3357	negative	1093395	466462		0-50	
Shovel Test	3358	negative	1093298	466462		0-50	
Shovel Test	3359	negative	1093983	466556		0-50	
Shovel Test	3360	negative	1093883	466558		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3361	negative	1093772	466567		0-50	
Shovel Test	3362	negative	1093688	466559		0-50	
Shovel Test	3363	negative	1093582	466556		0-50	
Shovel Test	3364	negative	1093495	466557		0-50	
Shovel Test	3365	negative	1093396	466558		0-50	
Shovel Test	3366	negative	1093291	466555		0-50	
Shovel Test	3367	negative	1093986	466659		0-50	
Shovel Test	3368	negative	1093874	466649		0-50	
Shovel Test	3369	negative	1093787	466658		0-50	
Shovel Test	3370	negative	1093686	466657		0-50	
Shovel Test	3371	negative	1093592	466656		0-50	
Shovel Test	3372	negative	1093493	466661		0-50	
Shovel Test	3373	negative	1093392	466656		0-50	
Shovel Test	3374	negative	1093290	466655		0-50	
Shovel Test	3375	negative	1093979	466749		0-50	
Shovel Test	3376	negative	1093887	466759		0-50	
Shovel Test	3377	negative	1093792	466754		0-50	
Shovel Test	3378	negative	1093691	466746		0-50	
Shovel Test	3379	negative	1093593	466758		0-50	
Shovel Test	3380	negative	1093494	466754		0-50	
Shovel Test	3381	negative	1093389	466760		0-50	
Shovel Test	3382	negative	1093291	466754		0-50	
Shovel Test	3383	negative	1093984	466843		0-50	
Shovel Test	3384	negative	1093886	466848		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3385	negative	1093791	466859		0-50	
Shovel Test	3386	negative	1093690	466852		0-50	
Shovel Test	3387	negative	1093599	466853		0-50	
Shovel Test	3388	negative	1093499	466856		0-50	
Shovel Test	3389	negative	1093400	466849		0-50	
Shovel Test	3390	negative	1093290	466854		0-50	
Shovel Test	3391	negative	1093686	466952		0-50	
Shovel Test	3392	negative	1093791	466945		0-50	
Shovel Test	3393	negative	1093597	466953		0-50	
Shovel Test	3394	negative	1093493	466948		0-50	
Shovel Test	3395	negative	1093394	466955		0-50	
Shovel Test	3396	positive	1093690	467234	Isolated Find 29	0-50	
Shovel Test	3397	negative	1093298	466956		0-50	
Shovel Test	3398	negative	1093297	467051		0-50	
Shovel Test	3399	negative	1093394	467053		0-50	
Shovel Test	3400	negative	1093495	467052		0-50	
Shovel Test	3401	negative	1093597	467145		0-50	
Shovel Test	3402	negative	1093498	467152		0-50	
Shovel Test	3403	negative	1093391	467147		0-50	
Shovel Test	3404	negative	1093301	467158		0-50	
Shovel Test	3405	negative	1093305	467251		0-50	
Shovel Test	3406	negative	1093408	467252		0-50	
Shovel Test	3407	negative	1093501	467253		0-50	
Shovel Test	3408	negative	1093601	467248		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3409	negative	1093795	467342		0-50	
Shovel Test	3410	negative	1093691	467347		0-50	
Shovel Test	3411	negative	1093594	467342		0-50	
Shovel Test	3412	negative	1093491	467347		0-50	
Shovel Test	3413	negative	1093406	467353		0-50	
Shovel Test	3414	negative	1093300	467354		0-50	
Shovel Test	3415	negative	1093310	467447		0-50	
Shovel Test	3416	negative	1093392	467454		0-50	
Shovel Test	3417	negative	1093498	467451		0-50	
Shovel Test	3418	negative	1093599	467444		0-50	
Shovel Test	3419	negative	1093699	467439		0-50	
Shovel Test	3420	negative	1093800	467444		0-50	
Shovel Test	3421	negative	1093898	467538		0-50	
Shovel Test	3422	negative	1093801	467541		0-50	
Shovel Test	3423	negative	1093700	467550		0-50	
Shovel Test	3424	positive	1093792	467636	40MD269	0-50	
Shovel Test	3427	positive	1093798	467738	40MD269	0-50	
Shovel Test	3428	positive	1093895	467737	40MD269	0-50	
Shovel Test	3429	positive	1093990	467728	40MD269	0-50	
Shovel Test	3432	negative	1093701	467637		0-50	
Shovel Test	3433	negative	1093904	467637		0-50	
Shovel Test	3434	positive	1093993	467837	40MD269	0-36	
Shovel Test	3435	negative	1093990	467634		0-50	
Shovel Test	3436	negative	1094085	467640		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3437	negative	1094096	467732		0-50	
Shovel Test	3438	negative	1093690	467727		0-50	
Shovel Test	3440	negative	1095498	469980		0-34	
Shovel Test	3442	negative	1093702	467843		0-50	
Shovel Test	3443	negative	1093799	467851		0-50	
Shovel Test	3444	negative	1093902	467831	40MD269	0-50	
Shovel Test	3445	positive	1094199	468027	Isolated Find 16	0-50	
Shovel Test	3446	negative	1094097	467829		0-50	
Shovel Test	3447	negative	1094203	467826		0-50	
Shovel Test	3448	negative	1094185	467737		0-50	
Shovel Test	3449	negative	1094208	467936		0-50	
Shovel Test	3450	negative	1094091	467940		0-50	
Shovel Test	3451	positive	1093707	468125	Isolated Find 51	0-50	
Shovel Test	3452	negative	1093998	467922		0-50	
Shovel Test	3453	negative	1093896	467933		0-50	
Shovel Test	3454	negative	1093797	467930		0-50	
Shovel Test	3455	negative	1093697	467931		0-50	
Shovel Test	3456	negative	1093597	467841		0-50	
Shovel Test	3457	negative	1094102	468035		0-50	
Shovel Test	3458	negative	1094000	468032		0-50	
Shovel Test	3459	negative	1093897	468033		0-50	
Shovel Test	3460	negative	1093808	468034		0-50	
Shovel Test	3462	negative	1093799	468133		0-50	
Shovel Test	3463	negative	1093892	468130		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3464	negative	1094003	468135		0-50	
Shovel Test	3465	negative	1094093	468134		0-50	
Shovel Test	3466	negative	1094208	468129		0-50	
Shovel Test	3467	negative	1094197	468233		0-50	
Shovel Test	3468	negative	1094102	468225		0-50	
Shovel Test	3469	negative	1093992	468230		0-50	
Shovel Test	3470	negative	1093899	468229		0-50	
Shovel Test	3471	negative	1093793	468228		0-50	
Shovel Test	3472	negative	1093696	468233		0-50	
Shovel Test	3473	negative	1093603	468232		0-50	
Shovel Test	3474	negative	1094103	468523		0-51	
Shovel Test	3475	negative	1094002	468517		0-50	
Shovel Test	3476	negative	1093901	468522		0-32	
Shovel Test	3477	negative	1093802	468526		0-29	
No Dig Point	3478	no dig - pond	1093707	468522			
Shovel Test	3479	negative	1093608	468519		0-36	
Shovel Test	3480	negative	1093513	468521		0-38	
Shovel Test	3481	negative	1093412	468526		0-35	
Shovel Test	3482	negative	1093411	468624		0-35	
Shovel Test	3483	negative	1093514	468623		0-47	
Shovel Test	3484	negative	1093610	468623		0-31	
Shovel Test	3485	negative	1093706	468622		0-44	
Shovel Test	3486	negative	1093810	468626		0-18	
Shovel Test	3487	negative	1093913	468626		0-32	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3488	negative	1094004	468624		0-36	
Shovel Test	3489	negative	1094108	468620		0-50	
Shovel Test	3490	negative	1094202	468618		0-50	
Shovel Test	3491	negative	1094297	468620		0-37	
Shovel Test	3492	negative	1094301	468716		0-32	
Shovel Test	3494	negative	1094203	468719		0-50	
Shovel Test	3495	negative	1094102	468720		0-29	
Shovel Test	3496	negative	1094005	468720		0-41	
Shovel Test	3497	negative	1093905	468718		0-39	
Shovel Test	3498	negative	1093809	468723		0-26	
Shovel Test	3499	negative	1093711	468724		0-29	
Shovel Test	3500	negative	1093610	468720		0-17	
Shovel Test	3501	negative	1093513	468722		0-33	
Shovel Test	3502	negative	1093413	468722		0-31	
Shovel Test	3504	negative	1093411	468826		0-34	
Shovel Test	3505	negative	1093512	468825		0-50	
Shovel Test	3506	negative	1093610	468824		0-17	
Shovel Test	3507	negative	1093713	468820		0-33	
Shovel Test	3508	negative	1093907	468820		0-43	
Shovel Test	3509	negative	1094012	468814		0-41	
Shovel Test	3510	negative	1094104	468820		0-23	
Shovel Test	3511	negative	1094198	468812		0-50	
Shovel Test	3512	negative	1094297	468816		0-26	
Shovel Test	3513	negative	1094400	468814		0-26	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3514	negative	1094397	468911		0-36	
Shovel Test	3515	negative	1094302	468910		0-38	
Shovel Test	3516	negative	1094199	468923		0-50	
Shovel Test	3517	negative	1094108	468916		0-34	
Shovel Test	3518	negative	1094006	468913		0-34	
Shovel Test	3519	negative	1093911	468914		0-29	
Shovel Test	3520	negative	1093810	468914		0-38	
Shovel Test	3521	negative	1093712	468919		0-24	
Shovel Test	3522	negative	1093613	468925		0-47	
Shovel Test	3523	negative	1093512	468919		0-50	
No Dig Point	3524	no dig - drainage, slope	1093416	468924			
Shovel Test	3525	negative	1093416	469015		0-33	
Shovel Test	3527	negative	1093712	469018		0-30	
Shovel Test	3528	negative	1093814	469017		0-33	
Shovel Test	3529	negative	1093915	469014		0-29	
Shovel Test	3530	negative	1094009	469016		0-40	
Shovel Test	3531	negative	1094104	469011		0-33	
Shovel Test	3532	negative	1094206	469010		0-18	
Shovel Test	3533	negative	1094203	469108		0-33	
Shovel Test	3534	negative	1094107	469117		0-42	
Shovel Test	3535	negative	1094010	469112		0-24	
Shovel Test	3536	negative	1093913	469116		0-43	
Shovel Test	3537	negative	1093815	469114		0-35	
Shovel Test	3538	negative	1093710	469113		0-35	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3539	negative	1093617	469118		0-23	
Shovel Test	3540	negative	1093518	469115		0-46	
Shovel Test	3541	negative	1093418	469114		0-30	
Shovel Test	3542	negative	1093426	469223		0-29	
Shovel Test	3543	negative	1093519	469213		0-32	
Shovel Test	3544	negative	1093611	469211		0-37	
Shovel Test	3545	negative	1093711	469211		0-21	
Shovel Test	3546	negative	1093811	469213		0-40	
Shovel Test	3547	negative	1093913	469205		0-46	
Shovel Test	3548	negative	1094012	469204		0-35	
Shovel Test	3549	negative	1094111	469204		0-23	
Shovel Test	3550	negative	1094210	469209		0-38	
Shovel Test	3551	negative	1094211	469305		0-31	
Shovel Test	3552	negative	1094112	469309		0-35	
Shovel Test	3553	negative	1094017	469310		0-50	
Shovel Test	3554	negative	1093910	469307		0-50	
Shovel Test	3555	negative	1093815	469313		0-34	
Shovel Test	3556	negative	1093716	469313		0-25	
Shovel Test	3557	negative	1093610	469308		0-44	
Shovel Test	3558	negative	1093516	469318		0-34	
Shovel Test	3559	negative	1093420	469310		0-29	
Shovel Test	3560	negative	1093420	469416		0-50	
Shovel Test	3561	negative	1093516	469412		0-42	
Shovel Test	3562	negative	1093621	469411		0-32	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3563	negative	1093713	469407		0-32	
Shovel Test	3564	negative	1093817	469410		0-30	
Shovel Test	3565	negative	1093917	469405		0-35	
Shovel Test	3566	negative	1094015	469407		0-39	
Shovel Test	3567	negative	1094108	469407		0-32	
Shovel Test	3568	negative	1094210	469405		0-26	
Shovel Test	3569	negative	1094215	469497		0-37	
Shovel Test	3570	negative	1094114	469499		0-36	
Shovel Test	3571	negative	1094008	469505		0-28	
Shovel Test	3572	negative	1093912	469506		0-36	
Shovel Test	3573	negative	1093813	469509		0-29	
Shovel Test	3574	negative	1093717	469510		0-48	
Shovel Test	3575	negative	1093615	469508		0-30	
Shovel Test	3576	negative	1093520	469508		0-32	
Shovel Test	3577	negative	1093422	469509		0-34	
Shovel Test	3578	negative	1093422	469611		0-33	
Shovel Test	3579	negative	1093524	469609		0-28	
Shovel Test	3580	negative	1093624	469606		0-38	
Shovel Test	3581	negative	1093720	469605		0-34	
Shovel Test	3582	negative	1093818	469604		0-33	
Shovel Test	3583	negative	1093914	469606		0-30	
Shovel Test	3584	negative	1094012	469602		0-30	
Shovel Test	3585	negative	1094113	469606		0-30	
Shovel Test	3586	negative	1094108	469700		0-26	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3587	negative	1094013	469709		0-31	
Shovel Test	3588	negative	1093906	469701		0-37	
Shovel Test	3589	negative	1093818	469709		0-31	
Shovel Test	3590	negative	1093816	469804		0-24	
Shovel Test	3591	negative	1093919	469801		0-37	
Shovel Test	3592	negative	1094012	469803		0-40	
Shovel Test	3593	negative	1094115	469799		0-23	
Shovel Test	3594	negative	1094213	469796		0-27	
Shovel Test	3595	negative	1094312	469896		0-28	
Shovel Test	3596	negative	1094217	469899		0-24	
Shovel Test	3597	negative	1094114	469900		0-30	
Shovel Test	3598	negative	1094012	469901		0-39	
Shovel Test	3599	negative	1093916	469901		0-25	
Shovel Test	3600	negative	1093817	469905		0-28	
Shovel Test	3601	negative	1093821	469997		0-26	
Shovel Test	3602	negative	1093919	469998		0-31	
Shovel Test	3603	negative	1094011	469995		0-37	
Shovel Test	3604	negative	1094118	469997		0-24	
Shovel Test	3605	negative	1094213	469996		0-29	
Shovel Test	3606	negative	1094309	469999		0-32	
Shovel Test	3607	negative	1094415	469995		0-31	
Shovel Test	3608	negative	1094412	470095		0-33	
Shovel Test	3609	negative	1094483	470092		0-22	
Shovel Test	3610	negative	1094321	470093		0-27	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3611	negative	1094215	470096		0-34	
Shovel Test	3612	negative	1094113	470096		0-26	
Shovel Test	3613	negative	1094021	470097		0-23	
Shovel Test	3614	negative	1094116	470186		0-43	
Shovel Test	3615	negative	1094219	470186		0-42	
Shovel Test	3616	negative	1094312	470190		0-18	
Shovel Test	3617	negative	1094412	470187		0-30	
Shovel Test	3618	negative	1094506	470185		0-37	
Shovel Test	3619	negative	1094506	470283		0-30	
Shovel Test	3620	negative	1094417	470287		0-36	
Shovel Test	3621	negative	1094320	470289		0-21	
Shovel Test	3622	negative	1094217	470292		0-32	
Shovel Test	3623	negative	1093922	470095		0-28	
Shovel Test	3624	negative	1093819	470071		0-35	
Shovel Test	3625	negative	1094026	470197		0-21	
Shovel Test	3626	negative	1093724	469801		0-50	
Shovel Test	3627	negative	1094314	470384		0-34	
Shovel Test	3628	negative	1093626	469802		0-31	
Shovel Test	3629	negative	1094413	470382		0-30	
Shovel Test	3630	negative	1093524	469801		0-29	
Shovel Test	3631	negative	1094508	470383		0-38	
Shovel Test	3632	negative	1093439	469811		0-42	
Shovel Test	3633	negative	1093416	469704		0-50	
Shovel Test	3634	negative	1093524	469706		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3635	negative	1093622	469706		0-21	
Shovel Test	3636	negative	1093719	469703		0-34	
Shovel Test	3637	negative	1094478	469997		0-27	
Shovel Test	3638	negative	1094484	469912		0-54	
Shovel Test	3639	negative	1095586	469973		0-50	
Shovel Test	3641	negative	1095390	469977		0-25	
Shovel Test	3642	negative	1095291	469977		0-35	
Shovel Test	3643	negative	1095193	469887		0-50	
Shovel Test	3644	negative	1095296	469885		0-50	
Shovel Test	3645	negative	1095395	469888		0-39	
Shovel Test	3646	negative	1095491	469883		0-31	
Shovel Test	3647	negative	1095596	469886		0-25	
Shovel Test	3648	negative	1095591	469785		0-39	
Shovel Test	3649	negative	1095492	469786		0-37	
Shovel Test	3650	negative	1095396	469788		0-39	
Shovel Test	3651	negative	1095292	469786		0-50	
Shovel Test	3652	negative	1095191	469789		0-33	
Shovel Test	3653	negative	1095099	469794		0-50	
Shovel Test	3654	negative	1095097	469692		0-50	
Shovel Test	3655	negative	1095194	469692		0-29	
Shovel Test	3656	negative	1095293	469690		0-42	
Shovel Test	3657	negative	1095392	469694		0-50	
Shovel Test	3658	negative	1095491	469683		0-41	
Shovel Test	3659	negative	1095585	469683		0-30	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	3660	negative	1095491	469592		0-50	
Shovel Test	3661	negative	1095391	469595		0-50	
Shovel Test	3662	negative	1095290	469591		0-37	
Shovel Test	3663	negative	1095196	469595		0-43	
Shovel Test	3664	negative	1095092	469592		0-34	
Shovel Test	3665	negative	1095001	469495		0-37	
Shovel Test	3666	negative	1095098	469496		0-30	
Shovel Test	3667	negative	1095002	469597		0-33	
Shovel Test	3668	negative	1095192	469495		0-50	
Shovel Test	3669	negative	1095293	469493		0-49	
Shovel Test	3670	negative	1095395	469492		0-50	
Shovel Test	3702	negative	1091445	463195		0-50	
Shovel Test	3741	negative	1094300	468419		0-45	
Shovel Test	4000	negative	1096443	466528		0-50	
Surface Collection Point	4001	positive	1096156	466138	40MD273		
Shovel Test	4004	negative	1093600	468323		0-50	
Shovel Test	4005	negative	1095339	464867		0-51	
Shovel Test	4006	negative	1096135	465449	NSCR 2	0-15	
Shovel Test	4007	negative	1095255	465453		0-31	
Shovel Test	4008	negative	1095347	465457		0-40	
Shovel Test	4009	negative	1095257	465556		0-28	
Shovel Test	4010	negative	1093695	468326		0-50	
Shovel Test	4011	negative	1093797	468325		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4012	negative	1093896	468327		0-50	
Shovel Test	4013	negative	1093995	468328		0-50	
Shovel Test	4014	negative	1094099	468331		0-50	
Shovel Test	4015	negative	1094200	468319		0-50	
Shovel Test	4016	negative	1094201	468427		0-50	
Shovel Test	4017	negative	1094289	468517		0-50	
Shovel Test	4018	negative	1094194	468510		0-50	
Shovel Test	4019	negative	1094097	468436		0-50	
Surface Collection Point	4020	positive	1093411	467049	Isolated Find 8		
Surface Collection Point	4021	positive	1093906	467838	40MD269		
Shovel Test	4025	negative	1093808	468821		0-31	
Shovel Test	4026	negative	1093519	469017		0-40	
Shovel Test	4027	negative	1093617	469021		0-50	
Shovel Test	4030	negative	1094002	468427		0-50	
Shovel Test	4031	negative	1093905	468440		0-50	
Shovel Test	4032	negative	1093797	468425		0-50	
Shovel Test	4033	negative	1094410	469898		0-27	
Shovel Test	4034	negative	1093699	468034		0-50	
Shovel Test	4035	negative	1093299	467546		0-57	
Shovel Test	4036	negative	1093402	467545		0-57	
Shovel Test	4037	negative	1093691	467147		0-57	
No Dig Point	4050	no dig - ravine	1096412	463081			

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Surface Collection Point	4051	positive	1096125	463163	40MD275		
No Dig Point	4052	no dig - water line	1095927	463678			
No Dig Point	4055	no dig - ravine	1096988	462482			
No Dig Point	4057	no dig - creek bed	1095910	462789			
Surface Collection Point	4060	positive	1096572	464335	40MD274		
Surface Collection Point	4061	positive	1096083	464510	40MD270		
Shovel Test	4090	negative	1093350	462621		0-50	
Surface Collection Point	4100	positive	1093189	462836	Isolated Find 10		
Shovel Test	4200	negative	1099469	464433		0-50	
Shovel Test	4201	negative	1099365	464428		0-50	
Shovel Test	4202	negative	1099273	464433		0-50	
Shovel Test	4203	negative	1099172	464435		0-50	
Shovel Test	4204	negative	1099078	464434		0-50	
Shovel Test	4205	negative	1098978	464434		0-50	
Shovel Test	4206	negative	1098884	464441		0-50	
Shovel Test	4207	negative	1098780	464440		0-50	
Shovel Test	4208	negative	1098685	464439		0-50	
Shovel Test	4209	negative	1098587	464441		0-50	
Shovel Test	4210	negative	1098588	464542		0-50	
Shovel Test	4211	negative	1098683	464539		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4212	negative	1098788	464534		0-50	
Shovel Test	4213	negative	1098882	464538		0-50	
Shovel Test	4214	negative	1098977	464530		0-50	
Shovel Test	4215	negative	1099079	464535		0-50	
Shovel Test	4216	negative	1099176	464531		0-50	
Shovel Test	4217	negative	1099276	464532		0-50	
Shovel Test	4218	negative	1099375	464531		0-50	
Shovel Test	4219	negative	1099470	464529		0-50	
Shovel Test	4220	negative	1099480	464628		0-50	
Shovel Test	4221	negative	1099368	464632		0-50	
Shovel Test	4222	negative	1099272	464642		0-50	
Shovel Test	4223	negative	1099174	464629		0-50	
Shovel Test	4224	negative	1099083	464642		0-50	
Shovel Test	4225	negative	1098979	464634		0-50	
Shovel Test	4226	negative	1098883	464641		0-50	
Shovel Test	4227	negative	1098785	464631		0-50	
Shovel Test	4228	negative	1098688	464642		0-57	
Shovel Test	4229	negative	1098589	464636		0-50	
Shovel Test	4230	negative	1098584	464736		0-50	
Shovel Test	4231	negative	1098680	464736		0-50	
Shovel Test	4232	negative	1098786	464728		0-50	
Shovel Test	4233	negative	1098888	464734		0-50	
Shovel Test	4234	negative	1098985	464733		0-50	
Shovel Test	4235	negative	1099083	464725		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4236	negative	1099176	464725		0-50	
Shovel Test	4237	negative	1099283	464723		0-50	
Shovel Test	4238	negative	1099369	464728		0-50	
Shovel Test	4239	negative	1099472	464728		0-50	
Shovel Test	4240	negative	1099540	464728		0-50	
Shovel Test	4241	negative	1099548	464816		0-50	
Shovel Test	4242	negative	1099482	464830		0-50	
Shovel Test	4243	negative	1099380	464827		0-50	
Shovel Test	4244	negative	1099301	464829		0-50	
Shovel Test	4245	negative	1099183	464829		0-50	
Shovel Test	4246	negative	1099087	464828		0-50	
Shovel Test	4247	negative	1098981	464831		0-50	
Shovel Test	4248	negative	1098891	464830		0-50	
Shovel Test	4249	negative	1098784	464830		0-50	
Shovel Test	4250	negative	1098690	464837		0-50	
Shovel Test	4251	negative	1098624	464837		0-50	
Shovel Test	4252	negative	1098621	464937		0-50	
Shovel Test	4253	negative	1098687	464935		0-50	
Shovel Test	4254	negative	1098786	464929		0-50	
Shovel Test	4255	negative	1098891	464922		0-50	
Shovel Test	4256	negative	1098982	464929		0-50	
Shovel Test	4257	negative	1099084	464928		0-50	
Shovel Test	4258	negative	1099081	465031		0-50	
Shovel Test	4259	negative	1098991	465020		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4260	negative	1098879	465032		0-50	
Shovel Test	4261	negative	1098789	465028		0-25	
Shovel Test	4262	negative	1098678	465034		0-50	
Shovel Test	4263	negative	1098625	465043		0-50	
Shovel Test	4264	negative	1098785	465128		0-50	
Shovel Test	4265	negative	1098886	465127		0-50	
Shovel Test	4266	negative	1098981	465130		0-50	
Shovel Test	4267	negative	1099078	465126		0-50	
Shovel Test	4268	negative	1099177	465119		0-50	
Shovel Test	4269	negative	1099185	465216		0-50	
Shovel Test	4270	negative	1099088	465226		0-50	
Shovel Test	4271	negative	1098979	465230		0-50	
Shovel Test	4272	negative	1098883	465221		0-50	
Shovel Test	4273	negative	1098987	465316		0-50	
Shovel Test	4274	negative	1099084	465319		0-50	
Shovel Test	4275	negative	1099177	465317		0-50	
Shovel Test	4276	negative	1099281	465316		0-50	
Shovel Test	4281	negative	1092464	462836		0-50	
Shovel Test	4282	negative	1092462	462738		0-50	
Shovel Test	4283	negative	1092462	462635		0-50	
Shovel Test	4284	negative	1092460	462545		0-50	
Shovel Test	4285	negative	1092362	462541		0-50	
Shovel Test	4286	negative	1092367	462634		0-50	
Shovel Test	4287	negative	1092368	462730		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4288	negative	1092364	462828		0-50	
Shovel Test	4289	negative	1092367	462933		0-50	
Shovel Test	4290	negative	1092364	463026		0-50	
Shovel Test	4291	negative	1092362	463124		0-50	
Shovel Test	4292	negative	1092371	463221		0-50	
Shovel Test	4293	negative	1092379	463319		0-50	
Shovel Test	4294	negative	1092367	463428		0-50	
Shovel Test	4295	negative	1092275	463422		0-50	
Shovel Test	4296	negative	1092275	463324		0-50	
Shovel Test	4297	negative	1092275	463229		0-50	
Shovel Test	4298	negative	1092267	463129		0-50	
Shovel Test	4299	negative	1092276	463026		0-50	
Shovel Test	4300	negative	1092273	462934		0-50	
Shovel Test	4301	negative	1092267	462830		0-50	
Shovel Test	4302	negative	1092270	462734		0-50	
Shovel Test	4303	negative	1092273	462639		0-50	
Shovel Test	4304	negative	1092270	462536		0-50	
Shovel Test	4305	negative	1092161	462534		0-50	
Shovel Test	4306	negative	1092171	462643		0-50	
Shovel Test	4307	negative	1092173	462732		0-50	
Shovel Test	4308	negative	1092173	462828		0-50	
Shovel Test	4309	negative	1092172	462935		0-50	
Shovel Test	4310	negative	1092175	463032		0-50	
Shovel Test	4311	negative	1092175	463129		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4312	negative	1092172	463224		0-50	
Shovel Test	4313	negative	1092177	463322		0-50	
Shovel Test	4314	negative	1092175	463421		0-50	
Shovel Test	4315	negative	1092088	463425		0-50	
Shovel Test	4316	negative	1092080	463332		0-50	
Shovel Test	4317	negative	1092082	463229		0-50	
Shovel Test	4318	negative	1092077	463126		0-50	
Shovel Test	4319	negative	1092069	463037		0-50	
Shovel Test	4320	negative	1092074	462936		0-50	
Shovel Test	4321	negative	1092073	462832		0-50	
Shovel Test	4322	negative	1092072	462736		0-50	
Shovel Test	4323	negative	1092061	462637		0-50	
Shovel Test	4324	negative	1092074	462537		0-50	
Shovel Test	4325	negative	1092067	462435		0-50	
Shovel Test	4326	negative	1092066	462343		0-50	
Shovel Test	4327	negative	1092070	462243		0-50	
Shovel Test	4328	negative	1092070	462145		0-50	
Shovel Test	4329	negative	1092060	462051		0-50	
Shovel Test	4330	negative	1092064	461943		0-50	
Shovel Test	4331	negative	1092064	461847		0-50	
Shovel Test	4332	negative	1092061	461753		0-22	
Shovel Test	4334	negative	1091961	461758		0-50	
Shovel Test	4335	negative	1091962	461843		0-50	
Shovel Test	4336	negative	1091954	461950		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4337	negative	1091964	462048		0-50	
Shovel Test	4338	negative	1091971	462151		0-50	
Shovel Test	4339	negative	1091973	462245		0-50	
Shovel Test	4340	negative	1091973	462359		0-50	
Shovel Test	4341	negative	1091967	462442		0-50	
Shovel Test	4342	negative	1091966	462544		0-30	
Shovel Test	4343	negative	1091970	462634		0-33	
Shovel Test	4344	negative	1091972	462734		0-50	
Shovel Test	4345	negative	1091964	462827		0-50	
Shovel Test	4346	negative	1091978	462931		0-50	
Shovel Test	4347	negative	1091974	463030		0-50	
Shovel Test	4348	negative	1091966	463130		0-50	
Shovel Test	4349	negative	1091974	463235		0-50	
Shovel Test	4350	negative	1091975	463323		0-50	
Shovel Test	4351	negative	1091968	463426		0-50	
Shovel Test	4352	negative	1091972	463518		0-50	
Shovel Test	4353	negative	1091885	463523		0-50	
Shovel Test	4354	negative	1091882	463413		0-50	
Shovel Test	4355	negative	1091878	463331		0-50	
Shovel Test	4356	negative	1091885	463231		0-50	
Shovel Test	4357	negative	1091877	463131		0-50	
Shovel Test	4358	negative	1091871	463038		0-50	
Shovel Test	4359	negative	1091879	462936		0-40	
Shovel Test	4360	negative	1091873	462839		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4361	negative	1091875	462545		0-40	
Shovel Test	4362	negative	1091874	462444		0-50	
Shovel Test	4363	negative	1091873	462347		0-50	
Shovel Test	4364	negative	1091869	462247		0-50	
Shovel Test	4365	negative	1091867	462144		0-50	
Shovel Test	4366	negative	1091871	462049		0-50	
Shovel Test	4367	negative	1091867	461947		0-30	
Shovel Test	4368	negative	1091868	461851		0-27	
Shovel Test	4369	negative	1091867	461755		0-50	
Shovel Test	4370	negative	1091763	461755		0-50	
Shovel Test	4371	negative	1091580	462735		0-50	
Shovel Test	4372	negative	1091579	462644		0-50	
Shovel Test	4373	negative	1091575	462544		0-50	
Shovel Test	4374	negative	1091578	462448		0-50	
Shovel Test	4375	negative	1091579	462349		0-50	
Shovel Test	4376	negative	1091584	462250		0-50	
Shovel Test	4377	negative	1091476	462348		0-50	
Shovel Test	4378	negative	1091483	462452		0-50	
Shovel Test	4379	negative	1091480	462548		0-50	
Shovel Test	4380	negative	1091479	462644		0-50	
Shovel Test	4381	negative	1091485	462738		0-50	
Shovel Test	4382	negative	1091480	462839		0-50	
Shovel Test	4383	negative	1091483	462938		0-50	
Shovel Test	4384	negative	1091486	463036		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4385	negative	1091487	463136		0-50	
Shovel Test	4386	negative	1091488	463234		0-50	
Shovel Test	4387	negative	1091388	463228		0-50	
Shovel Test	4388	negative	1091389	463142		0-50	
Shovel Test	4389	negative	1091388	463040		0-50	
Shovel Test	4390	negative	1091383	462939		0-50	
Shovel Test	4391	negative	1091387	462847		0-50	
Shovel Test	4392	negative	1091378	462735		0-50	
Shovel Test	4393	negative	1091385	462646		0-50	
Shovel Test	4394	negative	1091382	462541		0-50	
Shovel Test	4395	negative	1091375	462443		0-50	
Shovel Test	4396	negative	1091286	462451		0-50	
Shovel Test	4397	negative	1091280	462546		0-50	
Shovel Test	4398	negative	1091281	462649		0-50	
Shovel Test	4399	negative	1091284	462747		0-50	
Shovel Test	4400	negative	1091285	462848		0-50	
Shovel Test	4401	negative	1091293	462939		0-50	
Shovel Test	4402	negative	1091285	463035		0-50	
Shovel Test	4403	negative	1091289	463138		0-50	
Shovel Test	4404	negative	1091291	463236		0-50	
Shovel Test	4405	negative	1091192	463330		0-50	
Shovel Test	4406	negative	1091190	463238		0-50	
Shovel Test	4407	negative	1091187	463143		0-50	
Shovel Test	4408	negative	1091185	463040		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4409	negative	1091193	462942		0-50	
Shovel Test	4410	negative	1091186	462843		0-50	
Shovel Test	4411	negative	1091191	462753		0-50	
Shovel Test	4412	negative	1091185	462646		0-50	
Shovel Test	4413	negative	1091184	462549		0-50	
Shovel Test	4414	negative	1091083	462551		0-50	
Shovel Test	4415	negative	1091086	462648		0-50	
Shovel Test	4416	negative	1091092	462751		0-50	
Shovel Test	4417	negative	1091092	462839		0-50	
Shovel Test	4418	negative	1091088	462945		0-50	
Shovel Test	4419	negative	1091089	463038		0-50	
Shovel Test	4420	negative	1091089	463144		0-50	
Shovel Test	4421	negative	1091090	463236		0-50	
Shovel Test	4422	negative	1091090	463341		0-50	
Shovel Test	4423	negative	1090995	463242		0-50	
Shovel Test	4424	negative	1090998	463140		0-50	
Shovel Test	4425	negative	1090989	463038		0-50	
Shovel Test	4426	negative	1090994	462941		0-50	
Shovel Test	4427	negative	1090990	462843		0-50	
Shovel Test	4428	negative	1090900	462940		0-50	
Shovel Test	4429	negative	1090902	463050		0-50	
Shovel Test	4430	negative	1090898	463143		0-50	
Shovel Test	4431	negative	1090886	463236		0-50	
Shovel Test	4432	negative	1090800	463239		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4433	negative	1090796	463046		0-50	
Shovel Test	4434	negative	1090793	462947		0-50	
Shovel Test	4435	negative	1090694	463044		0-50	
Shovel Test	4436	negative	1090696	463142		0-50	
Shovel Test	4437	negative	1091581	462843		0-50	
Shovel Test	4438	negative	1091677	462839		0-50	
Shovel Test	4439	negative	1091779	462842		0-50	
Shovel Test	4440	negative	1091778	462937		0-36	
Shovel Test	4441	negative	1091683	462938		0-50	
Shovel Test	4442	negative	1091578	462939		0-50	
Shovel Test	4443	negative	1091578	463030		0-50	
Shovel Test	4444	negative	1091679	463035		0-50	
Shovel Test	4445	negative	1091775	463039		0-50	
Shovel Test	4446	negative	1091783	463141		0-50	
Shovel Test	4447	negative	1091683	463131		0-50	
Shovel Test	4448	negative	1091584	463135		0-50	
Shovel Test	4450	negative	1091586	463229		0-50	
Shovel Test	4451	negative	1091686	463231		0-50	
Shovel Test	4452	negative	1091779	463234		0-50	
Shovel Test	4453	negative	1091787	463331		0-50	
Shovel Test	4454	negative	1091684	463335		0-50	
Shovel Test	4455	negative	1091587	463325		0-50	
Shovel Test	4456	negative	1091489	463330		0-50	
Shovel Test	4457	negative	1091389	463333		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4458	negative	1091290	463332		0-50	
Shovel Test	4459	negative	1091290	463432		0-50	
Shovel Test	4460	negative	1091388	463433		0-25	
Shovel Test	4461	negative	1091489	463431		0-50	
Shovel Test	4462	negative	1091589	463431		0-50	
Shovel Test	4463	negative	1091686	463432		0-50	
Shovel Test	4464	negative	1091784	463425		0-50	
Shovel Test	4465	negative	1091785	463523		0-50	
Shovel Test	4466	negative	1091685	463525		0-50	
Shovel Test	4467	negative	1091568	463527		0-50	
Shovel Test	4468	negative	1091489	463530		0-35	
Shovel Test	4469	negative	1091391	463528		0-50	
Shovel Test	4470	negative	1091291	463533		0-50	
Shovel Test	4471	negative	1091293	463629		0-50	
Shovel Test	4472	negative	1091393	463628		0-50	
Shovel Test	4473	negative	1091491	463629		0-50	
Shovel Test	4474	negative	1091589	463627		0-50	
Shovel Test	4475	negative	1091687	463625		0-50	
Shovel Test	4476	negative	1091197	463632		0-50	
Shovel Test	4477	negative	1091098	463634		0-50	
Shovel Test	4478	negative	1090998	463634		0-50	
Shovel Test	4479	negative	1090897	463634		0-50	
Shovel Test	4480	negative	1090798	463633		0-50	
Shovel Test	4481	negative	1090701	463635		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4482	negative	1090605	463636		0-50	
Shovel Test	4483	negative	1090505	463636		0-50	
Shovel Test	4484	negative	1090408	463637		0-60	
Shovel Test	4485	negative	1090310	463643		0-50	
Shovel Test	4486	negative	1090211	463643		0-50	
Shovel Test	4488	negative	1090212	463543		0-50	
Shovel Test	4489	negative	1090308	463542		0-50	
Shovel Test	4490	negative	1090403	463540		0-50	
Shovel Test	4491	negative	1090505	463538		0-50	
Shovel Test	4492	negative	1090603	463538		0-50	
Shovel Test	4493	negative	1090706	463537		0-50	
Shovel Test	4494	negative	1090898	463534		0-50	
Shovel Test	4495	negative	1090996	463532		0-50	
Shovel Test	4496	negative	1091095	463531		0-50	
Shovel Test	4497	negative	1091192	463534		0-50	
Shovel Test	4498	negative	1091194	463437		0-50	
Shovel Test	4499	negative	1091093	463434		0-50	
Shovel Test	4500	negative	1090997	463438		0-50	
Shovel Test	4501	negative	1090899	463439		0-34	
Shovel Test	4502	negative	1090798	463341		0-50	
Shovel Test	4503	negative	1090894	463339		0-50	
Shovel Test	4504	negative	1090995	463339		0-50	
Shovel Test	4505	negative	1090699	463340		0-50	
Shovel Test	4506	negative	1090604	463345		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4507	negative	1090502	463342		0-50	
Shovel Test	4508	negative	1090405	463345		0-50	
Shovel Test	4509	negative	1090308	463347		0-56	
Shovel Test	4510	negative	1090210	463251		0-50	
Shovel Test	4511	negative	1090300	463241		0-50	
Shovel Test	4512	negative	1090409	463244		0-50	
Shovel Test	4513	negative	1090502	463245		0-50	
Shovel Test	4514	negative	1090602	463245		0-50	
Shovel Test	4515	negative	1090694	463242		0-50	
Shovel Test	4516	negative	1090595	463146		0-50	
Shovel Test	4517	negative	1090506	463152		0-50	
Shovel Test	4518	negative	1090405	463139		0-50	
Shovel Test	4519	negative	1090306	463150		0-50	
Shovel Test	4520	negative	1090204	463143		0-50	
Shovel Test	4521	negative	1090207	463046		0-50	
Shovel Test	4522	negative	1090303	463048		0-50	
Shovel Test	4523	negative	1090402	463046		0-50	
Shovel Test	4524	negative	1090501	463051		0-50	
Shovel Test	4525	negative	1090600	463048		0-50	
Shovel Test	4526	negative	1090599	462950		0-50	
Shovel Test	4527	negative	1090503	462948		0-50	
Shovel Test	4528	negative	1090400	462947		0-50	
Shovel Test	4529	negative	1090303	462953		0-50	
Shovel Test	4530	negative	1090200	462942		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4531	negative	1090204	462850		0-50	
Shovel Test	4532	negative	1090299	462852		0-50	
Shovel Test	4533	negative	1090400	462850		0-50	
Shovel Test	4534	negative	1090502	462851		0-50	
Shovel Test	4535	negative	1090594	462850		0-50	
Shovel Test	4536	negative	1090689	462851		0-50	
Shovel Test	4537	negative	1090791	462848		0-50	
Shovel Test	4538	negative	1090889	462847		0-50	
Shovel Test	4539	negative	1090595	462754		0-50	
Shovel Test	4540	negative	1090501	462758		0-50	
Shovel Test	4541	negative	1090402	462757		0-50	
Shovel Test	4542	negative	1090301	462752		0-50	
Shovel Test	4543	negative	1090204	462750		0-50	
Shovel Test	4544	negative	1090195	462655		0-50	
Shovel Test	4545	negative	1090294	462663		0-50	
Shovel Test	4546	negative	1090395	462655		0-50	
Shovel Test	4547	negative	1090499	462655		0-50	
Shovel Test	4548	negative	1090589	462649		0-50	
Shovel Test	4549	negative	1090694	462640		0-50	
Shovel Test	4550	negative	1090791	462655		0-50	
Shovel Test	4551	negative	1090885	462648		0-24	
Shovel Test	4552	negative	1090988	462649		0-50	
Shovel Test	4553	negative	1090986	462545		0-50	
Shovel Test	4554	negative	1090891	462548		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4555	negative	1090788	462553		0-50	
Shovel Test	4556	negative	1090692	462555		0-50	
Shovel Test	4557	negative	1090593	462560		0-50	
Shovel Test	4558	negative	1090492	462554		0-50	
Shovel Test	4559	negative	1090401	462555		0-50	
Shovel Test	4560	negative	1090298	462555		0-50	
Shovel Test	4561	negative	1090195	462465		0-50	
Shovel Test	4562	negative	1090294	462454		0-50	
Shovel Test	4563	negative	1090396	462460		0-50	
Shovel Test	4564	negative	1090492	462455		0-50	
Shovel Test	4565	negative	1090595	462457		0-50	
Shovel Test	4566	negative	1090782	462454		0-50	
Shovel Test	4567	negative	1090884	462453		0-50	
Shovel Test	4568	negative	1090981	462452		0-50	
Shovel Test	4569	negative	1091077	462451		0-50	
Shovel Test	4570	negative	1091178	462449		0-50	
Shovel Test	4571	negative	1091381	462352		0-50	
Shovel Test	4572	negative	1091274	462351		0-50	
Shovel Test	4573	negative	1091175	462353		0-50	
Shovel Test	4574	negative	1091079	462351		0-50	
Shovel Test	4582	negative	1090987	462349		0-50	
Shovel Test	4583	negative	1090883	462350		0-50	
Shovel Test	4584	negative	1090789	462351		0-50	
Shovel Test	4585	negative	1090685	462363		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4586	negative	1090601	462361		0-50	
Shovel Test	4587	negative	1090485	462360		0-50	
Shovel Test	4588	negative	1090390	462363		0-50	
Shovel Test	4589	negative	1090294	462360		0-50	
Shovel Test	4590	negative	1090203	462369		0-50	
Shovel Test	4591	negative	1090117	462369		0-50	
Shovel Test	4592	negative	1090096	462261		0-50	
Shovel Test	4593	negative	1090200	462264		0-30	
Shovel Test	4594	negative	1090296	462266		0-50	
Shovel Test	4595	negative	1090385	462258		0-50	
Shovel Test	4596	negative	1090486	462261		0-50	
Shovel Test	4597	negative	1090591	462267		0-50	
Shovel Test	4598	negative	1090690	462262		0-50	
Shovel Test	4599	negative	1090786	462264		0-50	
Shovel Test	4600	negative	1090888	462253		0-50	
Shovel Test	4601	negative	1090983	462254		0-50	
Shovel Test	4603	negative	1091083	462256		0-50	
Shovel Test	4604	negative	1091177	462255		0-50	
Shovel Test	4605	negative	1091274	462258		0-50	
Shovel Test	4606	negative	1091371	462257		0-50	
Shovel Test	4607	negative	1091475	462250		0-50	
Shovel Test	4608	negative	1091575	462140		0-50	
Shovel Test	4609	negative	1091478	462152		0-50	
Shovel Test	4610	negative	1091380	462152		0-60	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4611	negative	1091283	462153		0-50	
Shovel Test	4612	negative	1091178	462155		0-50	
Shovel Test	4613	negative	1091081	462156		0-50	
Shovel Test	4614	negative	1090984	462158		0-50	
Shovel Test	4615	negative	1090885	462154		0-50	
Shovel Test	4616	negative	1090791	462158		0-50	
Shovel Test	4617	negative	1090684	462161		0-50	
Shovel Test	4618	negative	1090593	462160		0-50	
Shovel Test	4619	negative	1090488	462164		0-34	
Shovel Test	4620	negative	1090394	462165		0-50	
Shovel Test	4621	negative	1091770	461854		0-50	
Shovel Test	4622	negative	1091763	461951		0-50	
Shovel Test	4623	negative	1091767	462048		0-50	
Shovel Test	4624	negative	1091770	462150		0-50	
Shovel Test	4625	negative	1091769	462246		0-50	
Shovel Test	4626	negative	1091773	462344		0-50	
Shovel Test	4627	negative	1091772	462446		0-50	
Shovel Test	4628	negative	1091777	462545		0-50	
Shovel Test	4629	negative	1091673	462743		0-50	
Shovel Test	4630	negative	1091676	462648		0-50	
Shovel Test	4631	negative	1091670	462542		0-50	
Shovel Test	4632	negative	1091679	462446		0-50	
Shovel Test	4633	negative	1091675	462352		0-50	
Shovel Test	4634	negative	1091671	462242		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4635	negative	1091675	462150		0-50	
Shovel Test	4636	negative	1091679	462053		0-50	
Shovel Test	4637	negative	1091670	461956		0-50	
Shovel Test	4638	negative	1091663	461861		0-50	
Shovel Test	4639	negative	1091666	461753		0-33	
Shovel Test	4640	negative	1091575	461757		0-50	
Shovel Test	4641	negative	1091469	461757		0-50	
Shovel Test	4642	negative	1091373	461758		0-50	
Shovel Test	4643	negative	1091273	461757		0-50	
Shovel Test	4644	negative	1091176	461760		0-50	
Shovel Test	4645	negative	1091079	461763		0-50	
Shovel Test	4646	negative	1090980	461762		0-50	
Shovel Test	4647	negative	1090879	461767		0-50	
Shovel Test	4648	negative	1090781	461762		0-50	
Shovel Test	4649	negative	1090677	461767		0-50	
Shovel Test	4650	negative	1090585	461768		0-50	
Shovel Test	4651	negative	1090487	461779		0-50	
Shovel Test	4672	negative	1090390	461772		0-50	
Shovel Test	4673	negative	1090287	461773		0-50	
Shovel Test	4674	negative	1090190	461777		0-50	
Shovel Test	4675	negative	1090095	461779		0-50	
Shovel Test	4676	negative	1090090	461870		0-50	
Shovel Test	4677	negative	1090193	461866		0-50	
Shovel Test	4678	negative	1090288	461866		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4679	negative	1090388	461870		0-50	
Shovel Test	4680	negative	1090479	461864		0-50	
Shovel Test	4681	negative	1090589	461867		0-50	
Shovel Test	4682	negative	1090685	461864		0-25	
Shovel Test	4683	negative	1090784	461861		0-50	
Shovel Test	4684	negative	1090883	461861		0-50	
Shovel Test	4685	negative	1090980	461862		0-50	
Shovel Test	4686	negative	1091078	461860		0-50	
Shovel Test	4687	negative	1091176	461860		0-50	
Shovel Test	4688	negative	1091276	461858		0-50	
Shovel Test	4689	negative	1091375	461855		0-50	
Shovel Test	4690	negative	1091473	461856		0-50	
Shovel Test	4691	negative	1091570	461856		0-40	
Shovel Test	4692	negative	1091571	461954		0-66	
Shovel Test	4693	negative	1091473	461954		0-50	
Shovel Test	4694	negative	1091377	461954		0-50	
Shovel Test	4695	negative	1091275	461957		0-50	
Shovel Test	4696	negative	1091178	461958		0-50	
Shovel Test	4698	negative	1091077	461960		0-50	
Shovel Test	4699	negative	1090980	461963		0-50	
Shovel Test	4700	negative	1090883	461962		0-50	
Shovel Test	4701	negative	1090786	461958		0-50	
Shovel Test	4702	negative	1090684	461961		0-50	
Shovel Test	4703	negative	1090585	461963		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4704	negative	1090488	461963		0-50	
Shovel Test	4705	negative	1090392	461964		0-50	
Shovel Test	4706	negative	1090291	461969		0-50	
Shovel Test	4707	negative	1090195	461969		0-50	
Shovel Test	4708	negative	1090095	461968		0-50	
Shovel Test	4709	negative	1090097	462071		0-50	
Shovel Test	4710	negative	1090089	462169		0-50	
Shovel Test	4711	negative	1090198	462165		0-50	
Shovel Test	4712	negative	1090295	462162		0-50	
Shovel Test	4713	negative	1090195	462064		0-50	
Shovel Test	4714	negative	1090294	462066		0-50	
Shovel Test	4715	negative	1090390	462062		0-50	
Shovel Test	4716	negative	1090491	462060		0-50	
Shovel Test	4717	negative	1090589	462061		0-50	
Shovel Test	4718	negative	1090687	462061		0-50	
Shovel Test	4719	negative	1090790	462065		0-50	
Shovel Test	4720	negative	1090882	462049		0-50	
Shovel Test	4721	negative	1090973	462058		0-50	
Shovel Test	4722	negative	1091077	462058		0-50	
Shovel Test	4723	negative	1091179	462057		0-50	
Shovel Test	4724	negative	1091275	462058		0-50	
Shovel Test	4725	negative	1091377	462053		0-50	
Shovel Test	4726	negative	1091473	462056		0-50	
Shovel Test	4727	negative	1091577	462053		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4728	negative	1093726	469903		0-50	
Shovel Test	4729	negative	1093621	469902		0-50	
Shovel Test	4730	negative	1093525	469903		0-50	
Shovel Test	4731	negative	1093427	469911		0-50	
Shovel Test	4732	negative	1093426	470004		0-50	
Shovel Test	4733	negative	1093427	470101		0-50	
Shovel Test	4734	negative	1093430	470204		0-50	
Shovel Test	4735	negative	1093430	470301		0-50	
Shovel Test	4736	negative	1093436	470399		0-50	
Shovel Test	4737	negative	1093447	470505		0-50	
Shovel Test	4738	negative	1093454	470595		0-50	
Shovel Test	4739	negative	1093456	470691		0-50	
Shovel Test	4740	negative	1093463	470793		0-50	
Shovel Test	4741	negative	1093466	470889		0-50	
Shovel Test	4742	negative	1093476	470985		0-50	
Shovel Test	4743	negative	1093530	470892		0-50	
Shovel Test	4744	negative	1093533	470792		0-50	
Shovel Test	4745	negative	1093533	470695		0-50	
Shovel Test	4746	negative	1093531	470596		0-50	
Shovel Test	4747	negative	1093531	470494		0-50	
Shovel Test	4748	negative	1093528	470397		0-50	
Shovel Test	4749	negative	1093527	470298		0-50	
Shovel Test	4750	negative	1093530	470202		0-50	
Shovel Test	4751	negative	1093526	470105		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4753	negative	1093626	470101		0-50	
Shovel Test	4754	negative	1093625	470201		0-50	
Shovel Test	4755	negative	1093626	470302		0-50	
Shovel Test	4756	negative	1093628	470398		0-50	
Shovel Test	4757	negative	1093626	470496		0-50	
Shovel Test	4758	negative	1093631	470596		0-50	
Shovel Test	4759	negative	1093629	470694		0-50	
Shovel Test	4760	negative	1093634	470792		0-50	
Shovel Test	4761	negative	1093634	470894		0-50	
Shovel Test	4762	negative	1093729	470887		0-50	
Shovel Test	4763	negative	1093733	470790		0-50	
Shovel Test	4764	negative	1093732	470696		0-50	
Shovel Test	4765	negative	1093731	470593		0-50	
Shovel Test	4767	negative	1093729	470497		0-50	
Shovel Test	4768	negative	1093725	470396		0-50	
Shovel Test	4769	negative	1093727	470298		0-50	
Shovel Test	4770	negative	1093718	470200		0-50	
Shovel Test	4771	negative	1093722	470102		0-50	
Shovel Test	4772	negative	1093721	470002		0-50	
Shovel Test	4773	negative	1093823	470200		0-50	
Shovel Test	4774	negative	1093822	470302		0-50	
Shovel Test	4775	negative	1093826	470395		0-50	
Shovel Test	4776	negative	1093826	470492		0-50	
Shovel Test	4777	negative	1093825	470593		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4778	negative	1093823	470692		0-50	
Shovel Test	4779	negative	1093837	470786		0-50	
Shovel Test	4780	negative	1093832	470885		0-50	
Shovel Test	4782	negative	1093927	470855		0-50	
Shovel Test	4783	negative	1093926	470687		0-50	
Shovel Test	4784	negative	1093925	470593		0-50	
Shovel Test	4785	negative	1093921	470491		0-50	
Shovel Test	4786	negative	1093921	470395		0-50	
Shovel Test	4787	negative	1093923	470293		0-50	
Shovel Test	4788	negative	1093919	470196		0-50	
Shovel Test	4789	negative	1094018	470295		0-50	
Shovel Test	4790	negative	1094023	470394		0-50	
Shovel Test	4791	negative	1094027	470489		0-50	
Shovel Test	4792	negative	1094025	470589		0-50	
Shovel Test	4793	negative	1094020	470681		0-50	
Shovel Test	4794	negative	1094022	470786		0-50	
Shovel Test	4795	negative	1094124	470684		0-50	
Shovel Test	4796	negative	1094125	470583		0-50	
Shovel Test	4797	negative	1094113	470492		0-50	
Shovel Test	4798	negative	1094115	470387		0-50	
Shovel Test	4799	negative	1094122	470292		0-50	
Shovel Test	4800	negative	1094222	470392		0-50	
Shovel Test	4801	negative	1094222	470490		0-50	
Shovel Test	4802	negative	1094088	467341		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4803	negative	1094185	467340		0-50	
Shovel Test	4804	negative	1094190	467440		0-50	
Shovel Test	4805	negative	1094190	467544		0-50	
Shovel Test	4806	negative	1094184	467629		0-50	
Shovel Test	4807	negative	1094284	467734		0-50	
Shovel Test	4808	negative	1094308	467856		0-50	
Shovel Test	4809	negative	1094394	467928		0-50	
Shovel Test	4810	negative	1094388	468026		0-50	
Shovel Test	4811	negative	1094391	468129		0-50	
Shovel Test	4812	negative	1094390	468224		0-50	
Shovel Test	4813	negative	1094297	468230		0-50	
Shovel Test	4814	negative	1094301	468327		0-50	
Shovel Test	4815	negative	1094394	468317		0-50	
Shovel Test	4816	negative	1094387	468424		0-50	
Shovel Test	4817	negative	1094395	468516		0-50	
Shovel Test	4818	negative	1094398	468619		0-50	
Shovel Test	4819	negative	1094397	468712		0-50	
Shovel Test	4820	negative	1094496	468819		0-50	
Shovel Test	4821	negative	1094496	468911		0-50	
Shovel Test	4822	negative	1094476	469021		0-50	
Shovel Test	4823	negative	1094398	469112		0-50	
Shovel Test	4824	negative	1094500	469109		0-50	
Shovel Test	4825	negative	1094412	469207		0-50	
Shovel Test	4826	negative	1094497	469210		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4827	negative	1094500	469305		0-50	
Shovel Test	4828	negative	1094596	469303		0-50	
Shovel Test	4830	negative	1094503	469405		0-50	
Shovel Test	4831	negative	1094507	469501		0-50	
Shovel Test	4832	negative	1094608	469496		0-56	
Shovel Test	4833	negative	1094600	469601		0-50	
Shovel Test	4834	negative	1094504	469602		0-50	
Shovel Test	4835	negative	1094507	469701		0-50	
Shovel Test	4836	negative	1094505	469778		0-55	
Shovel Test	4837	negative	1094606	469893		0-50	
Shovel Test	4838	negative	1094608	469996		0-50	
Shovel Test	4839	negative	1094584	470093		0-50	
Shovel Test	4840	negative	1094611	470386		0-50	
Shovel Test	4841	negative	1094513	470488		0-50	
Shovel Test	4842	negative	1094414	470487		0-50	
Shovel Test	4843	negative	1094318	470491		0-50	
Shovel Test	4844	negative	1094220	470683		0-50	
Shovel Test	4845	negative	1094222	470760		0-50	
Shovel Test	4846	negative	1094126	470790		0-50	
Shovel Test	4847	negative	1094316	470585		0-50	
Shovel Test	4848	negative	1094418	470687		0-50	
Shovel Test	4849	negative	1094418	470585		0-50	
Shovel Test	4850	negative	1094517	470584		0-50	
Shovel Test	4851	negative	1094531	470659		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4852	negative	1094618	470592		0-50	
Shovel Test	4853	negative	1094708	470585		0-50	
Shovel Test	4854	negative	1094815	470581		0-50	
Shovel Test	4855	negative	1094921	470545		0-50	
Shovel Test	4856	negative	1095004	470479		0-50	
Shovel Test	4857	negative	1094908	470480		0-50	
Shovel Test	4858	negative	1094809	470483		0-50	
Shovel Test	4859	negative	1094709	470483		0-50	
Shovel Test	4860	negative	1094708	470386		0-50	
Shovel Test	4861	negative	1094812	470382		0-50	
Shovel Test	4862	negative	1094909	470366		0-50	
Shovel Test	4863	negative	1095002	470376		0-50	
Shovel Test	4864	negative	1095105	470382		0-50	
Shovel Test	4871	negative	1095404	470385		0-50	
Shovel Test	4872	negative	1095788	470273		0-50	
Shovel Test	4873	negative	1095997	470070		0-50	
Shovel Test	4874	negative	1096082	470092		0-50	
Shovel Test	4875	negative	1095994	469975		0-50	
Shovel Test	4876	negative	1096075	469972		0-50	
Shovel Test	4877	negative	1095993	469880		0-50	
Shovel Test	4878	negative	1096070	469883		0-50	
Shovel Test	4879	negative	1095989	469780		0-50	
Shovel Test	4880	negative	1095988	469689		0-50	
Shovel Test	4881	negative	1095981	469585		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4882	negative	1095985	469493		0-50	
Shovel Test	4883	negative	1095983	469385		0-50	
Shovel Test	4884	negative	1095887	469587		0-50	
Shovel Test	4885	negative	1095878	469686		0-50	
Shovel Test	4886	negative	1095882	469785		0-50	
Shovel Test	4887	negative	1095885	469885		0-50	
Shovel Test	4888	negative	1095896	469979		0-50	
Shovel Test	4889	negative	1095884	470075		0-50	
Shovel Test	4890	negative	1095886	470175		0-50	
Shovel Test	4891	negative	1095788	470172		0-60	
Shovel Test	4892	negative	1098097	464545		0-50	
Shovel Test	4893	negative	1094705	470192		0-50	
Shovel Test	4894	negative	1094710	470089		0-50	
Shovel Test	4895	negative	1094706	469989		0-50	
Shovel Test	4896	negative	1094809	469994		0-50	
Shovel Test	4897	negative	1094801	470087		0-50	
Shovel Test	4900	negative	1094708	469798		0-50	
Shovel Test	4901	negative	1094704	469693		0-42	
Shovel Test	4902	negative	1094708	469596		0-50	
Shovel Test	4903	negative	1094704	469495		0-50	
Shovel Test	4904	negative	1094690	469400		0-50	
Shovel Test	4905	negative	1094700	469306		0-50	
Shovel Test	4906	negative	1094689	469209		0-50	
Shovel Test	4907	negative	1094601	469214		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4908	negative	1094600	469108		0-50	
Shovel Test	4909	negative	1094700	469104		0-50	
Shovel Test	4910	negative	1094687	469015		0-50	
Shovel Test	4911	negative	1094597	469007		0-50	
Shovel Test	4912	negative	1094595	468912		0-33	
Shovel Test	4913	negative	1094602	468812		0-50	
Shovel Test	4914	negative	1094500	468708		0-50	
Shovel Test	4915	negative	1094600	468722		0-50	
Shovel Test	4916	negative	1094588	468608		0-50	
Shovel Test	4917	negative	1094498	468617		0-50	
Shovel Test	4918	negative	1094591	468516		0-50	
Shovel Test	4919	negative	1094508	468523		0-22	
Shovel Test	4920	negative	1094493	468415		0-50	
Shovel Test	4921	negative	1094495	468311		0-50	
Shovel Test	4922	negative	1094492	468222		0-50	
Shovel Test	4923	negative	1094490	468128		0-50	
Shovel Test	4924	negative	1094499	468031		0-50	
Shovel Test	4925	negative	1094482	467927		0-50	
Shovel Test	4926	negative	1094477	467829		0-50	
Shovel Test	4927	negative	1094388	467834		0-50	
Shovel Test	4928	negative	1094487	467731		0-50	
Shovel Test	4929	negative	1094395	467733		0-50	
Shovel Test	4930	negative	1094283	467638		0-50	
Shovel Test	4931	negative	1094288	467542		0-1	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4932	negative	1094286	467432		0-50	
Shovel Test	4933	negative	1094281	467339		0-50	
Shovel Test	4934	negative	1094275	467236		0-50	
Shovel Test	4935	negative	1098409	467527		0-50	
Shovel Test	4936	negative	1098324	467540		0-50	
Shovel Test	4937	negative	1098223	467546		0-50	
Shovel Test	4938	negative	1098123	467554		0-50	
Shovel Test	4939	negative	1098024	467551		0-50	
Shovel Test	4940	negative	1097926	467561		0-50	
Shovel Test	4941	negative	1097823	467572		0-50	
Shovel Test	4942	negative	1097729	467586		0-50	
Shovel Test	4943	negative	1097637	467574		0-50	
Shovel Test	4944	negative	1097539	467573		0-50	
Shovel Test	4945	negative	1097437	467584		0-50	
Shovel Test	4946	negative	1097343	467601		0-50	
Shovel Test	4947	negative	1097240	467609		0-50	
Shovel Test	4948	negative	1097139	467607		0-50	
Shovel Test	4949	negative	1097047	467608		0-50	
Shovel Test	4950	negative	1096940	467610		0-50	
Shovel Test	4961	negative	1096841	467599		0-50	
Shovel Test	4962	negative	1096741	467609		0-50	
Shovel Test	4963	negative	1096644	467612		0-25	
Shovel Test	4964	negative	1096651	467708		0-50	
Shovel Test	4965	negative	1096647	467812		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4966	negative	1096754	467803		0-50	
Shovel Test	4967	negative	1096747	467707		0-31	
Shovel Test	4968	negative	1096845	467681		0-50	
Shovel Test	4969	negative	1096941	467683		0-50	
Shovel Test	4970	negative	1097044	467678		0-50	
Shovel Test	4971	negative	1097148	467706		0-50	
Shovel Test	4972	negative	1097243	467705		0-50	
Shovel Test	4973	negative	1097342	467699		0-50	
Shovel Test	4974	negative	1097439	467694		0-50	
Shovel Test	4975	negative	1097534	467689		0-50	
Shovel Test	4976	negative	1097649	467685		0-50	
Shovel Test	4977	negative	1097735	467685		0-50	
Shovel Test	4978	negative	1097838	467668		0-50	
Shovel Test	4979	negative	1097934	467665		0-50	
Shovel Test	4980	negative	1098029	467658		0-50	
Shovel Test	4981	negative	1098132	467655		0-50	
Shovel Test	4982	negative	1098225	467644		0-50	
Shovel Test	4983	negative	1098323	467637		0-50	
Shovel Test	4984	negative	1093270	464495		0-50	
Shovel Test	4985	negative	1098292	464453		0-50	
Shovel Test	4986	negative	1098402	464438		0-50	
Shovel Test	4987	negative	1098489	464439		0-50	
Shovel Test	4988	negative	1098484	464540		0-50	
Shovel Test	4989	negative	1098390	464542		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	4990	negative	1098290	464539		0-50	
Shovel Test	4991	negative	1098194	464543		0-50	
No Dig Point	4992	no dig - pond	1094847	464678			
Shovel Test	4993	negative	1097995	464543		0-50	
Shovel Test	4994	negative	1097899	464551		0-50	
Shovel Test	4995	negative	1097799	464547		0-50	
Shovel Test	4996	negative	1097699	464545		0-50	
Shovel Test	4997	negative	1097603	464548		0-50	
Shovel Test	4998	negative	1097501	464549		0-50	
Surface Collection Point	5000	positive	1094725	467327	Isolated Find 7		
Surface Collection Point	5001	positive	1094769	467950	Isolated Find 6		
Surface Collection Point	5003	positive	1095693	468361	Isolated Find 5		
Shovel Test	5006	negative	1095673	468479		0-50	
Surface Collection Point	5007	positive	1094939	464996	Isolated Find 37		
Surface Collection Point	5008	positive	1095586	468832	40MD272		
Surface Collection Point	5009	positive	1095578	468747	40MD272		
Surface Collection Point	5010	positive	1095609	468814	40MD272		

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Surface Collection Point	5011	positive	1095720	468703	40MD272		
Surface Collection Point	5012	positive	1095487	468745	40MD272		
Surface Collection Point	5013	positive	1095351	468769	40MD272		
Surface Collection Point	5014	positive	1095040	469217	Isolated Find 28		
Shovel Test	5015	negative	1094410	469594		0-50	
Shovel Test	5016	negative	1095455	469493		0-50	
Shovel Test	5017	negative	1096023	463784		0-50	
Shovel Test	5018	negative	1094680	467259		0-50	
Shovel Test	5019	negative	1095524	469493		0-50	
Surface Collection Point	5020	positive	1098071	462821	Isolated Find 19		
Shovel Test	5021	negative	1097875	462283		0-50	
Shovel Test	5022	positive	1097582	462777	Isolated Find 32	0-25	
Shovel Test	5023	negative	1096606	463285		0-50	
Shovel Test	5024	negative	1097890	463460		0-50	
Surface Collection Point	5025	positive	1098962	461831	Isolated Find 23		
Surface Collection Point	5026	positive	1096296	462668	40MD276		
No Dig Point	5028	no dig - paved road	1094350	464327	40MD271		

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	5030	negative	1094341	466648		0-50	
Shovel Test	5031	negative	1094312	466648		0-50	
Shovel Test	5032	negative	1094381	466677		0-50	
Shovel Test	5033	negative	1094382	466709		0-50	
Shovel Test	5034	negative	1094409	466642		0-50	
Shovel Test	5035	negative	1094440	466644		0-50	
Shovel Test	5036	negative	1094377	466615		0-50	
Shovel Test	5037	negative	1094377	466582		0-50	
Shovel Test	5039	negative	1094509	466941		0-50	
Shovel Test	5040	negative	1094548	466943		0-50	
Shovel Test	5041	negative	1094576	466973		0-50	
Shovel Test	5042	negative	1094573	467000		0-50	
Shovel Test	5043	negative	1094569	466879		0-50	
Shovel Test	5044	negative	1094605	466940		0-54	
Shovel Test	5045	negative	1094640	466940		0-50	
Shovel Test	5046	negative	1094570	466912		0-50	
Shovel Test	5048	negative	1094679	467293		0-50	
Shovel Test	5049	negative	1094677	467352		0-50	
Shovel Test	5050	negative	1094750	467295		0-50	
Shovel Test	5051	negative	1094720	467295		0-50	
Shovel Test	5052	negative	1094679	467388		0-50	
Shovel Test	5053	negative	1094785	467293		0-50	
Shovel Test	5054	negative	1094684	467197		0-50	
Shovel Test	5055	negative	1094684	467170		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	5056	negative	1094644	467293		0-50	
Shovel Test	5057	negative	1094595	467294		0-50	
Shovel Test	5058	negative	1094547	467291		0-53	
Shovel Test	5059	negative	1094775	468055		0-50	
Shovel Test	5060	negative	1094776	468089		0-50	
Shovel Test	5061	negative	1094748	468028		0-50	
Shovel Test	5062	negative	1094721	468027		0-50	
Shovel Test	5064	negative	1095419	469492		0-50	
Shovel Test	5065	negative	1094824	468021		0-50	
Shovel Test	5066	negative	1094856	468023		0-50	
Shovel Test	5067	negative	1094778	467995		0-50	
Shovel Test	5068	negative	1094787	467960		0-50	
Shovel Test	5070	negative	1095489	469523		0-50	
Shovel Test	5071	negative	1095489	469555		0-50	
Shovel Test	5072	negative	1095492	469463		0-50	
Shovel Test	5073	negative	1095492	469429		0-50	
Shovel Test	5074	negative	1095557	469495		0-50	
Shovel Test	5075	negative	1095581	468840	40MD272	0-50	
Shovel Test	5076	negative	1095584	468874		0-50	
Shovel Test	5077	negative	1095611	468804	40MD272	0-50	
Shovel Test	5078	negative	1095649	468805	40MD272	0-50	
Shovel Test	5079	negative	1095554	468802	40MD272	0-50	
Shovel Test	5080	negative	1095523	468803	40MD272	0-50	
Shovel Test	5081	negative	1095583	468768	40MD272	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	5082	negative	1095586	468727	40MD272	0-50	
Shovel Test	5085	negative	1095551	468114		0-50	
Shovel Test	5086	negative	1095518	468113		0-50	
Shovel Test	5087	negative	1095588	468076		0-50	
Shovel Test	5088	negative	1095584	468041		0-50	
Shovel Test	5089	negative	1095618	468115		0-50	
Shovel Test	5090	negative	1095644	468112		0-50	
Shovel Test	5091	negative	1095585	468147		0-50	
Shovel Test	5092	negative	1095582	468184		0-50	
Shovel Test	5093	negative	1095679	468362		0-50	
Shovel Test	5094	negative	1095677	468443		0-50	
Shovel Test	5095	negative	1095675	468283		0-50	
Shovel Test	5096	negative	1095673	468251		0-50	
Shovel Test	5097	negative	1095645	468364		0-50	
Shovel Test	5098	negative	1095608	468364		0-50	
Shovel Test	5099	negative	1095573	468361		0-50	
Shovel Test	5100	negative	1095718	468363		0-50	
Shovel Test	5101	negative	1095741	468365		0-50	
Shovel Test	5102	negative	1095775	468364		0-50	
Shovel Test	5103	negative	1095023	469201		0-50	
Shovel Test	5104	negative	1095053	469196		0-50	
Shovel Test	5105	negative	1095024	469235		0-50	
Shovel Test	5106	negative	1095023	469276		0-50	
Shovel Test	5107	negative	1095022	469169		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	5108	negative	1095023	469135		0-50	
Shovel Test	5109	negative	1094966	469199		0-50	
Shovel Test	5110	negative	1093983	466883		0-50	
Shovel Test	5111	negative	1093983	466916		0-50	
Shovel Test	5112	negative	1093982	466979		0-50	
Shovel Test	5113	negative	1093984	467022		0-50	
Shovel Test	5115	negative	1093987	466816		0-50	
Shovel Test	5116	negative	1093980	466786		0-50	
Shovel Test	5117	negative	1094018	466843		0-50	
Shovel Test	5118	negative	1094055	466841		0-50	
Shovel Test	5119	negative	1094032	467729		0-50	
Shovel Test	5120	negative	1094064	467731		0-50	
Shovel Test	5121	positive	1093961	467730	40MD269	0-50	
Shovel Test	5122	negative	1093931	467734	40MD269	0-50	
Shovel Test	5124	positive	1093894	467768	40MD269	0-50	
Shovel Test	5125	negative	1093893	467802	40MD269	0-50	
Shovel Test	5126	negative	1093898	467709	40MD269	0-50	
Shovel Test	5127	negative	1093896	467677	40MD269	0-50	
Shovel Test	5128	negative	1093864	467737	40MD269	0-50	
Shovel Test	5129	positive	1093828	467737	40MD269	0-50	
Shovel Test	5130	negative	1093762	467737		0-50	
Shovel Test	5131	negative	1093727	467732		0-50	
Shovel Test	5132	negative	1094200	468059		0-50	
Shovel Test	5133	negative	1094204	468097		0-51	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	5134	negative	1094200	468005		0-50	
Shovel Test	5135	negative	1094198	467976		0-50	
Shovel Test	5136	negative	1094164	468028		0-50	
Shovel Test	5137	negative	1094130	468031		0-50	
Shovel Test	5138	negative	1094228	468029		0-50	
Shovel Test	5139	negative	1094261	468031		0-50	
Shovel Test	5140	negative	1094293	468031		0-50	
Shovel Test	5141	negative	1094295	468124		0-50	
Shovel Test	5142	negative	1094293	467926		0-50	
Shovel Test	5143	negative	1093707	468170		0-50	
Shovel Test	5144	negative	1093705	468205		0-50	
Shovel Test	5145	negative	1093739	468126		0-50	
Shovel Test	5146	negative	1093770	468129		0-50	
Shovel Test	5147	negative	1093709	468101		0-50	
Shovel Test	5148	negative	1093704	468067		0-50	
Shovel Test	5149	negative	1093672	468131		0-50	
Shovel Test	5150	negative	1093642	468136		0-50	
Shovel Test	5151	negative	1098963	461834		0-50	
Shovel Test	5152	positive	1098961	461856	Isolated Find 23	0-50	
Shovel Test	5153	negative	1098956	461916		0-50	
Shovel Test	5154	negative	1098960	461804		0-50	
Shovel Test	5155	negative	1098927	461832		0-50	
Shovel Test	5156	negative	1098880	461836		0-50	
Shovel Test	5157	negative	1098998	461826		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	5158	negative	1099032	461825		0-50	
Shovel Test	5159	positive	1095098	464425	40MD268	0-50	
Shovel Test	5160	negative	1095098	464448	40MD268	0-50	
Shovel Test	5161	negative	1095098	464471	40MD268	0-50	
Shovel Test	5162	negative	1095070	464424	40MD268	0-50	
Shovel Test	5163	negative	1095037	464425	40MD268	0-50	
Shovel Test	5164	positive	1095091	464396	40MD268	0-50	
Shovel Test	5165	positive	1095084	464359	40MD268	0-50	
Shovel Test	5166	positive	1095127	464425	40MD268	0-52	
Shovel Test	5167	positive	1095161	464423	40MD268	0-54	
Shovel Test	5168	positive	1095079	464320	40MD268	0-52	
No Dig Point	5169	no dig - paved road	1095079	464290	40MD268		
Shovel Test	5170	positive	1095198	464426	40MD268	0-50	
Shovel Test	5171	positive	1095240	464424	40MD268	0-50	
Shovel Test	5172	negative	1095279	464422	40MD268	0-50	
Shovel Test	5173	negative	1095319	464422	40MD268	0-50	
Shovel Test	5174	negative	1099996	464132	NSCR 5	0-50	
Shovel Test	5175	positive	1100025	464132	NSCR 5	0-70	
Shovel Test	5176	negative	1100086	464132	NSCR 5	0-50	
Shovel Test	5177	negative	1100114	464131		0-50	
Shovel Test	5178	negative	1099997	464170		0-50	
Shovel Test	5179	negative	1099997	464211		0-50	
Shovel Test	5180	negative	1099997	464101	NSCR 5	0-50	
Shovel Test	5181	negative	1099995	464066		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	5182	negative	1099929	464133	NSCR 5	0-50	
Shovel Test	5183	negative	1099899	464132		0-50	
Shovel Test	5188	negative	1092080	463521		0-50	
Shovel Test	5189	negative	1090797	463144		0-50	
Shovel Test	5190	negative	1090695	462943		0-50	
Shovel Test	5191	negative	1093527	470004		0-44	
Shovel Test	5192	negative	1093623	470001		0-50	
Shovel Test	5193	negative	1093926	470788		0-50	
No Dig Point	5194	no dig - ravine, slope	1094613	470485			
Shovel Test	5195	negative	1094717	470293		0-50	
No Dig Point	5196	no dig - ravine, creek bed	1094609	470287			
Shovel Test	5197	negative	1094697	469891		0-50	
Shovel Test	5198	negative	1094814	469891		0-50	
Shovel Test	5199	negative	1094795	469792		0-50	
Shovel Test	5200	negative	1097407	464548		0-50	
Shovel Test	5201	negative	1097306	464549		0-50	
Shovel Test	5202	negative	1097204	464557		0-50	
Shovel Test	5203	negative	1097109	464554		0-1	
Shovel Test	5204	negative	1097010	464556		0-50	
Shovel Test	5205	negative	1096917	464557		0-1	
Shovel Test	5206	negative	1097110	464654		0-50	
Shovel Test	5207	negative	1097212	464649		0-30	
Shovel Test	5208	negative	1097306	464652		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	5209	negative	1097407	464650		0-50	
Shovel Test	5210	negative	1097506	464650		0-50	
Shovel Test	5211	negative	1097602	464646		0-35	
Shovel Test	5212	negative	1097706	464649		0-50	
Shovel Test	5213	negative	1097803	464646		0-50	
Shovel Test	5214	negative	1097900	464644		0-50	
Shovel Test	5215	negative	1097997	464645		0-50	
Shovel Test	5216	negative	1098095	464643		0-50	
Shovel Test	5217	negative	1098191	464643		0-50	
Shovel Test	5218	negative	1098294	464645		0-50	
Shovel Test	5219	negative	1098389	464636		0-50	
Shovel Test	5220	negative	1098491	464639		0-50	
Shovel Test	5221	negative	1098494	464739		0-50	
Shovel Test	5222	negative	1098394	464740		0-50	
Shovel Test	5223	negative	1098293	464740		0-50	
Shovel Test	5224	negative	1098200	464736		0-50	
Shovel Test	5225	negative	1098098	464742		0-50	
Shovel Test	5226	negative	1097998	464740		0-50	
Shovel Test	5227	negative	1097902	464740		0-50	
Shovel Test	5228	negative	1097802	464743		0-50	
Shovel Test	5229	negative	1097705	464743		0-50	
Shovel Test	5230	negative	1097698	464822		0-40	
Shovel Test	5231	negative	1097591	464835		0-50	
Shovel Test	5232	negative	1097605	464751		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	5233	negative	1097510	464748		0-50	
Shovel Test	5234	negative	1097506	464845		0-50	
Shovel Test	5235	negative	1097414	464839		0-50	
Shovel Test	5236	negative	1097407	464748		0-50	
Shovel Test	5237	negative	1097313	464747		0-50	
Shovel Test	5555	negative	1097573	461627		0-50	
Shovel Test	5557	negative	1092991	463711		0-36	
Shovel Test	5575	negative	1094939	464998		0-50	
Shovel Test	5586	negative	1091232	462805		0-50	
No Dig Point	5600	no dig - ravine, creek bed	1094611	470186			
Shovel Test	5601	negative	1097190	462780		0-50	
Shovel Test	5602	negative	1096964	463409	40MD279	0-50	
Shovel Test	5603	negative	1096926	463391	40MD279	0-30	
Shovel Test	5605	negative	1096416	462705	40MD276	0-50	
Shovel Test	5606	negative	1096361	462731	40MD276	0-50	
Shovel Test	5607	negative	1096352	462647	40MD276	0-50	
Shovel Test	5608	negative	1096203	462623	40MD276	0-50	
Shovel Test	5609	negative	1096048	462636		0-50	
Shovel Test	5610	negative	1096085	462659		0-50	
Shovel Test	5611	negative	1096200	462719	40MD276	0-50	
Shovel Test	5612	negative	1096260	462744	40MD276	0-50	
Surface Inspection Area	5613	positive	1096337	462720	40MD276		

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	5614	negative	1097063	463442	40MD279	0-50	
Shovel Test	5615	negative	1097117	463527	40MD279	0-50	
Shovel Test	5616	negative	1096907	463518	40MD279	0-50	
Shovel Test	5617	negative	1096855	463569	40MD279	0-50	
Shovel Test	5618	negative	1096845	463498	40MD279	0-50	
Shovel Test	5620	negative	1100255	464060		0-50	
Shovel Test	5621	negative	1100317	464065		0-50	
Shovel Test	5622	negative	1100257	464101		0-50	
Shovel Test	5623	negative	1100222	464023		0-15	
Shovel Test	5624	negative	1100193	464026		0-50	
Shovel Test	5625	negative	1093196	462726		0-50	
Shovel Test	5626	negative	1093142	462684		0-32	
Shovel Test	5627	negative	1093155	462781		0-50	
Shovel Test	5700	negative	1096028	472364		0-50	
Shovel Test	5701	negative	1096034	472458		0-50	
No Dig Point	5702	no dig - gravelled area	1096045	472574			
Shovel Test	6000	positive	1094095	464189	40MD277	0-50	
Shovel Test	6001	positive	1094129	464189	40MD277	0-50	
Shovel Test	6002	positive	1094064	464218	40MD277	0-50	
Shovel Test	6003	positive	1094063	464251	40MD277	0-56	
Shovel Test	6004	negative	1094027	464191	40MD277	0-50	
Shovel Test	6005	negative	1093993	464191		0-50	
Shovel Test	6006	positive	1094058	464156	40MD277	0-50	
Shovel Test	6007	negative	1094055	464127	40MD277	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	6008	positive	1094190	464187	40MD277	0-50	
Shovel Test	6009	positive	1094222	464187	40MD277	0-50	
Shovel Test	6010	negative	1094286	464188	40MD277	0-50	
Shovel Test	6011	negative	1094320	464189		0-50	
Shovel Test	6012	positive	1093536	464196	40MD278	0-50	
Shovel Test	6013	negative	1093502	464198	40MD278	0-37	
Shovel Test	6014	positive	1093594	464192	40MD278	0-50	
Shovel Test	6015	positive	1093622	464195	40MD278	0-50	
Shovel Test	6016	negative	1093689	464194	40MD278	0-50	
Shovel Test	6017	negative	1093725	464195	40MD278	0-50	
Shovel Test	6018	positive	1093660	464237	40MD278	0-50	
Shovel Test	6019	negative	1093663	464269	40MD278	0-50	
Shovel Test	6020	positive	1093658	464164	40MD278	0-50	
Shovel Test	6021	negative	1093660	464133	40MD278	0-50	
Shovel Test	6022	negative	1093239	464105		0-50	
Shovel Test	6023	negative	1093200	464101		0-60	
Shovel Test	6024	negative	1093168	464074		0-40	
Shovel Test	6025	negative	1093169	464038		0-65	
Shovel Test	6026	negative	1093177	464123		0-50	
Shovel Test	6027	negative	1093182	464163		0-50	
Shovel Test	6028	negative	1093461	463933		0-50	
Shovel Test	6029	negative	1093461	463969		0-50	
Shovel Test	6030	negative	1093459	463869		0-50	
Shovel Test	6031	negative	1093456	463834		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	6032	negative	1093422	463900		0-50	
Shovel Test	6033	negative	1093391	463898		0-50	
Shovel Test	6034	negative	1093483	463899		0-50	
Shovel Test	6035	negative	1093518	463901		0-50	
Shovel Test	6036	negative	1096083	470628		0-50	
Shovel Test	6037	negative	1096081	470660		0-50	
Shovel Test	6038	negative	1096081	470564		0-50	
Shovel Test	6039	negative	1096078	470531		0-50	
Shovel Test	6040	negative	1096109	470596		0-50	
Shovel Test	6041	negative	1096061	470598		0-50	
Shovel Test	6042	negative	1093752	467247	MDB002	0-50	
Shovel Test	6043	negative	1093721	467238	MDB002	0-50	
Shovel Test	6044	negative	1093822	467244	MDB002	0-50	
Shovel Test	6045	negative	1093862	467241		0-50	
No Dig Point	6114	no dig - pond	1096314	463673			
Shovel Test	6200	negative	1096901	463762		0-50	
Shovel Test	6201	negative	1097003	463773		0-50	
Shovel Test	6202	negative	1097107	463768		0-50	
Shovel Test	6203	negative	1096808	463770		0-50	
Shovel Test	6204	negative	1096707	463771		0-50	
Shovel Test	6205	negative	1096615	463774		0-50	
Shovel Test	6206	negative	1096512	463776		0-50	
Shovel Test	6207	negative	1096417	463774		0-50	
Shovel Test	6208	negative	1096314	463787		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	6209	negative	1096416	463673		0-50	
Shovel Test	6210	negative	1096317	463578		0-50	
Shovel Test	6211	negative	1096209	463670		0-50	
Shovel Test	6212	negative	1096113	463682		0-50	
Shovel Test	6213	negative	1096017	463682		0-50	
Shovel Test	6214	negative	1096511	463677		0-50	
Shovel Test	6215	negative	1096608	463672		0-50	
Shovel Test	6216	negative	1096708	463671		0-50	
No Dig Point	6217	no dig - ravine	1090204	463338			
Shovel Test	6218	negative	1096805	463673		0-50	
Shovel Test	6219	negative	1096905	463669		0-50	
Shovel Test	6220	negative	1090991	462750		0-50	
Shovel Test	6221	negative	1090214	463447		0-50	
Shovel Test	6222	negative	1090301	463451		0-50	
Shovel Test	6223	negative	1090407	463447		0-50	
Shovel Test	6224	negative	1090503	463448		0-50	
Shovel Test	6225	negative	1090605	463440		0-50	
Shovel Test	6226	negative	1090704	463439		0-50	
Shovel Test	6227	negative	1090800	463439		0-50	
Shovel Test	6228	negative	1090796	463529		0-50	
Shovel Test	6229	negative	1094947	464975		0-50	
Shovel Test	6230	negative	1095050	464733		0-50	
Shovel Test	6231	negative	1095253	465069		0-50	
Shovel Test	6232	negative	1096202	466527		0-55	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	6233	negative	1096195	466493		0-50	
Shovel Test	6234	negative	1096191	466460		0-50	
Shovel Test	6235	negative	1096225	466526		0-50	
Shovel Test	6236	negative	1096273	466528		0-50	
Shovel Test	6237	negative	1096201	466565		0-50	
Shovel Test	6238	negative	1096201	466606		0-50	
Shovel Test	6239	negative	1096167	466531		0-50	
Shovel Test	6240	negative	1096109	466532		0-50	
Shovel Test	6241	negative	1096079	466537		0-50	
Shovel Test	6242	negative	1095751	466539		0-50	
Shovel Test	6243	negative	1096306	466527		0-50	
Shovel Test	6244	negative	1098447	462419		0-52	
Surface Collection Point	6800	positive	1096129	466127	40MD273		
Surface Collection Point	7000	positive	1095829	462899	Isolated Find 26		
Surface Collection Point	7001	positive	1096595	462910	Isolated Find 13		
No Dig Point	7002	no dig - culvert, slope	1095108	470464			
No Dig Point	7003	no dig - creek bed	1094323	470678			
No Dig Point	7004	no dig - slope, creek bed	1094218	470584			
No Dig Point	7005	no dig - pond	1093880	466163			
No Dig Point	7006	no dig - pond	1091775	462640			
No Dig Point	7007	no dig - slope pond	1091776	462732			

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
No Dig Point	7008	no dig - creek, slope	1094605	469399			
No Dig Point	7009	no dig - slope	1095201	470384			
No Dig Point	7010	no dig - slope	1095297	470376			
No Dig Point	7011	no dig - slope	1095682	470175			
Shovel Test	7012	negative	1098424	467635		0-50	
Shovel Test	7100	negative	1098743	465219		0-50	
Shovel Test	7101	negative	1098742	465308		0-50	
Shovel Test	7102	negative	1098735	465403		0-51	
Shovel Test	7103	negative	1098721	465508		0-50	
Shovel Test	7104	negative	1098726	465572		0-50	
Shovel Test	7105	negative	1098792	465615		0-51	
Shovel Test	7106	negative	1098791	465517		0-50	
Shovel Test	7107	negative	1098796	465423		0-50	
Shovel Test	7108	negative	1098792	465324		0-50	
Shovel Test	7109	negative	1098797	465226		0-50	
Shovel Test	7110	negative	1098891	465326		0-50	
Shovel Test	7111	negative	1098894	465414		0-50	
Shovel Test	7112	negative	1098893	465516		0-50	
Shovel Test	7113	negative	1098994	465423		0-50	
Shovel Test	7114	negative	1099084	465384		0-50	
Shovel Test	7115	negative	1099186	465385		0-20	
Shovel Test	7116	negative	1099386	465314		0-50	
Shovel Test	7117	negative	1099484	465309		0-50	
Shovel Test	7118	negative	1099584	465318		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7119	negative	1099583	465212		0-50	
Shovel Test	7120	negative	1099580	465110		0-50	
Shovel Test	7121	negative	1099577	465018		0-51	
Shovel Test	7122	negative	1099557	464923		0-50	
Shovel Test	7123	negative	1099479	464918		0-50	
Shovel Test	7124	negative	1099483	465022		0-51	
Shovel Test	7125	negative	1099481	465116		0-51	
Shovel Test	7126	negative	1099485	465223		0-50	
Shovel Test	7127	negative	1099380	465206		0-50	
Shovel Test	7128	negative	1099382	465122		0-50	
Shovel Test	7129	negative	1099379	465020		0-50	
Shovel Test	7130	negative	1099378	464924		0-51	
No Dig Point	7131	no dig - pond	1099278	464909			
Shovel Test	7132	negative	1099287	465034		0-50	
Shovel Test	7133	negative	1099286	465120		0-50	
Shovel Test	7134	negative	1099281	465225		0-50	
Shovel Test	7135	negative	1099183	465021		0-50	
No Dig Point	7136	no dig - pond	1099191	464922			
Shovel Test	7137	negative	1098995	465612		0-50	
Shovel Test	7138	negative	1098891	465616		0-50	
Shovel Test	7139	negative	1098991	465517		0-50	
Shovel Test	7140	negative	1099089	465611		0-51	
Shovel Test	7141	negative	1099090	465516		0-50	
Shovel Test	7142	negative	1099186	465584		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7143	negative	1099191	465514		0-50	
Shovel Test	7144	negative	1099288	465584		0-49	
Shovel Test	7145	negative	1099284	465516		0-50	
Shovel Test	7146	negative	1099288	465421		0-50	
Shovel Test	7147	negative	1099387	465415		0-50	
Shovel Test	7148	negative	1099385	465514		0-32	
Shovel Test	7149	negative	1099483	465514		0-50	
Shovel Test	7150	negative	1099482	465415		0-50	
Shovel Test	7151	negative	1099581	465414		0-50	
Shovel Test	7152	negative	1099584	465514		0-50	
Shovel Test	7153	negative	1099641	465510		0-50	
Shovel Test	7154	negative	1098878	464339		0-50	
Shovel Test	7155	negative	1098980	464333		0-50	
Shovel Test	7156	negative	1099082	464338		0-50	
Shovel Test	7157	negative	1099178	464334		0-50	
Shovel Test	7158	negative	1099276	464327		0-50	
Shovel Test	7159	negative	1099376	464327		0-50	
Shovel Test	7160	negative	1099471	464334		0-50	
Shovel Test	7161	negative	1099570	464310		0-51	
Shovel Test	7162	negative	1099659	464303		0-50	
Shovel Test	7163	negative	1099768	464297		0-50	
Shovel Test	7164	negative	1099859	464290		0-50	
Shovel Test	7165	negative	1099969	464287		0-50	
Shovel Test	7166	negative	1100362	464224		0-51	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7167	negative	1100460	464225		0-50	
Shovel Test	7168	negative	1100555	464216		0-50	
Shovel Test	7169	negative	1100623	464232		0-50	
Shovel Test	7170	negative	1100452	464124		0-50	
Shovel Test	7171	negative	1100355	464125		0-50	
Shovel Test	7172	negative	1100257	464130		0-50	
Shovel Test	7173	positive	1100254	464022	Isolated Find 34	0-50	
Shovel Test	7174	negative	1100162	464030		0-50	
Shovel Test	7175	negative	1100353	464022		0-50	
Shovel Test	7176	negative	1100260	463929		0-50	
Shovel Test	7177	negative	1100156	463930		0-50	
Shovel Test	7178	negative	1100102	463821		0-50	
Shovel Test	7179	negative	1100008	463737		0-50	
Shovel Test	7180	negative	1099068	463351		0-50	
Shovel Test	7181	negative	1098863	462664		0-52	
Shovel Test	7182	negative	1098861	462566		0-50	
Shovel Test	7183	negative	1098763	462567		0-50	
Shovel Test	7184	negative	1098861	462467		0-50	
Shovel Test	7185	negative	1098960	462466		0-50	
Shovel Test	7200	negative	1098570	461577		0-50	
Shovel Test	7201	negative	1098465	461585		0-50	
Shovel Test	7202	negative	1098369	461594		0-50	
Shovel Test	7203	negative	1098270	461690		0-50	
Shovel Test	7204	negative	1098173	461789		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7205	negative	1098089	461885		0-50	
Shovel Test	7206	negative	1097983	461983		0-50	
Shovel Test	7207	negative	1097888	461992		0-50	
Shovel Test	7208	negative	1097977	462084		0-50	
Shovel Test	7209	negative	1097879	462077		0-50	
Shovel Test	7210	negative	1097780	462010		0-50	
Shovel Test	7211	negative	1097776	462083		0-50	
Shovel Test	7212	negative	1097676	462087		0-50	
Shovel Test	7213	negative	1097583	462090		0-50	
Shovel Test	7214	negative	1097485	462096		0-50	
Shovel Test	7215	negative	1097586	462180		0-50	
Shovel Test	7216	negative	1097493	462186		0-50	
Shovel Test	7217	negative	1097479	462279		0-50	
Shovel Test	7218	negative	1097483	462375		0-50	
Shovel Test	7219	negative	1097484	462480		0-50	
Shovel Test	7220	negative	1097383	462476		0-50	
Shovel Test	7221	negative	1097385	462383		0-50	
Shovel Test	7222	negative	1097382	462285		0-50	
Shovel Test	7223	negative	1097382	462571		0-50	
Shovel Test	7224	negative	1097386	462674		0-50	
Shovel Test	7225	negative	1097285	462678		0-50	
Shovel Test	7226	negative	1097294	462577		0-50	
Shovel Test	7227	negative	1097293	462485		0-50	
Shovel Test	7228	negative	1097292	462409		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7229	negative	1097193	462478		0-50	
Shovel Test	7230	negative	1097184	462579		0-50	
Shovel Test	7231	negative	1097195	462674		0-50	
Shovel Test	7233	negative	1097369	461634		0-50	
Shovel Test	7234	negative	1097479	461627		0-50	
Shovel Test	7235	negative	1097666	461618		0-50	
Shovel Test	7236	negative	1097773	461618		0-50	
Shovel Test	7237	negative	1097870	461618		0-50	
Shovel Test	7238	negative	1097976	461604		0-50	
Shovel Test	7239	negative	1098075	461603		0-50	
Shovel Test	7240	negative	1098174	461598		0-50	
Shovel Test	7241	negative	1098059	461685		0-50	
Shovel Test	7242	negative	1097965	461683		0-50	
Shovel Test	7243	negative	1097866	461690		0-50	
Shovel Test	7244	negative	1097774	461691		0-50	
Shovel Test	7245	negative	1097668	461696		0-50	
Shovel Test	7246	negative	1097575	461692		0-50	
Shovel Test	7247	negative	1097672	461793		0-0	0-227
Shovel Test	7248	negative	1097778	461885		0-50	
Shovel Test	7249	negative	1097675	461888		0-50	
Shovel Test	7250	negative	1097574	461991		0-50	
Shovel Test	7251	negative	1097476	461992		0-50	
Shovel Test	7252	negative	1097374	461990		0-50	
Shovel Test	7253	negative	1097282	462093		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7254	negative	1097194	462207		0-50	
Shovel Test	7255	negative	1097184	462286		0-50	
Shovel Test	7256	negative	1097085	462294		0-50	
Shovel Test	7257	negative	1097089	462389		0-50	
No Dig Point	7261	no dig - slope, erosion	1095807	462502			
Shovel Test	7262	negative	1096210	462985		0-50	
Shovel Test	7263	negative	1096113	462888		0-50	
Shovel Test	7264	negative	1096211	462885		0-50	
Shovel Test	7265	negative	1096012	462887	NSCR 3	0-50	
Shovel Test	7266	negative	1095913	462893		0-50	
Shovel Test	7267	negative	1095913	462696		0-50	
Shovel Test	7268	negative	1095713	462602		0-50	
No Dig Point	7269	no dig - slope, erosion	1095811	462598			
Shovel Test	7270	negative	1095685	462508		0-50	
Shovel Test	7271	negative	1095608	462307		0-50	
Shovel Test	7272	negative	1095515	462306		0-50	
No Dig Point	7273	no dig - slope, erosion	1095710	462304			
Shovel Test	7274	negative	1095810	462310		0-50	
Shovel Test	7275	negative	1095904	462299		0-50	
Shovel Test	7276	negative	1095813	462399		0-50	
Shovel Test	7277	negative	1096211	462781		0-50	
Shovel Test	7278	negative	1096305	462891		0-50	
Shovel Test	7279	negative	1096407	462884		0-50	
Shovel Test	7280	negative	1096504	462889		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7281	negative	1096501	462785		0-50	
Shovel Test	7282	negative	1096502	462688		0-50	
Shovel Test	7283	negative	1096602	462681		0-50	
Shovel Test	7284	negative	1096499	462588		0-50	
Shovel Test	7285	negative	1096305	462499		0-50	
Shovel Test	7286	negative	1096203	462500		0-50	
No Dig Point	7287	no dig - slope, erosion	1096498	462493			
Shovel Test	7288	negative	1096595	462487		0-50	
Shovel Test	7289	negative	1096698	462486		0-50	
Shovel Test	7290	negative	1096794	462485		0-50	
Shovel Test	7291	negative	1096896	462492		0-50	
Shovel Test	7292	negative	1096899	462585		0-50	
Shovel Test	7293	negative	1096799	462586		0-50	
Shovel Test	7294	negative	1096800	462690		0-50	
Shovel Test	7295	negative	1097774	461790		0-50	
Shovel Test	7296	negative	1097874	461787		0-50	
Shovel Test	7297	negative	1097967	461787		0-50	
Shovel Test	7300	negative	1093201	463706	NSCR 4	0-50	
Shovel Test	7301	negative	1093239	463705		0-50	
Shovel Test	7302	negative	1093160	463665	NSCR 4	0-50	
Shovel Test	7304	negative	1093162	463631	NSCR 4	0-53	
Shovel Test	7305	negative	1093132	463708	NSCR 4	0-50	
Shovel Test	7306	negative	1093166	463749		0-50	
Shovel Test	7307	negative	1093172	463774		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7308	negative	1093095	463707	NSCR 4	0-50	
Shovel Test	7309	negative	1093029	463711	NSCR 4	0-50	
Shovel Test	7310	negative	1093415	468435		0-50	
Shovel Test	7311	negative	1093411	468331		0-50	
Shovel Test	7312	negative	1093410	468231		0-50	
Shovel Test	7313	negative	1093412	468142		0-50	
Shovel Test	7314	negative	1093405	468038		0-50	
Shovel Test	7315	negative	1093506	468040		0-50	
Shovel Test	7316	negative	1093506	467931		0-50	
Shovel Test	7317	negative	1093411	467932		0-50	
Shovel Test	7318	negative	1093308	467938		0-50	
Shovel Test	7319	negative	1093311	468039		0-50	
Shovel Test	7320	negative	1093312	468134		0-50	
Shovel Test	7321	negative	1093313	468235		0-1	
Shovel Test	7322	negative	1093318	468331		0-50	
Shovel Test	7323	negative	1093326	468436		0-50	
Shovel Test	7411	negative	1094977	464993		0-50	
Shovel Test	7412	negative	1095012	464991		0-50	
Shovel Test	7413	negative	1094944	465022		0-50	
Shovel Test	7414	negative	1094939	465055		0-50	
Shovel Test	7415	negative	1094905	464998		0-50	
Shovel Test	7416	negative	1094868	465003		0-50	
Shovel Test	7417	negative	1094946	464935		0-50	
Shovel Test	7500	negative	1095716	463053	NSCR 3	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7501	negative	1095717	463024	NSCR 3	0-50	
Shovel Test	7502	negative	1095682	463090	NSCR 3	0-50	
Shovel Test	7503	negative	1095645	463092	NSCR 3	0-50	
Shovel Test	7504	negative	1095749	463090	NSCR 3	0-50	
Shovel Test	7505	negative	1095782	463089	NSCR 3	0-50	
Shovel Test	7506	negative	1095719	463130	NSCR 3	0-55	
Shovel Test	7507	negative	1095717	463158	NSCR 3	0-50	
Shovel Test	7508	negative	1096888	461651		0-50	
Shovel Test	7509	negative	1096786	461653		0-50	
Shovel Test	7510	negative	1094532	461854		0-50	
Shovel Test	7511	negative	1094531	461891		0-50	
Shovel Test	7512	negative	1094494	461821		0-50	
Shovel Test	7513	negative	1094462	461820		0-50	
Shovel Test	7514	negative	1094560	461818		0-50	
Shovel Test	7515	negative	1096039	462598		0-50	
Shovel Test	7516	negative	1094590	461818		0-50	
Shovel Test	7517	negative	1094527	461803		0-50	
Shovel Test	7518	negative	1094530	461774		0-50	
Shovel Test	7519	negative	1096235	462689	40MD276	0-50	
Shovel Test	7520	negative	1096070	462603		0-50	
Shovel Test	7521	negative	1096138	462694		0-50	
Shovel Test	7522	negative	1096167	462690		0-50	
Shovel Test	7523	negative	1096274	462686	40MD276	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Surface Collection Point	7530	positive	1098445	462418	40MD267		
Shovel Test	7531	negative	1098446	462379		0-50	
Shovel Test	7532	negative	1098445	462341		0-50	
Shovel Test	7533	negative	1098483	462417		0-50	
Shovel Test	7534	negative	1098514	462417		0-50	
Shovel Test	7535	negative	1098415	462416		0-39	
Shovel Test	7536	negative	1098380	462417		0-50	
Shovel Test	7537	negative	1098449	462439		0-50	
Shovel Test	7538	negative	1098454	462460		0-50	
Shovel Test	7539	negative	1099251	462761		0-50	
Shovel Test	7540	negative	1099248	462661		0-50	
Shovel Test	7541	negative	1099241	462548		0-50	
Shovel Test	7542	negative	1099231	462455		0-50	
Shovel Test	7543	negative	1100062	464290		0-50	
Shovel Test	7544	negative	1100171	464288		0-50	
Shovel Test	7545	negative	1100262	464283		0-50	
Shovel Test	7546	negative	1097803	464817		0-50	
Shovel Test	7547	negative	1097908	464811		0-50	
Shovel Test	7548	negative	1098005	464800		0-50	
Shovel Test	7549	positive	1096155	466139	40MD273	0-57	
Shovel Test	7550	negative	1096154	466173		0-50	
Shovel Test	7551	negative	1096154	466206		0-50	
Shovel Test	7552	negative	1096118	466141	40MD273	0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7553	negative	1096084	466139		0-50	
Shovel Test	7556	negative	1096157	466105	40MD273	0-50	
Shovel Test	7557	negative	1096156	466067	40MD273	0-50	
Shovel Test	7558	negative	1096187	466135	40MD273	0-50	
Shovel Test	7559	negative	1096216	466135		0-50	
Shovel Test	7560	negative	1096524	465636		0-50	
Shovel Test	7561	negative	1096633	465624		0-50	
Shovel Test	7562	negative	1096731	465616		0-50	
Shovel Test	7563	negative	1096822	465610		0-50	
Shovel Test	7564	negative	1096926	465599		0-50	
Shovel Test	7565	negative	1097036	465597		0-50	
Shovel Test	7566	negative	1096921	465260		0-50	
Shovel Test	7567	negative	1096827	465260		0-50	
Shovel Test	7568	negative	1096733	465266		0-50	
Shovel Test	7569	negative	1096623	465277		0-50	
Shovel Test	7570	negative	1097275	465553		0-50	
Shovel Test	7571	negative	1096535	466720		0-50	
Shovel Test	7572	negative	1096531	466620		0-50	
Shovel Test	7573	negative	1096529	466527		0-50	
Shovel Test	7574	negative	1096522	466427		0-50	
Shovel Test	7575	negative	1096517	466327		0-50	
Shovel Test	7576	negative	1096508	466230		0-50	
Shovel Test	7577	negative	1096502	466133		0-50	
Shovel Test	7578	negative	1096250	467882		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7579	negative	1096153	467884		0-50	
Shovel Test	7580	negative	1096053	467892		0-50	
Shovel Test	7581	negative	1096518	464845		0-50	
Shovel Test	7582	negative	1096633	464841		0-50	
Shovel Test	7583	negative	1096758	464827		0-50	
Shovel Test	7584	negative	1093462	464033		0-50	
Shovel Test	7585	negative	1093459	464069		0-50	
Shovel Test	7586	negative	1093659	464063		0-50	
Shovel Test	7587	negative	1093658	464033		0-50	
Shovel Test	7588	negative	1092901	463616		0-50	
Shovel Test	7589	negative	1092279	463485		0-50	
Shovel Test	7590	negative	1092183	463503		0-50	
Shovel Test	7591	negative	1092171	463598		0-1	
Shovel Test	7592	negative	1092083	463603		0-50	
Shovel Test	7593	negative	1091977	463612		0-50	
Shovel Test	7594	negative	1091883	463616		0-50	
Shovel Test	7595	negative	1091786	463622		0-50	
Shovel Test	7596	negative	1092454	462462		0-50	
Shovel Test	7597	negative	1092357	462472		0-50	
Shovel Test	7598	negative	1091221	462506		0-50	
Shovel Test	7599	negative	1091306	462403		0-50	
Shovel Test	7800	negative	1090843	463047		0-50	
Shovel Test	7803	negative	1094717	464072		0-50	
Shovel Test	7804	negative	1094629	463768		0-50	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	7805	negative	1094605	463661		0-50	
Shovel Test	7806	negative	1093347	468828		0-50	
Shovel Test	7807	negative	1093340	468716		0-50	
Shovel Test	7808	negative	1093333	468612		0-50	
Shovel Test	7809	negative	1093325	468517		0-50	
No Dig Point	7900	no dig - slope	1097382	462189			
No Dig Point	7901	no dig - pond	1097290	462875			
No Dig Point	7902	no dig - pond	1097194	462871			
No Dig Point	7903	no dig - slope	1097085	462486			
Shovel Test	7904	negative	1097287	462779		0-50	
No Dig Point	7906	no dig - slope	1097377	462092			
No Dig Point	7907	no dig - slope	1097287	462191			
No Dig Point	7908	no dig - field road, pond	1094854	465168			
No Dig Point	7909	no dig - pond	1095217	462307			
No Dig Point	8000	no dig - slope	1096401	462494			
No Dig Point	8001	no dig - slope	1096598	462590			
No Dig Point	8002	no dig - slope	1096697	462589			
No Dig Point	8003	no dig - slope	1096698	462687			
No Dig Point	8004	no dig - ravine, creek bed, slope	1098261	461589			
No Dig Point	8005	no dig - ravine, creek bed, slope	1098164	461688			
No Dig Point	8007	no dig - ravine, creek bed, slope	1098067	461787			
No Dig Point	8008	no dig - ravine, creek bed, slope	1097969	461887			

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
No Dig Point	8009	no dig - ravine, creek bed, slope	1097871	461888			
No Dig Point	8010	no dig - ravine, creek bed, slope	1097675	461988			
No Dig Point	8011	no dig - ravine, creek bed, slope	1097284	462288			
No Dig Point	8012	no dig - ravine, creek bed, slope	1097187	462387			
No Dig Point	8013	no dig - ravine, creek bed, slope	1096895	462685			
No Dig Point	8014	no dig - ravine, creek bed, slope	1096699	462786			
No Dig Point	8015	no dig - ravine, creek bed, slope	1096600	462787			
No Dig Point	8016	no dig - ravine, creek bed, slope	1096010	462793			
No Dig Point	8017	no dig - ravine, creek bed, slope	1095711	462402			
No Dig Point	8018	no dig - ravine, creek bed, slope	1095610	462207			
No Dig Point	8019	no dig - gravel road	1098192	464444			
No Dig Point	8020	no dig - gravel road	1098094	464445			
No Dig Point	8021	no dig - gravel road	1097996	464446			
No Dig Point	8022	no dig - gravel road	1097897	464447			
No Dig Point	8023	no dig - gravel road	1097799	464448			
No Dig Point	8024	no dig - gravel road	1097700	464449			
No Dig Point	8025	no dig - gravel road	1097602	464450			
No Dig Point	8026	no dig - gravel road	1097503	464451			
No Dig Point	8027	no dig - gravel road	1097405	464452			

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
No Dig Point	8028	no dig - gravel road	1097307	464453			
No Dig Point	8029	no dig - gravel road	1097208	464454			
No Dig Point	8030	no dig - gravel road	1097110	464455			
No Dig Point	8031	no dig - gravel road	1097011	464456			
No Dig Point	8032	no dig - gravel road	1096913	464457			
No Dig Point	8033	no dig - gravel road	1096815	464458			
No Dig Point	8034	no dig - gravel road	1096716	464459			
No Dig Point	8035	no dig - gravel road	1096618	464460	40MD274		
No Dig Point	8036	no dig - gravel road	1096519	464461			
No Dig Point	8037	no dig - gravel road	1096421	464462			
No Dig Point	8038	no dig - pond	1095748	466044			
No Dig Point	8039	no dig - pond	1095749	466142			
No Dig Point	8040	no dig - pond	1095750	466241			
No Dig Point	8043	no dig - pond	1095751	466339			
No Dig Point	8044	no dig - pond	1095654	466438			
No Dig Point	8045	no dig - pond	1095752	466437			
No Dig Point	8046	no dig - pond	1095851	466436			
No Dig Point	8047	no dig - pond	1097194	463076			
No Dig Point	8048	no dig - pond	1097193	462978			
No Dig Point	8049	no dig - pond	1095243	464769			
No Dig Point	8050	no dig - pond	1095144	464770			
No Dig Point	8051	no dig - pond	1095046	464771			
No Dig Point	8052	no dig - pond	1094948	464773			
No Dig Point	8053	no dig - pond	1094949	464871			

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
No Dig Point	8054	no dig - pond	1095047	464870			
No Dig Point	8055	no dig - pond	1095146	464869			
No Dig Point	8056	no dig - pond	1095244	464868			
No Dig Point	8057	no dig - pond	1095245	464966			
No Dig Point	8058	no dig - pond	1095147	464967			
No Dig Point	8059	no dig - pond	1095048	464968			
No Dig Point	8060	no dig - pond	1095148	465066			
No Dig Point	8061	no dig - pond	1095049	465067			
No Dig Point	8062	no dig - pond	1095149	465164			
No Dig Point	8063	no dig - pond	1095050	465165			
No Dig Point	8064	no dig - pond	1094952	465166			
No Dig Point	8065	no dig - pond	1095051	465264			
No Dig Point	8066	no dig - pond	1094953	465265			
No Dig Point	8067	no dig - pond	1094854	465266			
No Dig Point	8068	no dig - eroded bank, creek bed, slope	1094855	465364			
No Dig Point	8069	no dig - eroded bank, creek bed, slope	1094954	465363			
No Dig Point	8070	no dig - eroded bank, creek bed, slope	1094856	465462			
No Dig Point	8071	no dig - eroded bank, creek bed, slope	1094955	465461			
No Dig Point	8072	no dig - eroded bank, creek bed, slope	1094956	465560			
No Dig Point	8073	no dig - eroded bank, creek bed, slope	1095056	465756			

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
No Dig Point	8074	no dig - eroded bank, creek bed, slope	1095257	466147			
No Dig Point	8075	no dig - eroded bank, creek bed, slope	1095458	466539			
No Dig Point	8076	no dig - eroded bank, creek bed, slope	1095557	466636			
No Dig Point	8077	no dig - eroded bank, creek bed, slope	1095559	466735			
No Dig Point	8078	no dig - eroded bank, creek bed, slope	1095657	466734			
No Dig Point	8079	no dig - eroded bank, creek bed, slope	1095658	466832			
No Dig Point	8080	no dig - eroded bank, creek bed, slope	1095659	466931			
No Dig Point	8081	no dig - eroded bank, creek bed, slope	1095757	466930			
No Dig Point	8082	no dig - eroded bank, creek bed, slope	1095860	467322			
No Dig Point	8083	no dig - eroded bank, creek bed, slope	1096356	467711			
No Dig Point	8084	no dig - eroded bank, creek bed, slope	1096454	467710			
No Dig Point	8085	no dig - eroded bank, creek bed, slope	1096357	467878			
No Dig Point	8086	no dig - eroded bank, creek bed, slope	1096463	467873			
No Dig Point	8087	no dig - creek	1096047	469385			
No Dig Point	8088	no dig - creek	1096053	469495			
No Dig Point	8089	no dig - creek	1096058	469589			
No Dig Point	8090	no dig - creek	1096063	469691			
No Dig Point	8091	no dig - creek, slope	1094605	469697			

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
No Dig Point	8092	no dig - creek, slope	1094606	469796			
No Dig Point	8093	no dig - roadside ditch, paved road	1095336	464276			
No Dig Point	8094	no dig - roadside ditch, paved road	1095238	464277			
No Dig Point	8095	no dig - roadside ditch, paved road	1095139	464278			
No Dig Point	8096	no dig - roadside ditch, paved road	1095041	464279			
No Dig Point	8097	no dig - roadside ditch, paved road	1094943	464280			
No Dig Point	8098	no dig - roadside ditch, paved road	1094845	464281			
No Dig Point	8099	no dig - pond	1091875	462737			
No Dig Point	8100	no dig - pond	1091874	462639			
No Dig Point	8101	no dig - pond	1090891	462747			
No Dig Point	8102	no dig - pond	1090793	462748			
No Dig Point	8103	no dig - pond	1090694	462749			
No Dig Point	8104	no dig - creek, slope	1090691	462454			
No Dig Point	8105	no dig - creek, slope	1090200	462558			
No Dig Point	8106	no dig - creek, slope	1090101	462460			
Shovel Test	8107	positive	1096205	0	40MD270	0-47	
Shovel Test	8108	positive	1096214	0	40MD270	0-50	
Shovel Test	8109	negative	1096216	0	40MD270	0-50	
Shovel Test	8110	positive	1096157	0	40MD270	0-50	
Shovel Test	8111	negative	1096233	0	40MD270	0-50	
Shovel Test	8112	negative	1096207	0	40MD270	0-36	

Unit Type	Test	Status	TN State Plane Easting	TN State Plane Northing	Site	Shovel Test Depth (cmbs)	Auger Test Depth (cmbs)
Shovel Test	8113	negative	1096174	0	20MD270	0-50	
Shovel Test	8114	negative	1096142	0	40MD270	0-50	
Shovel Test	8115	positive	1096123	0	40MD270	0-50	
Shovel Test	8117	negative	1095541	0		0-50	
Shovel Test	8118	negative	1095541	0	40MD270	0-50	
Shovel Test	8119	positive	1095549	0	40MD270	0-50	
Shovel Test	8120	negative	1095552	0	40MD270	0-43	
Shovel Test	8121	positive	1095583	0	40MD270	0-50	
Shovel Test	8122	negative	1095548	0	40MD270	0-50	
Shovel Test	8123	negative	1095547	0	20MD270	0-50	
Shovel Test	8124	positive	1095514	0	40MD270	0-40	
Shovel Test	8125	negative	1095480	0	40MD270	0-30	
Shovel Test	8126	negative	1095448	0		0-30	
No Dig Point	8127	no dig - House	1095427	0			
Shovel Test	8128	negative	1095435	0	40MD268	0-50	
Shovel Test	8129	negative	0	1095431		0-50	
Shovel Test	8130	negative	0	1095428		0-50	
Shovel Test	8131	negative	0	1095542		0-30	
No Dig Point	8133	no dig - Ditch, gravel on side of road	1096207	0			
No Dig Point	8134	no dig - Road, ditch	1096257	0			
Shovel Test	8135	negative	1095406	0	40MD268	0-50	
Shovel Test	8136	negative	1095373	0	40MD268	0-50	

APPENDIX B: SITE FORMS
(PENDING FINAL TDOA SITE FORMS)

APPENDIX C: CURATION LETTER

THE UNIVERSITY OF ALABAMA | University Museums
Office of Archaeological Research

May 26, 2020

Dan H. Webb, M.A., R.P.A.
Archaeologist, Laboratory Director
Tennessee Valley Archaeological Research
2119 Metro Circle SW, Suite B
Huntsville, Alabama 35801
(256)705-4545
www.tvaresearch.com

Dear Mr. Webb:

As per your request, this letter is to establish an agreement to provide curation services to Tennessee Valley Archaeological Research on an as-needed basis.

We are recognized by a variety of Federal agencies as a repository meeting the standards in 54 USC §306131 (36 CFR Part 79) and have formal agreements to provide curation under these guidelines to agencies such as the Department of Defense, National Park Service, U.S. Fish and Wildlife Service, U.S. Soil Conservation Service, U.S. Army Corps of Engineers, Tennessee Valley Authority, National Forest Service, etc.

Please be advised that once a year we must be notified of all reports in which we were named as the repository. Project collections must be submitted within one calendar year of completion. Small projects may be compiled for periodic submission. For Alabama, the AHC survey policy specifies which materials must be curated (Administrative Code of Alabama, Chapter 460-X-9). Archaeological documentation must be curated even if no artifacts are recovered. Renewal of this agreement is contingent upon compliance.

We appreciate having the opportunity to assist you with curation services and look forward to working with you.

Sincerely,

Mark Donop

Dr. Mark Donop RPA
Deputy Director

Appendix F

Phase I Environmental Site Assessment

November 2020 Update
Phase I
Environmental Site Assessment Report

McKellar Site
Jackson, Tennessee
38391

Prepared for

Silicon Ranch
222 Second Ave S. Suite 1900
Nashville, TN 37201

Prepared by

615 3rd Avenue South, Suite 700
Nashville, TN 37210
Barge Project # 3609510

December 2020

SIGNATURE PAGE

Barge Project Number: 3609510
Barge Project Name: PHASE I ESA McKellar Site, Jackson

AUTHORED BY:

Signature: Chelsea Sachs

Name: Chelsea Sachs

Title: Environmental Professional

Date: November 20, 2020

FINAL REVIEWED AND APPROVED BY:

Signature:

Name: Thomas McComb, P.G.

Title: Senior Environmental Manager

Date: November 20 , 2020

TABLE OF CONTENTS

Table

Table 1 – McKellar UST Removal Lab Results

APPENDICES

EXECUTIVE SUMMARY

Barge Design Solutions (Barge) was retained by Silicon Ranch to complete a Phase I Environmental Site Assessment (ESA) on approximately 932 acres known as the McKellar Site, located in Madison County, Tennessee. Silicon Ranch requested this ESA as due diligence in preparation for acquiring the subject property, and to satisfy one of the *innocent landowner defense* requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) through the identification of recognized environmental conditions that may exist on the subject property.

The subject property composed of eight parcels, identified as Parcel Numbers 097 013.02, 097 013.01, 097 013.06, 097 013.00, 097 013.05, 097 031.00, 097 026.00, and 097 013.09. The parcels are owned by Don Johnson (Parcels 097 013.02, 097 013.01, 097 013.09, 097 026.00, and 097 013.06), Robert Johnson (Parcel 097 031.00), Karen Hutchison (Parcel 097 013.00), and Diane Oman (Parcel 097 013.05). An easement on Parcel 090 024.00 (owned by Madison County) extends from the northern portion of the property to an electric substation and is included as part of the subject property. The subject property is located in Jackson, in Madison County, Tennessee. The subject property is roughly 1.5 miles south of US 70/ State Route (SR) 1 (Airways Boulevard), west of Smith Lane and north and south of Denmark Jackson Road.

Currently the subject property is used for agricultural and residential purposes.

Currently the adjoining properties are primarily use for agricultural purposes with a few residential properties nearby.

Database Search Results

An environmental database search by GeoSearch, Inc. (GeoSearch) was commissioned for the subject property. The findings of the GeoSearch report were reviewed, and for the area within the search radii the findings revealed the following. The results are discussed further in Section 4.0 of this report.

Main Environmental Findings

- The GeoSearch Radius Report did not identify any listings for the subject property. No significant findings were discovered for the adjacent properties.

- Some areas of the site had improper solid waste disposal of items such as tires and about four old cars. While these areas did not appear to represent a significant environmental impact to the site, Barge does recommend that the tires and additional waste be removed from the property and properly disposed.

- The subject property has an abandoned railway bed across the southeast portion

of the site that had existed since at least the 1940s. As rail corridors commonly have residual contamination from railroad operations a soil investigation was completed in August 2020 which found no evidence of contamination associated with the railway bed.

- A total of five underground storage tanks (USTs) were found at three locations at the site. As of the time of this report all five USTs discovered have been properly removed from the ground and disposed of off site at an appropriate facility. One UST had a small amount of diesel impacted soil that was excavated from the tank pit and is currently being prepared for final disposal off site. The USTs are discussed further in Section 5.5.1 of this report.

Conclusion

Based on the available information in records research, our understanding of the past and current operations, and our site reconnaissance and removal actions, there are no Recognized Environmental Conditions (RECs) associated with this site. Once the excavated soil associated with a UST removal is removed from the site, Barge does not recommend additional environmental assessments or remedial actions.

1.0 INTRODUCTION

1.1 Purpose

The purpose of this ESA is to identify recognized environmental conditions on the subject property. The ASTM Standard Practice E1527-13 defines areas of past or current environmental concerns as 'Recognized Environmental Conditions' which is specifically described as:

> "*The presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release…into structures on the property or into the ground, groundwater, or surface water on the property…This term is not intended to include de minimis conditions that generally do not present a material risk of harm to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."*

By identifying recognized environmental conditions or the lack thereof, the use of this ESA is intended to satisfy one of the requirements to qualify for the "innocent landowner defense" to CERCLA liability.

1.2 Scope of Work

The scope of work performed in the preparation of this ESA was in conformance with the standards set forth in the ASTM Standard Practice E 1527-13, the All Appropriate Inquiries (AAI) provision in 40 CFR Part 312, and the apparent conditions, uses, and history of the subject property.

The following specific task items were addressed in the Scope of Work for this ESA:

- Documentation of the known historical use to 1940 or to first period of development. This includes deeds, restrictions, agreements, and easements;
- Determination of use (prior and current activities) of property and facility construction which would indicate the presence of or cause the release of hazardous substances;
- Determination of use of adjacent and surrounding property generally within a one-mile radius (unless a greater area is warranted), which could allow the release of hazardous substances to the subject property;
- Review of available subsurface and geological information, aerial photographs, and topographic maps;
- Review of reasonably ascertainable data from state and federal regulatory agencies and utility companies, file searches and permit reviews. These

include but are not limited to records of hazardous spills, superfund listings, waste disposal sites, underground storage tanks, waste generators, wetlands, NPDES permits, waste treatment facilities, and air emissions permits for the subject property and the adjacent properties within one-half mile of the subject property;

- Interviews with individuals knowledgeable with the current, historical and regulatory use of the property;
- Site reconnaissance to look for obvious indications of present or past activities, such as waste handling, solid waste disposal, hazardous materials usage, waste water treatment, discharge, or disposal, or the presence of underground/aboveground storage tanks (UST/AST), which have or could have contaminated the site.

Per the standards set forth in the ASTM Standard Practice E 1527-13 the following are non-scope considerations: Asbestos-containing building materials, biological agents, cultural and historic resources, ecological resources, endangered species, health and safety, indoor air quality unrelated to releases of hazardous substances or petroleum products into the environment, industrial hygiene, lead-based paint, lead in drinking water, mold, radon, regulatory compliance, and wetlands.

1.3 Significant Assumptions

Due to the limitations of data availability and reliability, no environmental assessment can wholly eliminate uncertainty regarding potential for significant environmental conditions in connection with a property. Performance of this Phase I Environmental Site Assessment is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with a property.

Barge's opinions regarding direction of ground-water flow are limited and are based primarily on observed surface topography and topographic mapping. Unknowns such as bedrock strata and karst conditions that can affect groundwater flow direction are not predictable without additional investigation.

The statements of fact contained within this report are true and correct to the best of our knowledge. However, Barge does not assume responsibility for incorrect data which is inadvertently supplied to or obtained by Barge from third party information sources.

1.4 Special Terms and Conditions, Limitations, and Exceptions

The Phase I Environmental Site Assessment (ESA) was completed to conform to the American Society of Testing and Materials (ASTM) Standard Practice E 1527-13. It did not include sampling of environmental media or investigation of subsurface conditions.

Similarly, this ESA did not include specific evaluations to determine the presence of lead-based paint, asbestos containing material, wetlands, or radon.

Inquiries made in completing this ESA have not been exhaustive, but they have been consistent with the standards set forth in the ASTM Standard Practice E 1527-13, the All Appropriate Inquiries (AAI) provision in 40 CFR Part 312, and the apparent conditions, uses, and history of the subject property.

Drawings and exhibits included in this report are for the purpose of assisting the reader in visualizing the property and is data which may have been supplied in part by reliable third-party agencies other than Barge. These drawings and exhibits are not intended to take the place of actual surveys, utility locations, utility capacities, or data otherwise needed for actual development and construction.

In accordance with the ASTM Standard Practice E 1527-13, this report is accepted to be valid for a period not-to-exceed 180 days. Beyond that period, the reader of this report should consider the re-verification of the report data which is subject to change after the initial report preparation based on the type of property assessed, and the condition of the areas surrounding the subject property.

1.5 User Reliance

This report has been prepared for reliance by Silicon Ranch. Neither all nor any part of the contents of this report shall be relied upon by parties other than the entity(s) indicated which subscribed directly with Barge for its preparation, without the prior written consent of Barge.

1.6 Environmental Professional Statement

This Phase I ESA was completed by or under the direct supervision of the Environmental Professional (EP) identified on the signature page of this report. The EP declares that, to the best of his or her professional knowledge and belief, they meet the definition of an Environmental Professional as defined in 40 CFR Part 312.

2.0 SUBJECT PROPERTY DESCRIPTION

2.1 Location

The subject property is located in Jackson, in Madison County, Tennessee. The subject property is roughly 1.5 miles south of US 70/ SR 1 (Airways Boulevard), west of Smith Lane and north and south of Denmark Jackson Road. Vicinity and site maps showing the location and boundary of the subject property are provided in Appendix A.

2.2 Subject Property and Vicinity Characteristics

The subject property lies approximately 6.75 miles to the southwest of downtown Jackson, near the McKellar-Sipes Regional Airport. The area is comprised of commercial and industrial properties proximal to the airport, and residential and agricultural properties adjacent to the subject property.

2.3 Current Use of the Subject Property

The subject property is currently used for agricultural and residential purposes.

2.4 Descriptions of Subject Property Structures and Improvements

There is a derelict two-story brick house on the central portion of the site. A single-story residential structure is located on the central portion of the site adjacent to the road. Two old wooden barns were observed on the south-central portion of the near the road. A single-story approximately 2,000 square foot house is located on the northwestern portion of the site off Womack Lane. A carport and barn are located just north of the Womack Lane house.

2.5 Current Use of Adjoining Properties

Currently the adjoining properties are primarily use for agricultural purposes with a few residential properties nearby.

3.0 USER PROVIDED INFORMATION

3.1 User Questionnaire

In accordance with ASTM Standard Practice E1527-13, in order to qualify for one of the Landowner Liability Protections offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001, the User must provide information (if available) to the environmental professional. If all information is not provided, the environmental professional could determine that all appropriate inquiry is not complete.

An Environmental Questionnaire was completed on June 2, 2020 by Mr. Conor Goodson, Director of Development for Silicon Ranch. Mr. Goodson's answers indicated that he was not aware of any environmental concerns related to the subject property. A copy of the completed Questionnaire is included in Appendix C of this report.

3.2 Title Records

Property records were reviewed for Parcel 097 013.02, 097 013.01, 097 013.06, 097 013.00, 097 013.05, 097 031.00, 097 026.00, and 097 013.09 from the Tennessee Property Data Viewer for Madison County. A copy of the supporting documents is presented in Appendix J.

3.3 Environmental Liens or Activity and Use Limitations

No environmental liens, or activity and land use limitations for the subject property were found for Parcels 097 013.02, 097 013.01, 097 013.06, 097 013.00, 097 013.05, 097 031.00, 097 026.00, and 097 013.09. A copy of the lien search and supporting documents are presented in Appendix H.

3.4 Specialized, Commonly Known or Reasonably Ascertainable Knowledge

The reliant parties are familiar with the subject property and have obtained specialized, commonly known, or reasonably ascertainable knowledge. The reliant parties have been provided site data from the current owner in anticipation of a financial transaction.

3.5 Valuation Reduction for Environmental Issues

No recognized environmental conditions were recognized which would appear to result in a valuation reduction of the subject property.

3.6 Owner, Property Manager, and Occupant Information

The subject property is identified as Parcel 097 013.02, 097 013.01, 097 013.06, 097 013.00, 097 013.05, 097 031.00, 097 026.00, and Parcels 097 013.09. The parcels are owned by Don Johnson (Parcels 097 013.02, 097 013.01, 097 013.09, 097 026.00, and 097 013.06), Robert Johnson (Parcel 097 031.00), Karen Hutchison (Parcel 097 013.00), Diane Oman (Parcel 097 013.05), and Madison County (Parcel 090 024.00). Currently most of the subject property is used for agricultural cultivation.

3.7 Reasons for Performing Phase I

This Phase I ESA was performed as due diligence in preparation for acquiring the subject property, and to satisfy one of the *innocent landowner defense* requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), for the Foreign Sovereign Immunities Act (FSIA), through the identification of recognized environmental conditions that may exist on the property, prior to property ownership transfer and/or other financial transaction.

4.0 RECORDS REVIEW

4.1 Standard Environmental Record Sources

4.1.1 Federal and State Database

On behalf of Barge, GeoSearch, Inc. (GeoSearch) completed an ASTM-compliant environmental records/database review. The database review took place on May 26, 2020 and December 30, 2020, and is included in Appendix I. The GeoSearch review provides federal and state regulatory agency information for the subject property and properties within the ASTM search radii and indicated the following:

ASTM FEDERAL, STATE, AND TRIBAL DATABASE LISTS		
Database	**Approximate Minimum Search Distance (miles)**	**Number of Facilities**
NPL/Proposed NPL	1.0	0
Delisted NPL	0.5	0
CERCLIS	0.5	0
RCRA CORRACTS	1.0	0
RCRA non-CORRACTS TSD	0.5	0
RCRA Generators	*Property and adjoining properties only*	0
Institutional/Engineering Controls	*Property only*	0
ERNS	*Property only*	0
State/Tribal Equivalent NPL	1.0	0
State/Tribal Equivalent CERCLIS	0.5	0
Landfill/SWF	0.5	0
LUST	0.5	0
LUST TRUST	0.5	0
UST	*Property and adjoining properties only*	0
Historic UST	*Property and adjoining properties only*	0
AST	*Property and adjoining properties only*	0
VCP	0.5	0
LIENS	0.5	0
FINDS	*Property and adjoining properties only*	1
Brownfield	0.5	0
SRP	0.5	0

Subject Property

- The GeoSearch search did not return any results for the subject property.

Surrounding Properties

- The Madison County Industrial Park located to the northeast of the site was registered in the following databases: National Pollutant Discharge Elimination System, the Enforcement and Compliance History Information, and the Facility Registry System. These listings all appear to be related to the construction of the Industrial Park and mainly pertain to grading works. No violations were shown on the EPA website and the grading permit is listed as expired.

4.1.2 State Agency Inquiries

No additional state agency inquiries were performed based on the findings of the GeoSearch report, historical site information, and interviews.

4.2 Additional Environmental Records Sources

No specific additional environmental record sources were obtained.

4.3 Physical Setting

4.3.1 Topography

The current U.S. Geological Survey topographic 7.5 minute map for the property area is the Westover, 2013. The subject property is located approximately 470 feet above sea level at -88.936767, 35.5751412. The more central portions of the site, especially those that have been cultivated are relatively flat, sloping gently towards the wooded perimeter areas of the site which are approximately 50 feet lower in elevation. Topographic maps are included in Appendix E.

4.3.2 Soils

Examination of the National Cooperative Soil Survey of the area issued by the United States Department of Agriculture Soil Conservation Service, indicates that the property is underlain by the following soils: the Memphis silt loam, the Calloway silt loam, the Loring silt loam, the Grenada silt loam, and the Providence silt loam.

4.3.3 Wetlands & Endangered Species

A wetland delineation and endangered species survey was not performed as part of the scope of this report.

4.3.4 Surface Water Bodies and Storm Water

A review of the United States Geological Survey (USGS) National Hydrology Dataset (NHD) indicates there are streams and ponds on the subject property.

4.3.5 Flood Plains

According to the FEMA Flood Insurance Rate Maps for the area, Maps 47113C0255E and 47113C020E, dated August 2009; the subject property is primarily located in 'Zone X'. Zone X is defined as 'Areas of 500-year flood.' A small portion of the southwestern parcel is mapped as being in 'Zone AE', which is defined as 'The base floodplain where base flood elevations are provided.'

4.4 Historical Research

Historical topographic maps dated 1959,1980, 1981, and 2013 were researched during preparation of this report and are presented in Appendix E.

Aerial photographs dated 1941, 1947, 1952, 1956, 1965, 1975, 1981, 1985, 1992, 1997, 2004, 2006, 2007, 2008, 2010, 2012, 2014, 2016, and 2018 are presented in Appendix D.

Sanborn fire insurance maps dated were not available for the property. A letter of no availability is presented in Appendix F.

4.5 Historical Use of Subject and Adjoining Properties

Topographic Maps dating back to 1959 and aerial photographs dating back to 1941 indicate that the subject property had more residential structures on it in the 1940s in the southwestern portion of the site and appears to have been cultivated agricultural land since at least the 1940s. A railroad is shown on the southeastern portion of the site dating back to at least the early 1940s and is possibly older. A house appeared to have existed at the corner of Womack Lane and Denmark Jackson Road from at least the 1940s to 2018. The current on site house at Womack Lane appears on aerial photographs around the 1980s.

Historically the surrounding properties have been large tracts of agricultural land with associated residences located sparsely around the farms. The McKellar Sipes airport appears to have been constructed around the mid-1940s. The Industrial Park area appears to have been constructed in the early 2000s.

5.0 SUBJECT PROPERTY RECONNAISSANCE

5.1 Methodology and Limiting Conditions

The first reconnaissance of the subject property was performed by Frank Amatucci and Nick Carmean of Barge on May 11, 12, 13, and 19, 2020. The second reconnaissance was performed on November 3, 2020 by Chelsea Sachs and Ryan Cleveland of Barge.

The property was accessible at the time of inspection. Barge personnel traversed the length and width of the property on foot. Photographs of the subject property taken during the site reconnaissance are presented in Appendix B.

5.2 Hazardous Substances in Connection with Identified Uses

A small amount of old oil cans and a 55-gallon drum were noted near the central portion of the site. The cans and drum were empty, and no obvious spills were noted. No other evidence of hazardous substances was observed on the subject property at the time of site reconnaissance. In the summer of 2020, a total of five unregulated USTs was identified on the site and removed following TDEC standard operating procedures for USTs removals.

5.3 Unidentified Substance, Containers, Staining, or Stressed Vegetation

No unidentified substances, staining, or stressed vegetation were observed on the subject property at the time of site reconnaissance.

5.4 Known Spills or Releases

During the removal of the western-most UST at the barn off Womack Lane, approximately 12 yards of diesel impact soil were excavated from the tank pit. At the time of this report, proper off-site disposal of the soil is being coordinated. No other readily apparent spills or releases were observed on the subject property at the time of site reconnaissance.

5.5 Storage Tanks

5.5.1 Underground Storage Tank (USTs)

Five 500-gallon USTs have been removed from the site. As shown in Figure 2, two tanks were located on the portion of the site the east of Denmark Jackson Road, two tanks were located near the barn off Womack Lane, and one tank was located near the abandoned house near the central portion of the site. During removal of the USTs, field screening was completed with a photoionization detector for all samples. Samples were collected from the tank pit (excavated material) and from beneath each end of the tank. Laboratory analysis based on the analysis laid out by TDEC Division of Underground Storage Tanks (DUST) UST Closure Assessment Guidelines was done by Pace Analytical. As shown on Table 1, with the exception of Extractable Petroleum Hydrocarbons (EPH), there were no exceedances in the samples collected. EPH is used as a soil screening tool in the event that monitoring wells are needed, as EPH can detect old constituents which have degraded below regulated levels otherwise. As no other results were above TDEC DUST UST Closure levels and no groundwater was encountered during excavation, no monitoring wells were installed. For those reasons it is our opinion that the EPH exceedances are not a concern relative to the site. There was no evidence of additional

underground storage tanks (USTs) observed on the subject property at the time of site reconnaissance.

5.5.2 Aboveground Storage Tank (ASTs)

An approximately 1,000-gallon propane tank was observed on the south-central portion of the site. Three approximately 1,000-gallon diesel ASTs were observed on the west side of the barn off Womack Lane. No significant staining was observed below the ASTs. There was no other evidence of aboveground storage tanks (ASTs) observed on the subject property at the time of site reconnaissance.

5.6 Lead-Based Paint (LBP)

A lead paint survey was not completed as part of the scope of this ESA. Structures built before 1978 have a greater potential of containing LBP.

5.7 Indications of Polychlorinated Biphenyl's (PCBs)

No transformers were observed on the subject property. Any transformers would be owned by the local electric utility, and therefore their responsibility.

5.8 Asbestos Containing Materials (ACMs)

An asbestos survey was not completed as part of the scope of this ESA and the presence or absence of ACMs in the building has not been determined. Structures built before 1975 have a greater potential of containing ACMs.

5.9 Floor Drains/Sumps

No floor drains or sumps were observed.

5.10 Indications of Solid Waste Disposal

A stack of used tires approximately 40 feet long was observed in the southeastern portion of the site. Some tires were also observed in the central portion of the site, near the oil cans mentioned earlier. Some household waste was observed in the central portion of the southwest-most parcel. Four junk cars were observed in the north-central parcel, just north of the pond area. There was so significant staining or indications of spills observed. No other indications of solid waste disposal were observed on the subject property at the time of site reconnaissance. Barge does recommend that the tires and additional waste be removed from the property and properly disposed.

5.11 Vapor Intrusion and Encroachment

The vapor migration pathways to the subject property would be via preferential flow pathways for vapors including utility lines, fractures in the soil, or along caves or conduits within the bedrock. Vapor pathways do not necessarily mirror ground-water flow

pathways. While contaminants associated with the former railway track could constitute a vapor intrusion risk, based on the current understanding of the future development plans of the site as a solar facility, we do not anticipate vapor to be a significant risk at this time. If further sampling indicates a more significant vapor issue and or changes to the development occur, Barge may recommend further vapor sampling.

6.0 INTERVIEWS

6.1 Interviews with Owner

Mr. Don Johnson was interviewed multiple time throughout the site assessment both in person and over the phone. He stated that his family has owned the property for multiple generations and over the time have purchased some of the southern properties adjacent to the public roadway. He also mentioned that he grew up in the house to the east, that is now abandoned, and his son lives at the house next to the large farm ponds on the property on Womack Lane. He said that the land has been used for farming for multiple generations. According to Mr. Johnson after the removal of the five USTs onsite, there should be no remaining USTs. In regards to the rubble on the tract at the intersection of Womack Lane and Denmark Jackson Road, Mr. Johnson stated that was his sister's house until it burned down a few years ago.

6.2 Interviews with Local Government Officials

No interviews were conducted with local government officials based on the findings of the GeoSearch report, historical site information, and interviews.

6.3 Interviews with Neighboring or Nearby Property Owners or Occupants

No additional interviews with property owners were performed based on the findings of the GeoSearch report, historical site information, and interviews.

7.0 FINDINGS AND CONCLUSIONS

7.1 Findings

- The GeoSearch Radius Report did not identify any listings for the subject property. No significant findings were found for the adjacent properties.

- The subject property has had

    - An abandoned railway bed across the southeast portion of the site that had existed since at least the 1940s. Rail corridors commonly have residual contamination from railroad operations including: heavy metals, PAHs, and oil/fuel constituents. Sampling along the railway bed in the summer of 2020 did not detect any constituents of concern along the railway bed.

    - Five USTs were identified on the property and properly removed from the site.

7.2 Data Failure

Data failure is “a failure to achieve the historical research objectives” of AAI, “even after reviewing the standard historical sources” listed in AAI “that are reasonably ascertainable and likely to be useful.” There were no data failures encountered during preparation of this report.

7.3 Data Gaps

Data gaps are, “a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice, including, but not limited to site reconnaissance, and interviews.” There are no significant data gaps for this report.

7.4 Deviations

No deviations were made from the ASTM Standard Practice E 1527-13 guidelines.

7.5 Conclusions

Barge performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Standard Practice E1527-13, of the subject property identified as the McKellar Site located in Jackson, Tennessee in Madison County. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report.

Based on the available information in records research, our understanding of the past and current operations, and our site reconnaissance and removal actions, there are no

Recognized Environmental Conditions (RECs) associated with this site. Once the excavated soil from a UST removal is removed from the site, Barge does not recommend additional environmental assessments or remedial actions.

Tables

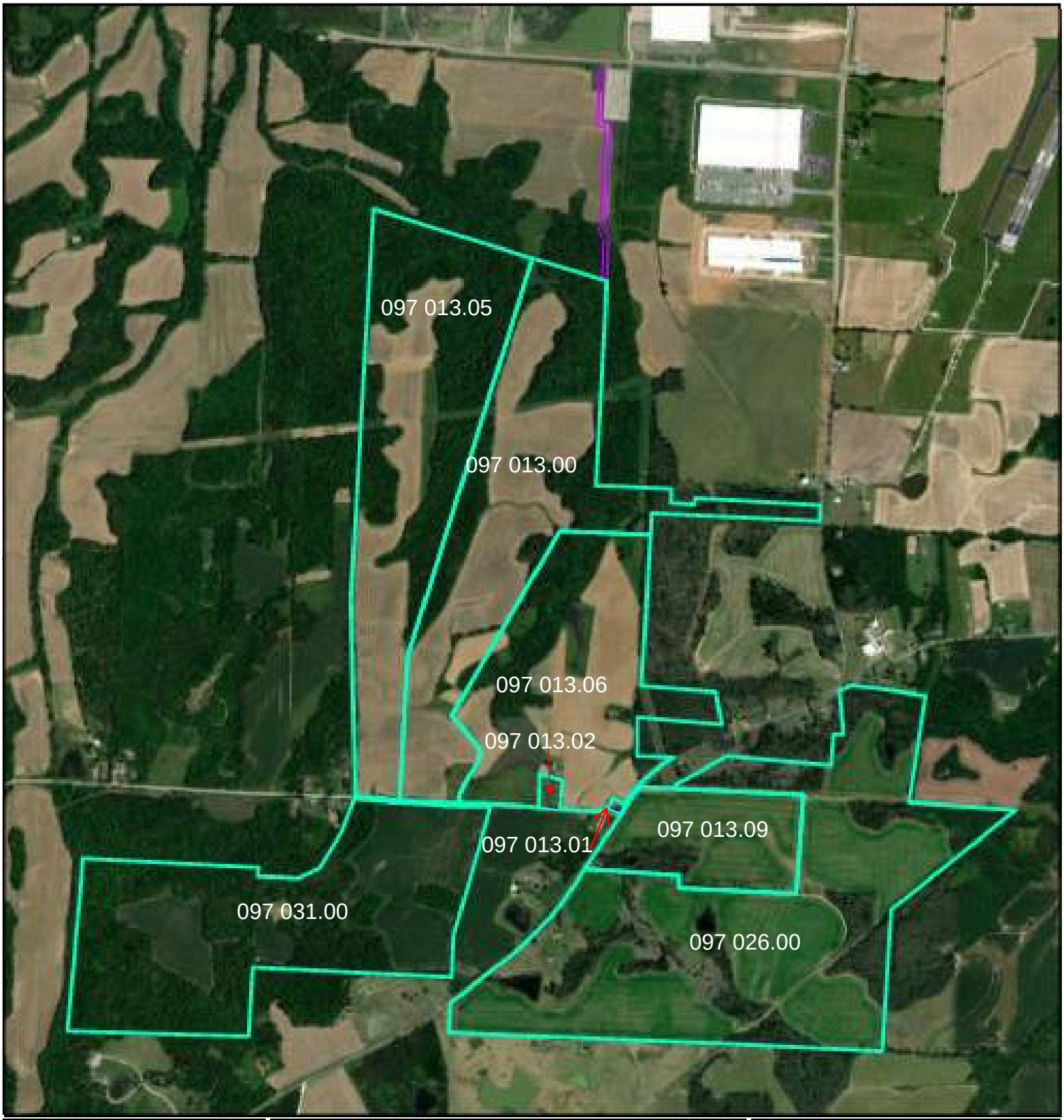
Table 1: McKellar UST Removal Lab Results

				Tank Locations:	Tanks by Barn off Womack Lane							Tank by Central House			Tanks East of Denmark Jackson Road					
Sample ID				B1-1	B1-2	B1-SP1	B2-1	B2-2	B2-SP1	B2-SP2	G-1	G-2	G-SP	T1-S1	T1-S2	T2-S1	T2-S2	SP1	SP2
Method	Analyte	Units	RSL*	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
8260B	BENZENE	mg/kg	0.0729	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.0200	<0.0200	<0.00110	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
8260B	TOLUENE	mg/kg	6.78	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.100	<0.100	<0.00550	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
8260B	ETHYLBENZENE	mg/kg	143.0	<0.00250	<0.00250	<0.00250	<0.00250	0.0136	<0.00250	0.0644	0.272	0.627	<0.00275	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250	<0.00250
8260B	XYLENES, TOTAL	mg/kg	9.6	<0.00650	<0.00650	<0.00650	0.0158	0.0547	<0.00650	0.838	1.5	2.39	<0.00715	<0.00650	<0.00650	<0.00650	<0.00650	<0.00650	<0.00650
8260B	METHYL TERT-BUTYL ETHER	mg/kg	39.6	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.0200	<0.0200	<0.00110	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
8270C	ACENAPHTHENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	0.836	3.67	3.36	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	ACENAPHTHYLENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.167	<0.666	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	ANTHRACENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.666	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	BENZIDINE	mg/kg		<1.67	<1.67	<1.67	<1.67	<1.67	<1.67	<1.67	<1.67	<8.35	<1.67	<1.67	<1.67	<1.67	<1.67	<1.67	<1.67
8270C	BENZO(A)ANTHRACENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	BENZO(B)FLUORANTHENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	BENZO(K)FLUORANTHENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	BENZO(G,H,I)PERYLENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	BENZO(A)PYRENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	BIS(2-CHLORETHOXY)METHANE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	BIS(2-CHLOROETHYL)ETHER	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	2,2-OXYBIS(1-CHLOROPROPANE)	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	4-BROMOPHENYL-PHENYLETHER	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	2-CHLORONAPHTHALENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.167	<0.666	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	4-CHLOROPHENYL-PHENYLETHER	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	CHRYSENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	DIBENZ(A,H)ANTHRACENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	3,3-DICHLOROBENZIDINE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	2,4-DINITROTOLUENE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	2,6-DINITROTOLUENE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	FLUORANTHENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.666	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	FLUORENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	1.16	3.4	2.86	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	HEXACHLOROBENZENE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	HEXACHLORO-1,3-BUTADIENE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	HEXACHLOROCYCLOPENTADIENE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	HEXACHLOROETHANE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	INDENO(1,2,3-CD)PYRENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	ISOPHORONE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	NAPHTHALENE	mg/kg	135	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	5.91	7.85	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	NITROBENZENE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	N-NITROSODIMETHYLAMINE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	N-NITROSODIPHENYLAMINE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	N-NITROSODI-N-PROPYLAMINE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	PHENANTHRENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	1.32	2.28	2.59	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	BENZYLBUTYL PHTHALATE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	BIS(2-ETHYLHEXYL)PHTHALATE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	DI-N-BUTYL PHTHALATE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	DIETHYL PHTHALATE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	DIMETHYL PHTHALATE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	DI-N-OCTYL PHTHALATE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	PYRENE	mg/kg		<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	0.039	0.0406	<0.167	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333	<0.0333
8270C	1,2,4-TRICHLOROBENZENE	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	4-CHLORO-3-METHYLPHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	2-CHLOROPHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	2,4-DICHLOROPHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	2,4-DIMETHYLPHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	4,6-DINITRO-2-METHYLPHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	2,4-DINITROPHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	2-NITROPHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	4-NITROPHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	PENTACHLOROPHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<6.66	<1.67	0.738	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	PHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
8270C	2,4,6-TRICHLOROPHENOL	mg/kg		<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<1.67	<6.66	<1.67	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333
EPH	EXTRACTABLE PETROLEUM HYDROCARBO	mg/kg	500**	<4.00	<4.00	<4.00	29.2	13.1	<4.00	1780	4960	4040	4.47	24.4	378	6.73	4.66	5.79	43.8

* Based on TDEC DUST UST Closure Assessment Guidelines; **According to TDEC DUST EPH is used as a soil screening mechanism for the potential installation of a monitoring well only. Based on our findings monitoring well installation was not warranted.

Denotes a detection below TDEC DUST UST Closure Assessment Guidelines

Denotes a detection above TDEC DUST UST Closure Assessment Guidelines



Parcel Boundaries

Proposed Electric Easement

N

1 inch = 1,500 feet

0 310 620 1,240 1,860 Feet

Basemap: ESRI World Imagery
Source Data: TN ROADS

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
PROJECT LOCATION MAP

PROJ NO: 3609510

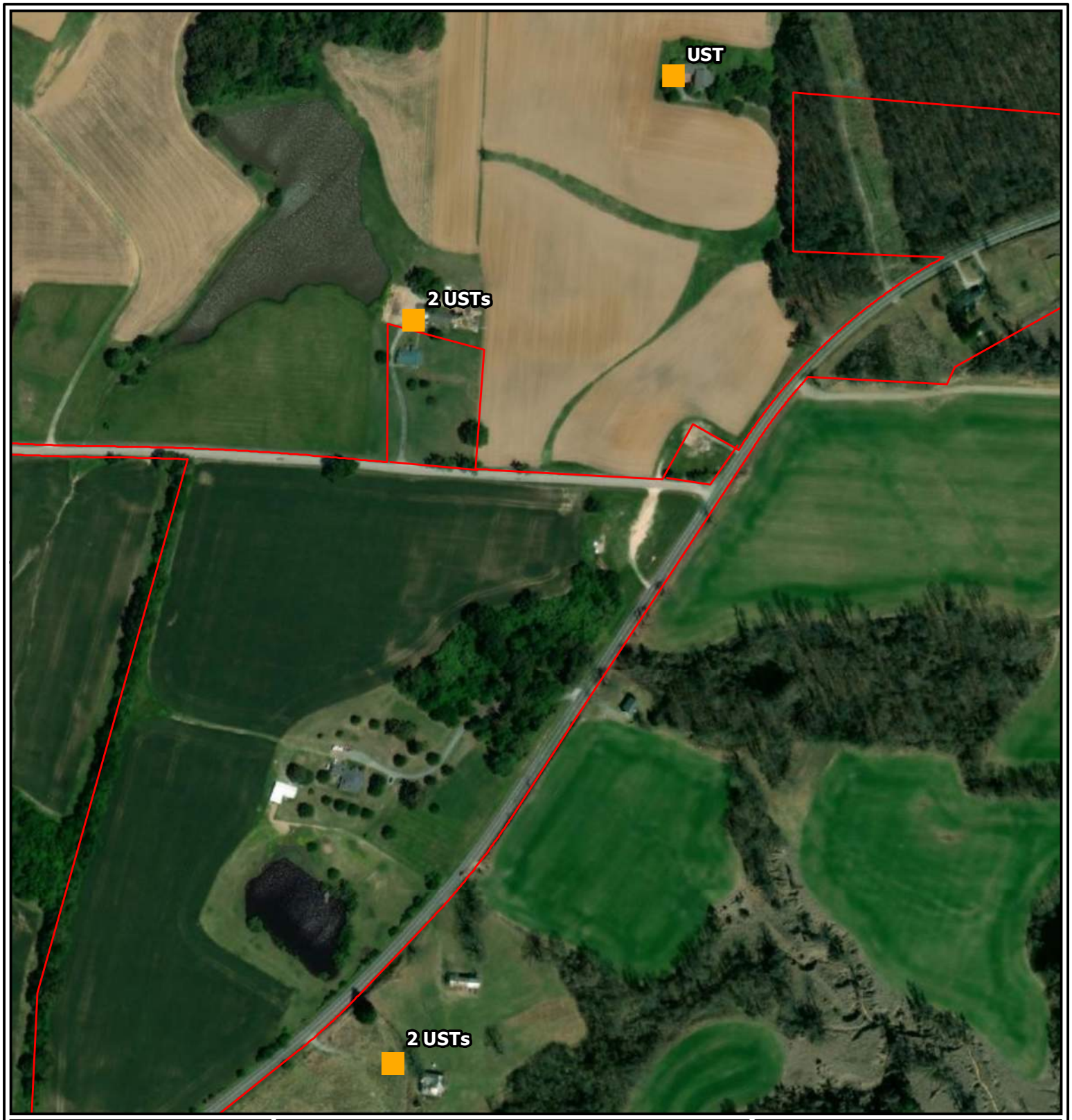
DATE: December, 2020

FIGURE 1

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: \\corp.bwsc.net\data\Projects\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\Permit_Maps\USACE_AJD\Figure1_ProjectLocationMap.mxd



Location of USTs Removed

Project Study Area

N

1 inch = 362 feet

0 75 150 300 450

Feet

Basemap: ESRI World Imagery
Source Data: TN ROADS

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
USTs REMOVED LOCATION MAP

PROJ NO: 3609510

DATE: November, 2020

FIGURE 2

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Appendix B:
Site Photographs

Photographer: Frank Amatucci	
Date: 5/11/2020	
Description: Photograph: 1 Typical view of the wooded part of the northern portion of the site.	

Photographer: Frank Amatucci	
Date: 5/5/2020	
Description: Photograph: 2 Typical view of cultivated area at northeastern parcel.	

Photographer: Frank Amatucci	
Date: 5/5/2020	
Description: Photograph: 3 Typical view of cultivated area of northwestern parcel.	

Photographer: Chelsea Sachs	
Date: 11/17/2020/	
Description: Photograph: 4 View of rubble remnants from house fire at the intersection of Denmark Jackson Road and Womack Lane.	

Photographer: Chelsea Sachs **Date:** 11/17/2020 **Description:** Photograph: 6 View of residential dwelling onsite at Womack Lane.	

Photographer: Chelsea Sachs **Date:** 10/5/2020 **Description:** Photograph: 7 Trash pile with pieces of furniture, and charcoal grill.	

Photographer: Chelsea Sachs **Date:** 10/5/2020 **Description:** Photograph: 8 View of the two tanks prior to disposal that were removed from the beside the barn off Womack Lane.	

Photographer: Chelsea Sachs **Date:** 10/5/2020 **Description:** Photograph: 9 View of the tank removed from beside the garage near the central portion of the site prior to disposal.	

Photographer: Chelsea Sachs	
Date: 11/14/2020	
Description: Photograph: 10 View of the two USTs from the eastern portion of the site after removal and cleaning, prior to disposal.	

Appendix C:
User Questionnaire

USER QUESTIONNAIRE

1. **Does the reliant party have any specialized knowledge or experience that is material to any Recognized Environmental Conditions in connection with the Property?**

   No

2. **Does the reliant party have any actual knowledge of any environmental lien or activity and use limitations encumbering the Property or in connection with the Property?**

   No

3. **Is the reliant party aware of any hazardous substances and/or petroleum products in, on, or under the Property.**

   No

4. **Has the reliant party considered the relationship of the purchase price of the Property to the fair market value of the Property, if the Property were not affected by hazardous substances or petroleum products?**

   Yes

5. **Is the reliant party aware of any commonly known or reasonably ascertainable information within the local community about the Property that is material to Recognized Environmental Conditions in connection with the Property?**

   No

6. **Has the reliant party considered the degree of obviousness of the presence or likely presence of releases or threatened releases at the Property and the ability to detect releases or threatened releases by appropriate investigation? Has the reliant party observed any conditions indicating the presence or likely presence of releases or threatened releases at the Property?**

   No

7. **Is the reliant party aware of any substances or petroleum products in, on, or from the Property; (ii) any pending, threatened or past administrative proceedings relevant to hazardous substances or petroleum products in, on, or from the Property; or (iii) any notices from any governmental entity regarding any possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products?**

   No

8. **Is the reliant party aware of any helpful environmental documents concerning the Property?**

USER QUESTIONNAIRE

No

Property Address/Location: 35.580629, -88.938307

Property Type: Agricultural

Transaction Type: Purchase

6/2/2020

Signature **Date**

Name: Conor Goodson

Title: Director, Development

Company/Organization: SR McKellar, LLC

Address: 222 Second Ave S. Suite 1900 | Nashville, TN 37201

Phone Number: 404-759-8626

Email Address: conor.goodson@siliconranch.com

Appendix D:
Historic Aerial Photographs

GeoSearch
On time. On target. In touch.™

Historical Aerial Photographs

NEW: *GeoLens by Geosearch*

Target Property:

McKellar Site
Womack Ln
Jackson, Madison, Tennessee 38301

Prepared For:

Barge Design Solutions

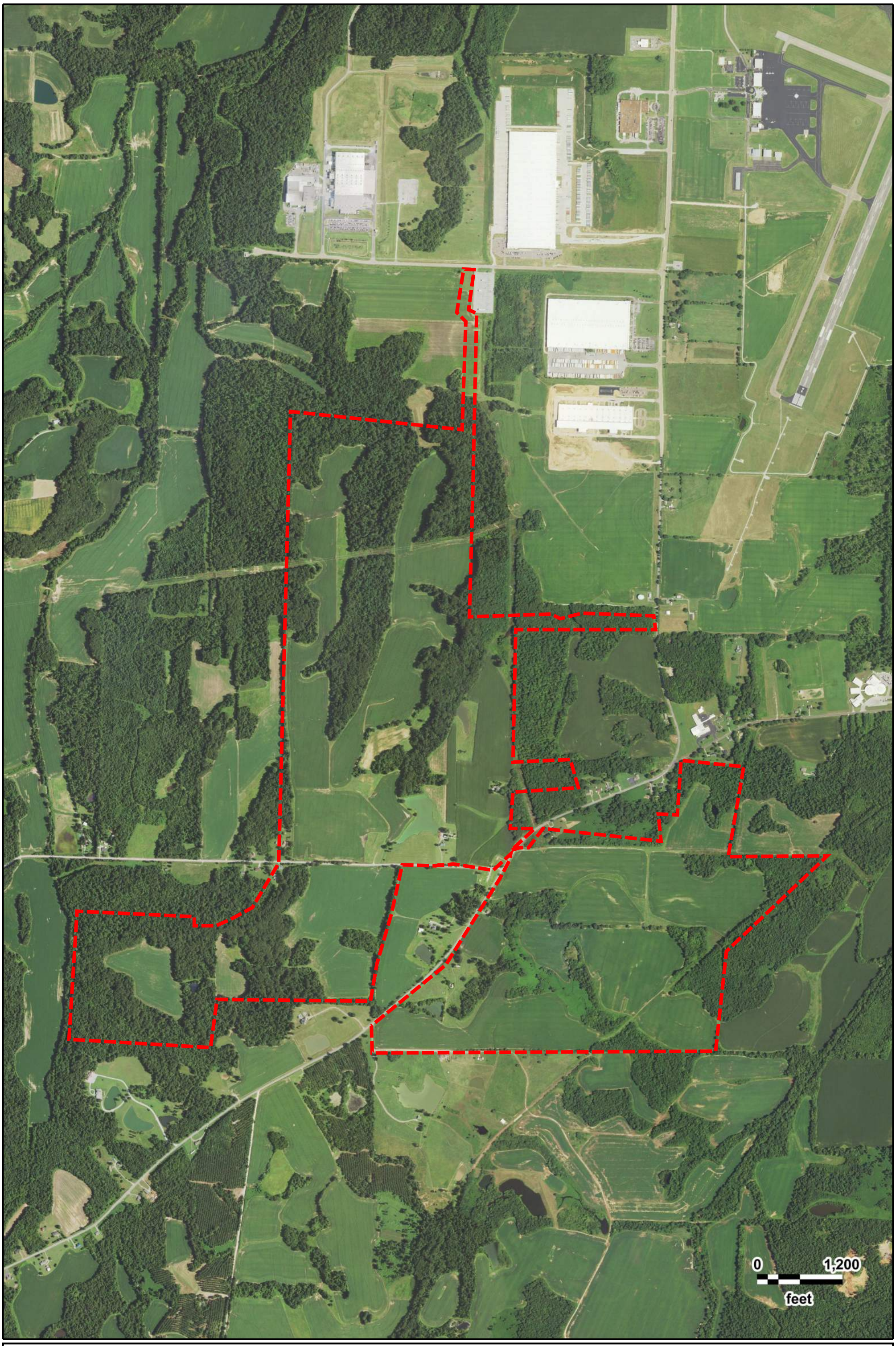
Order #: 147402
Job #: 354123
Project #:
Date: 5/28/2020

Target Property Summary

McKellar Site
Womack Ln
Jackson, Madison, Tennessee 38301

USGS Quadrangle: ***Westover***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-88.939782770, 35.566650040), (-88.939739855, 35.565602763), (-88.923517855, 35.565672581), (-88.923002871, 35.569512530), (-88.918239268, 35.573177764), (-88.922917040, 35.573142858), (-88.922187479, 35.576598498), (-88.925148638, 35.576842830), (-88.925320299, 35.574748527), (-88.926221522, 35.574783433), (-88.926092776, 35.573736261), (-88.931671770, 35.574224943), (-88.932358416, 35.573491919), (-88.932787569, 35.573491919), (-88.933173807, 35.573387201), (-88.932058008, 35.574224943), (-88.933216723, 35.574224943), (-88.933087977, 35.575621160), (-88.929998072, 35.575795685), (-88.930384310, 35.576877735), (-88.933087977, 35.576773021), (-88.932959231, 35.581868934), (-88.926350268, 35.581868934), (-88.926436098, 35.582392468), (-88.929826411, 35.582497175), (-88.930856379, 35.582287761), (-88.931285532, 35.582462272), (-88.935147913, 35.582357566), (-88.934976252, 35.587557823), (-88.934933337, 35.589233002), (-88.934804590, 35.594014049), (-88.935190829, 35.594153637), (-88.935190829, 35.594851575), (-88.935619982, 35.594886472), (-88.935748728, 35.594048946), (-88.935319575, 35.593699974), (-88.935491236, 35.589547094), (-88.943602236, 35.590245072), (-88.944160136, 35.572898514), (-88.945404681, 35.571188086), (-88.946434649, 35.570734293), (-88.947121294, 35.570489942), (-88.948151263, 35.570489942), (-88.948151263, 35.570839015), (-88.953687342, 35.571048458), (-88.954073580, 35.566126403), (-88.947378786, 35.565812219), (-88.947078379, 35.567662396), (-88.939825686, 35.567592579), (-88.939525278, 35.569023820), (-88.938838633, 35.570943737), (-88.938323649, 35.572828701), (-88.936735781, 35.572793795), (-88.936735781, 35.574364566), (-88.935834559, 35.574155131), (-88.935920389, 35.572863608), (-88.934032114, 35.572619263), (-88.934032114, 35.573282482), (-88.933474215, 35.572898514), (-88.933688792, 35.572340011), (-88.936263712, 35.568988912)

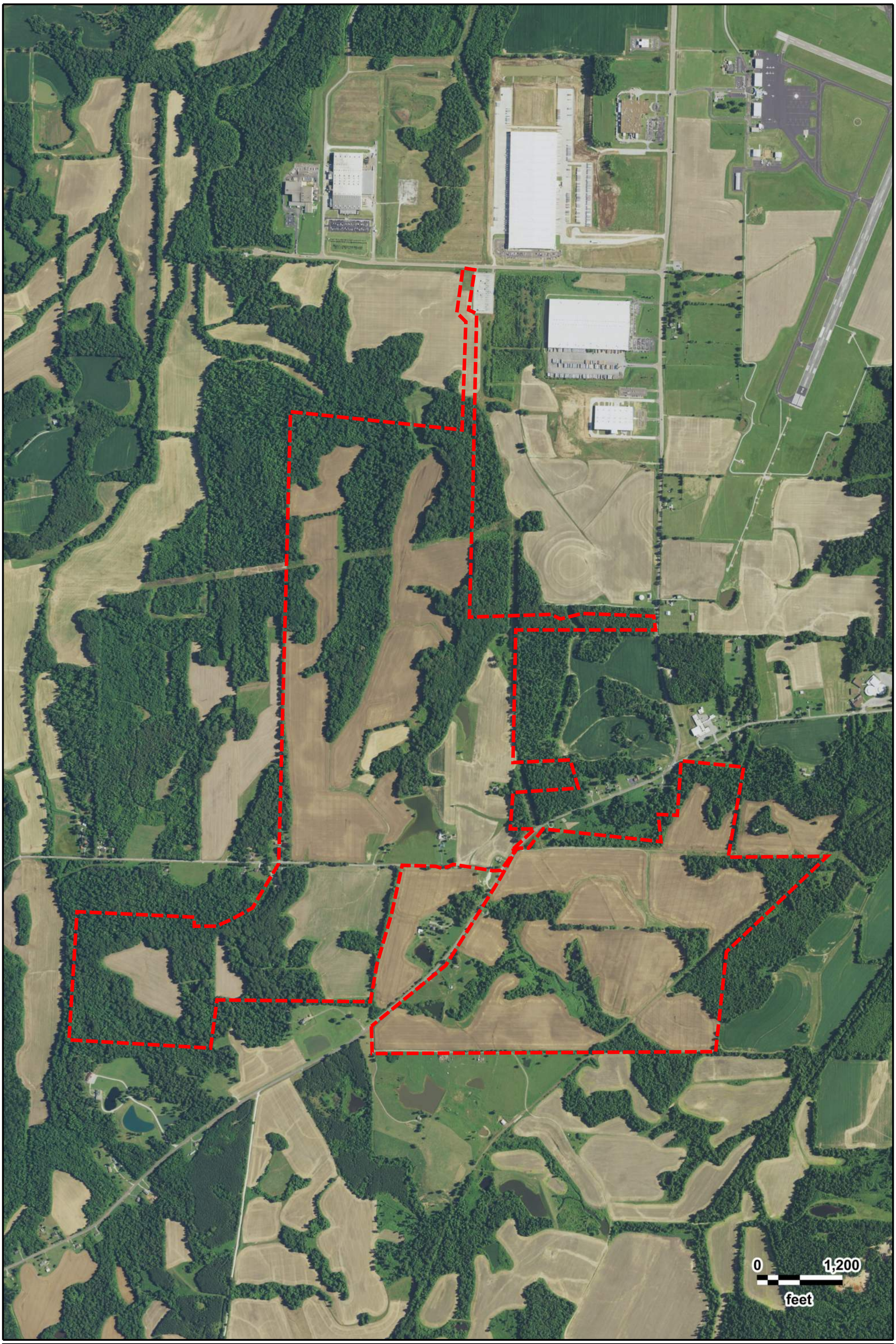


N
W E
S

McKellar Site
USDA
2018

GeoSearch

JOB #: 354123 - 05/28/2020

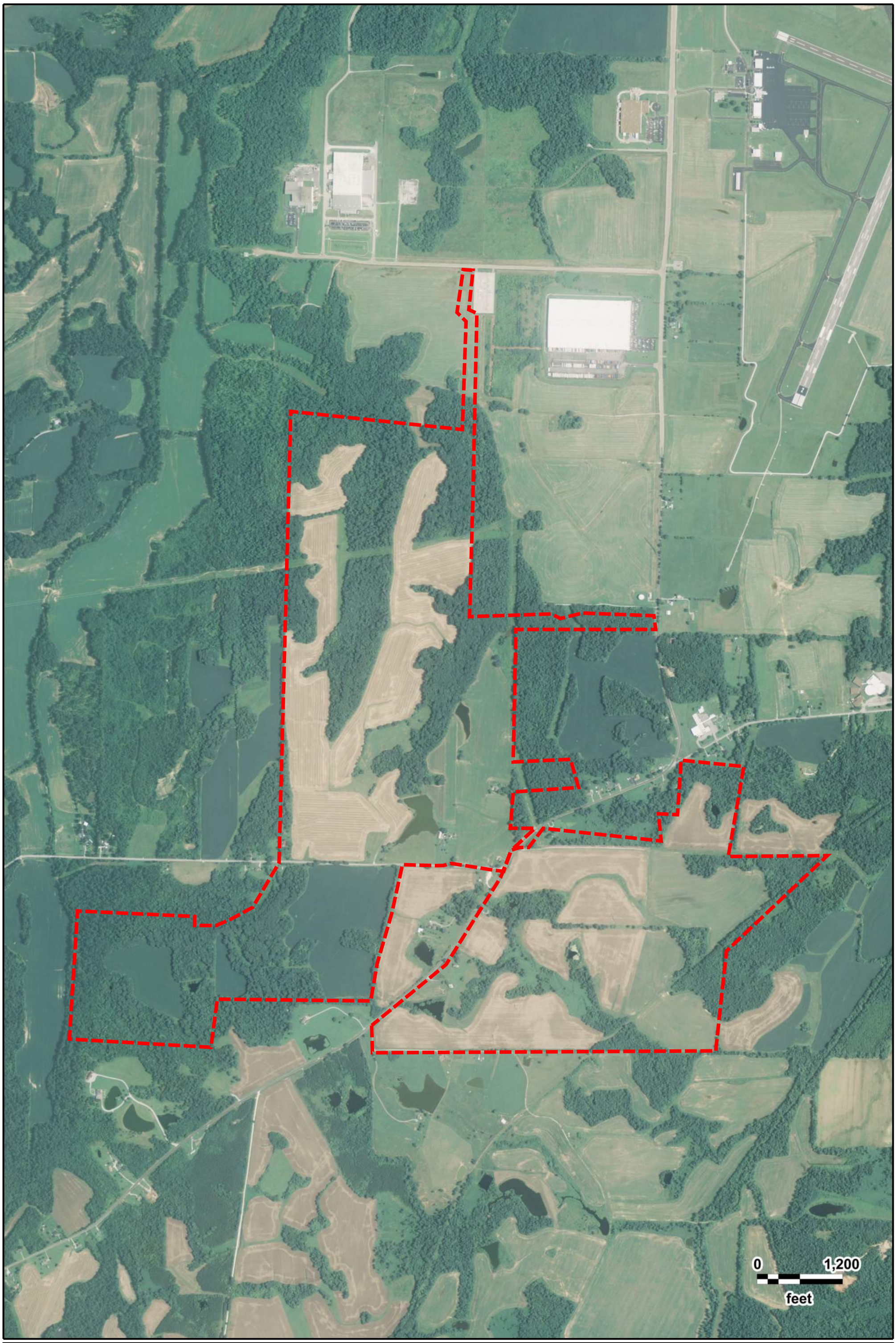


N
W E
S

McKellar Site
USDA
2016

GeoSearch

JOB #: 354123 - 05/28/2020

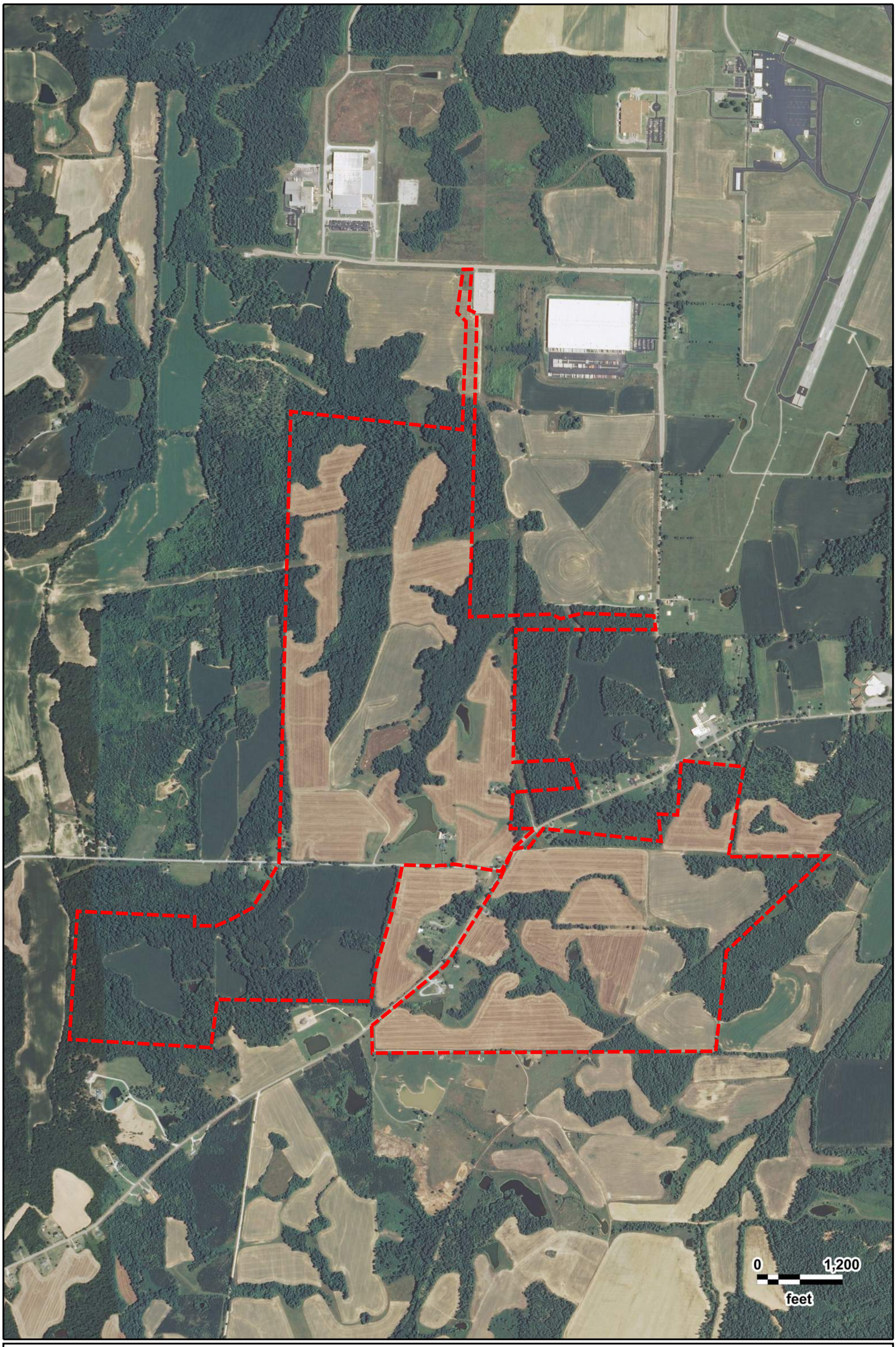


N
W E
S

McKellar Site
USDA
2014

GeoSearch

JOB #: 354123 - 05/28/2020

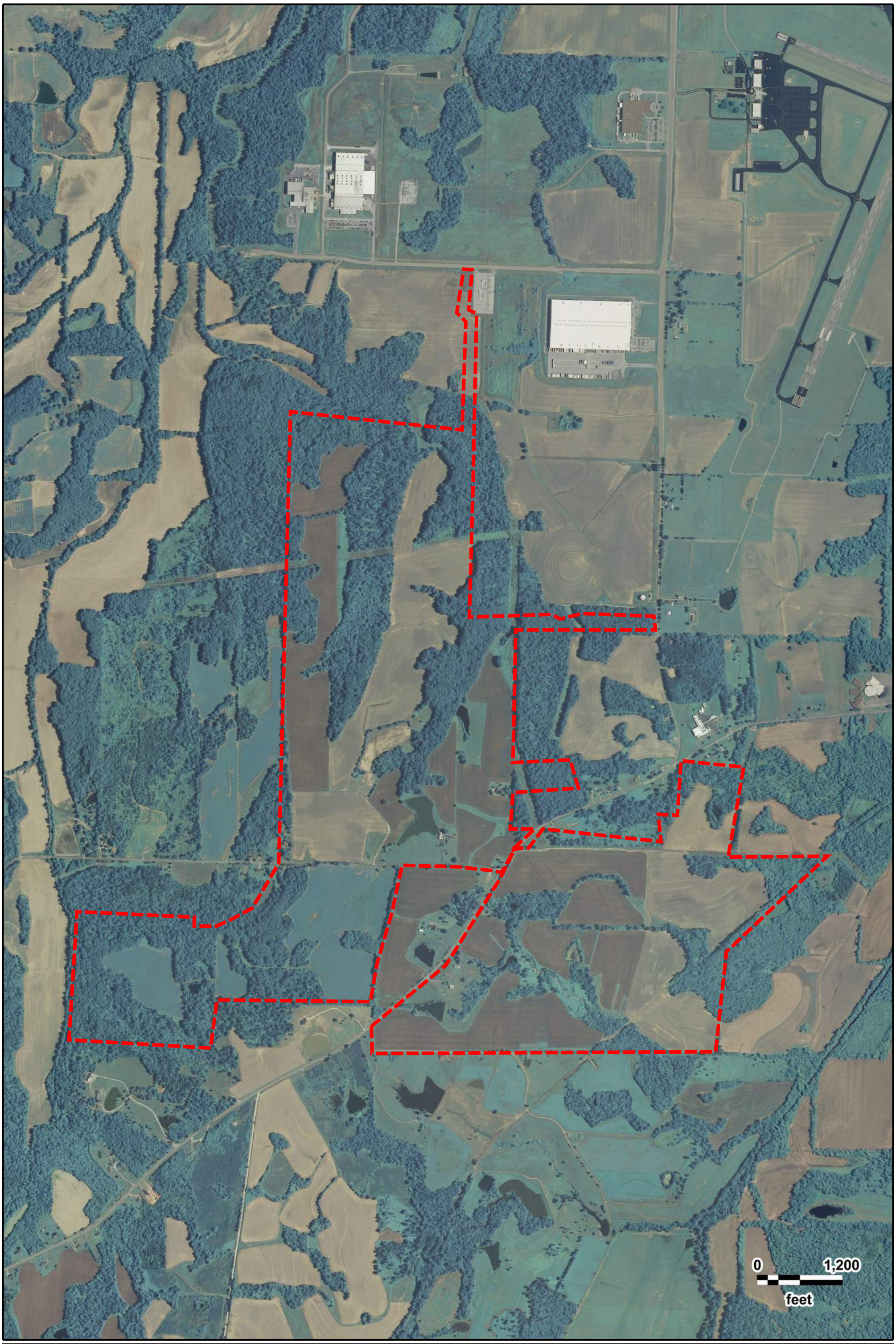


N
W E
S

McKellar Site
USDA
2012

GeoSearch

JOB #: 354123 - 05/28/2020



N
W E
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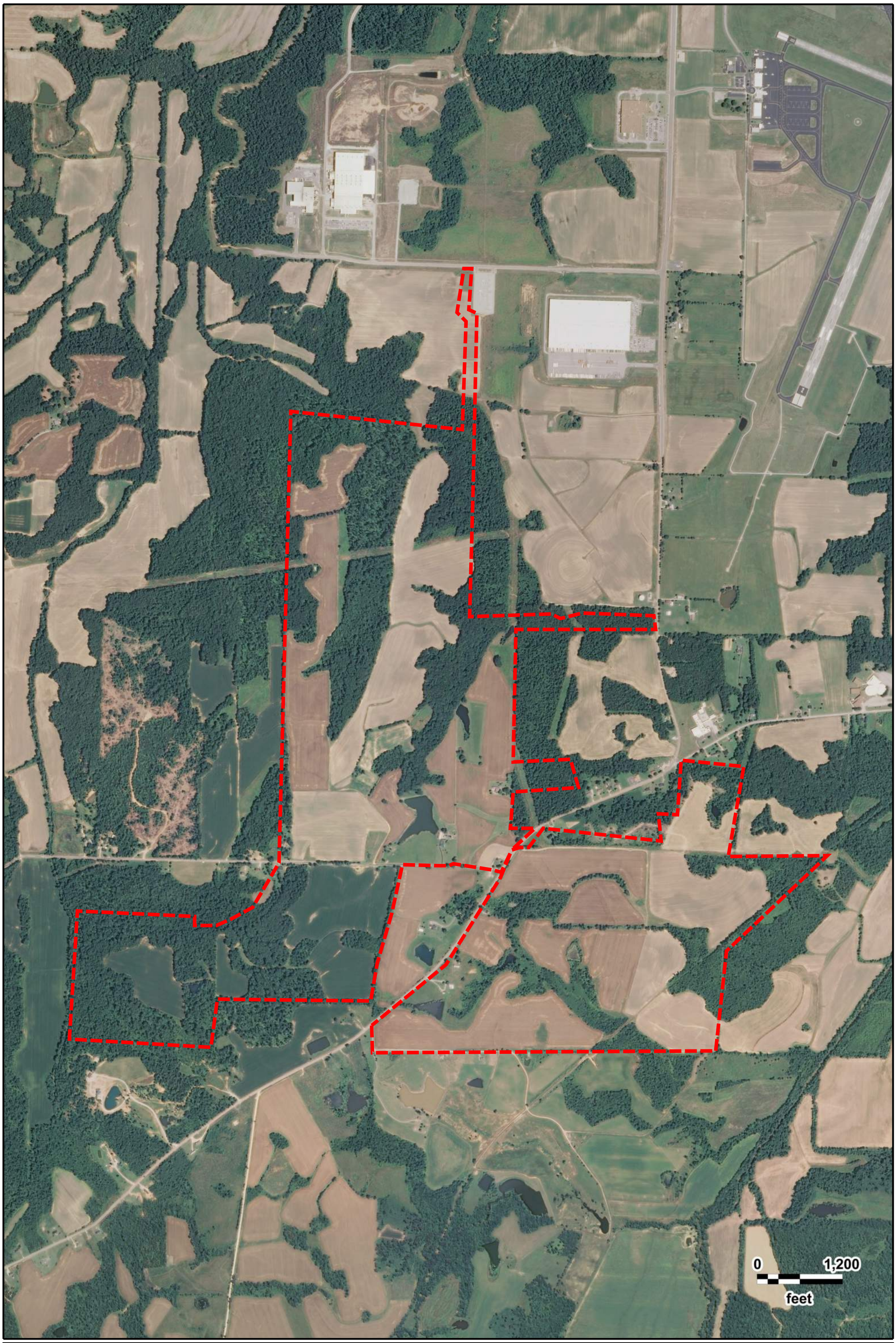
McKellar Site
USDA
2010

GeoSearch

JOB #: 354123 - 05/28/2020



N
W E
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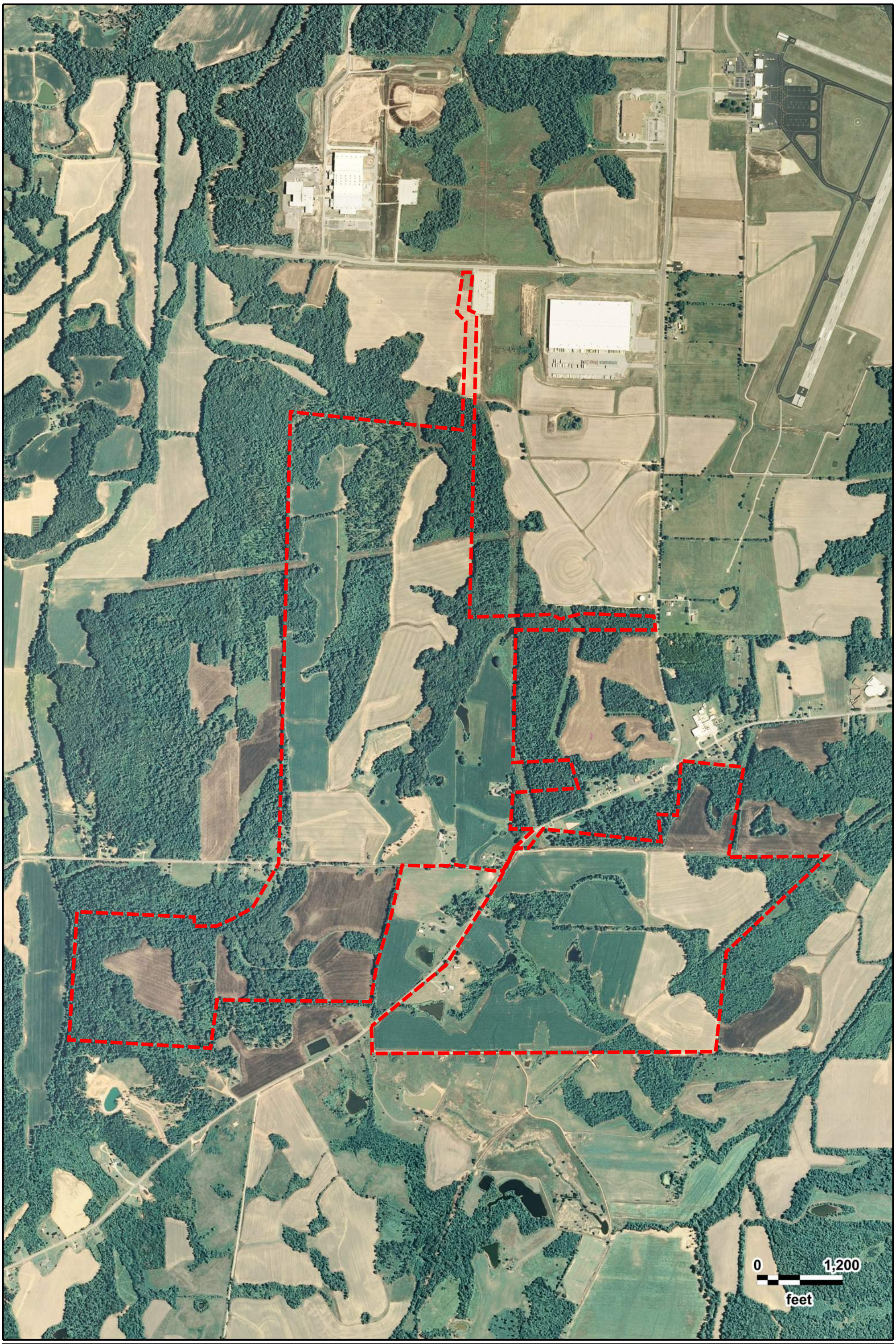
McKellar Site
USDA
2008

GeoSearch

JOB #: 354123 - 05/28/2020



N
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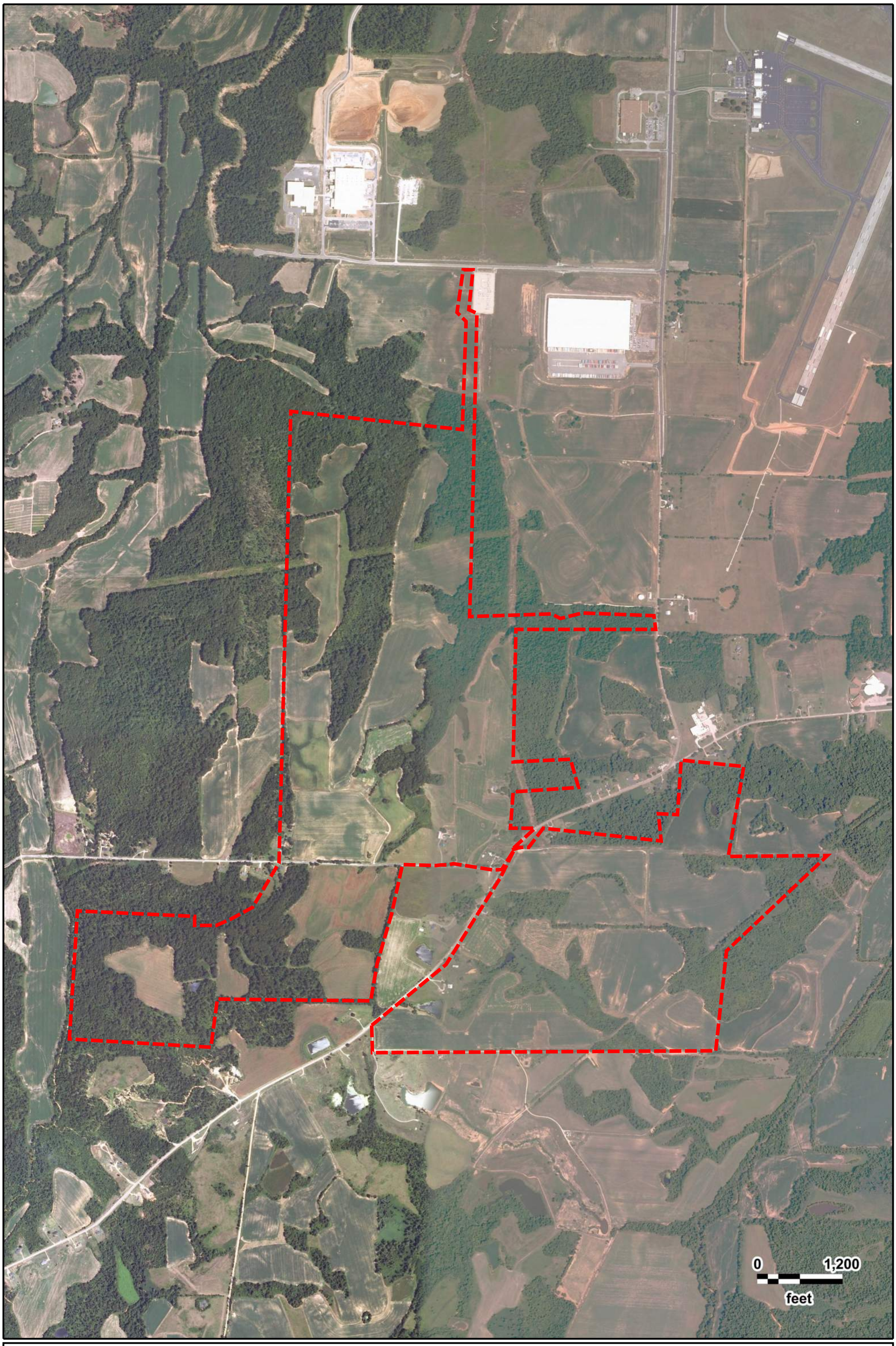
McKellar Site
USDA
2007

GeoSearch

JOB #: 354123 - 05/28/2020



N
W E
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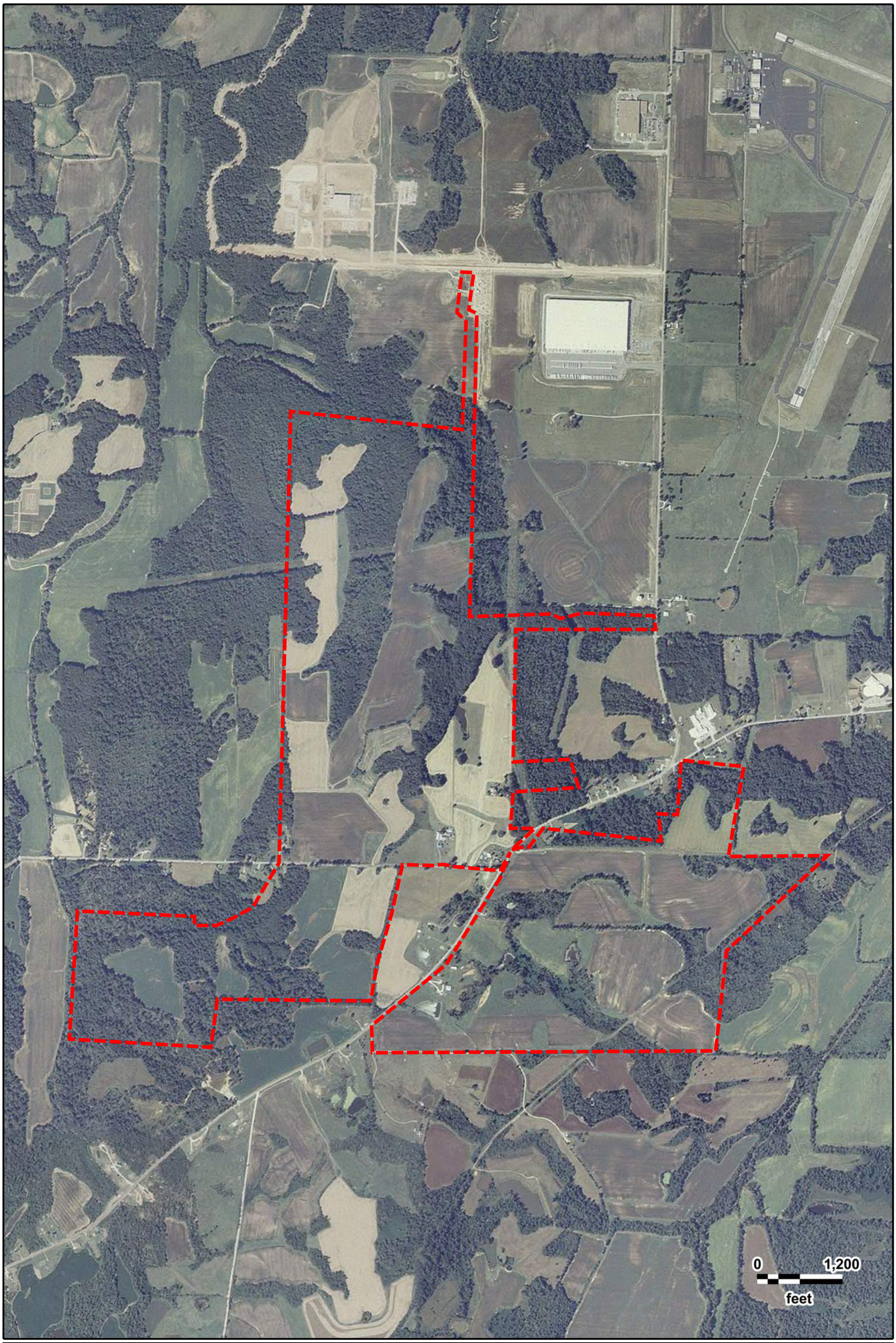
McKellar Site
USDA
2006

GeoSearch

JOB #: 354123 - 05/28/2020

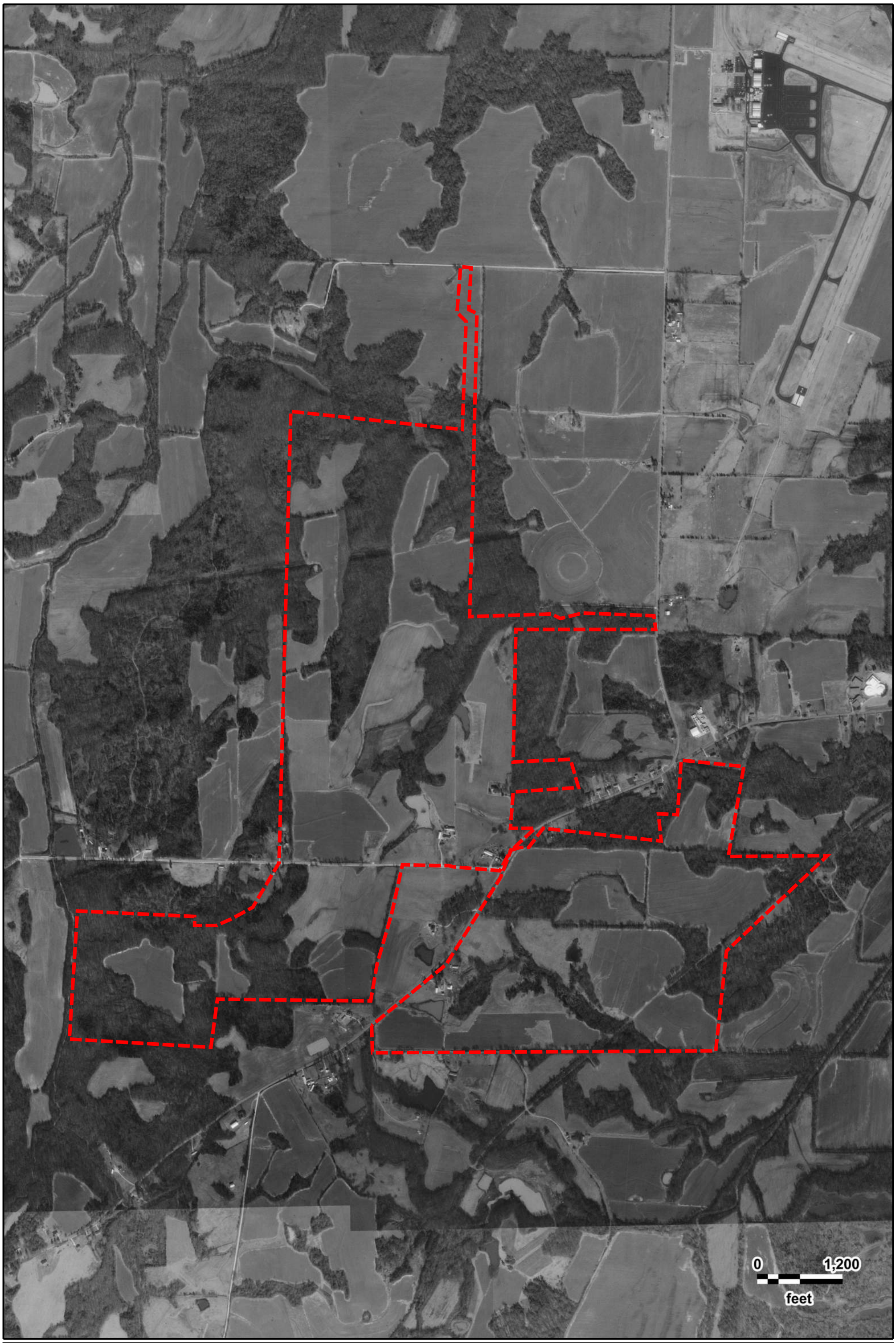


N
W E
S

McKellar Site
USDA
2004

GeoSearch

JOB #: 354123 - 05/28/2020



N
W E
S

McKellar Site
USGS
02/01/1997

GeoSearch

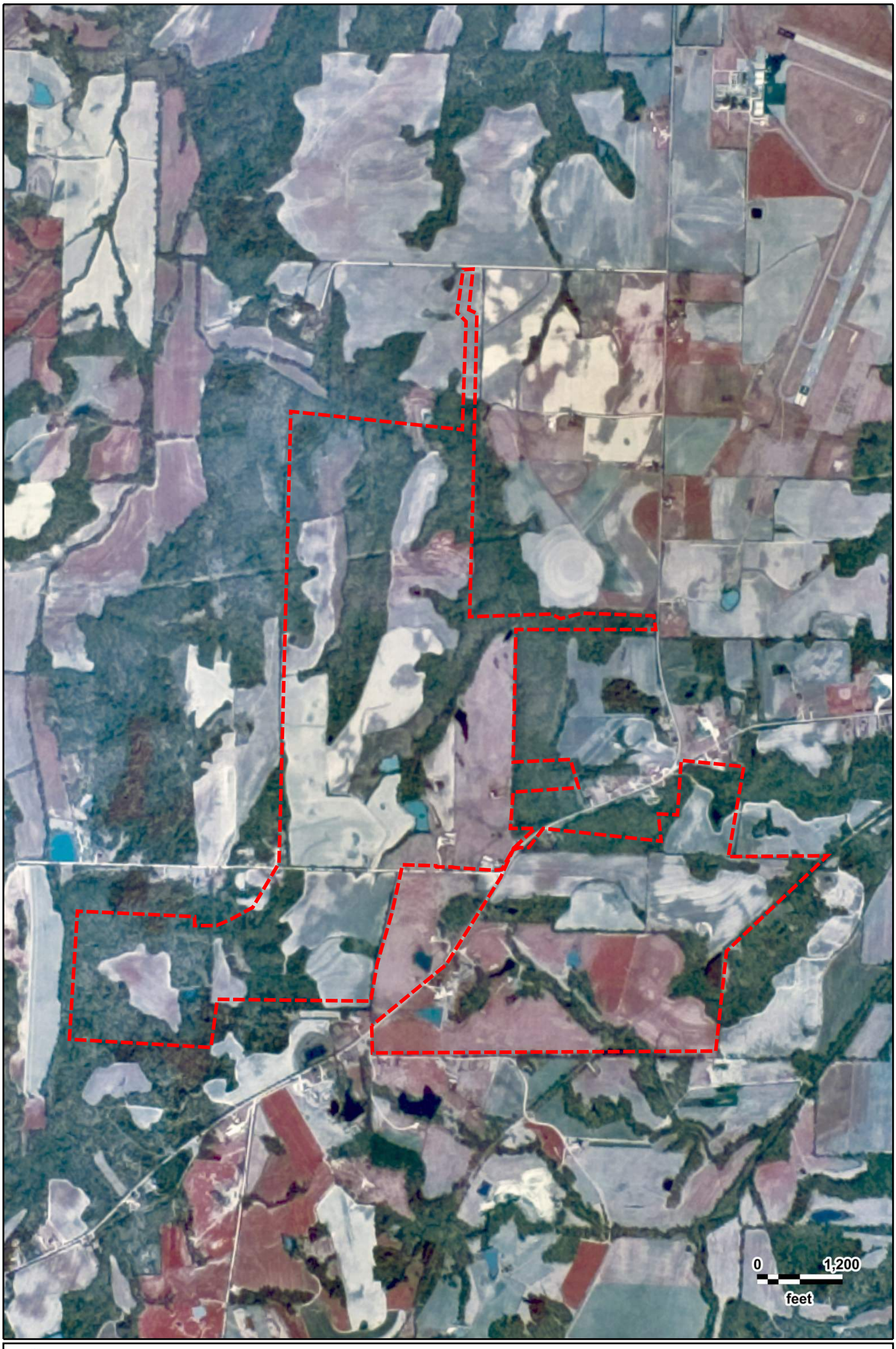
JOB #: 354123 - 05/28/2020

N
W E
S

McKellar Site
USGS
04/04/1992

GeoSearch

JOB #: 354123 - 05/28/2020



N
W E
S

McKellar Site
USGS
03/19/1985

GeoSearch

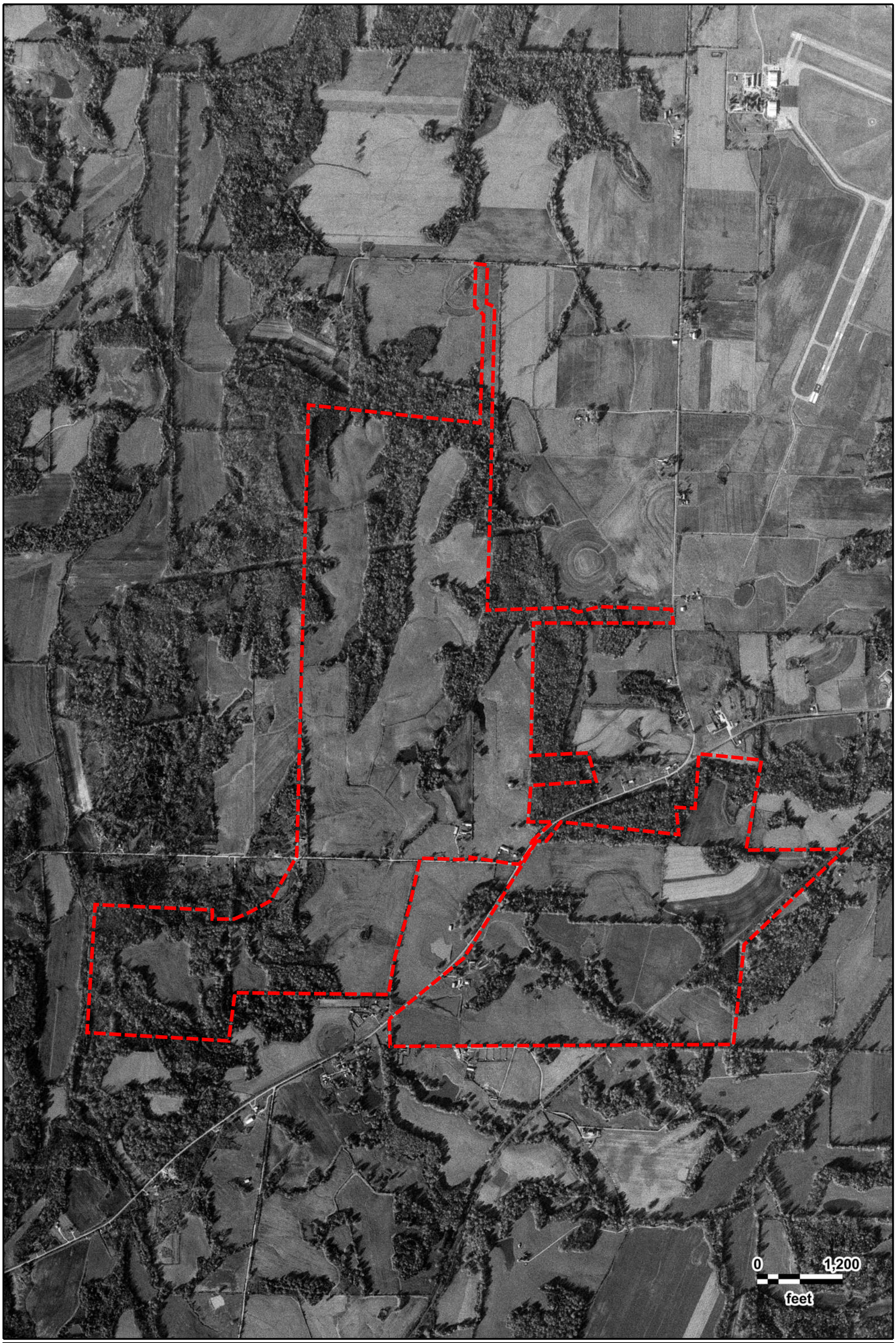
JOB #: 354123 - 05/28/2020

N
W E
S

McKellar Site
USGS
03/31/1981

GeoSearch

JOB #: 354123 - 05/28/2020

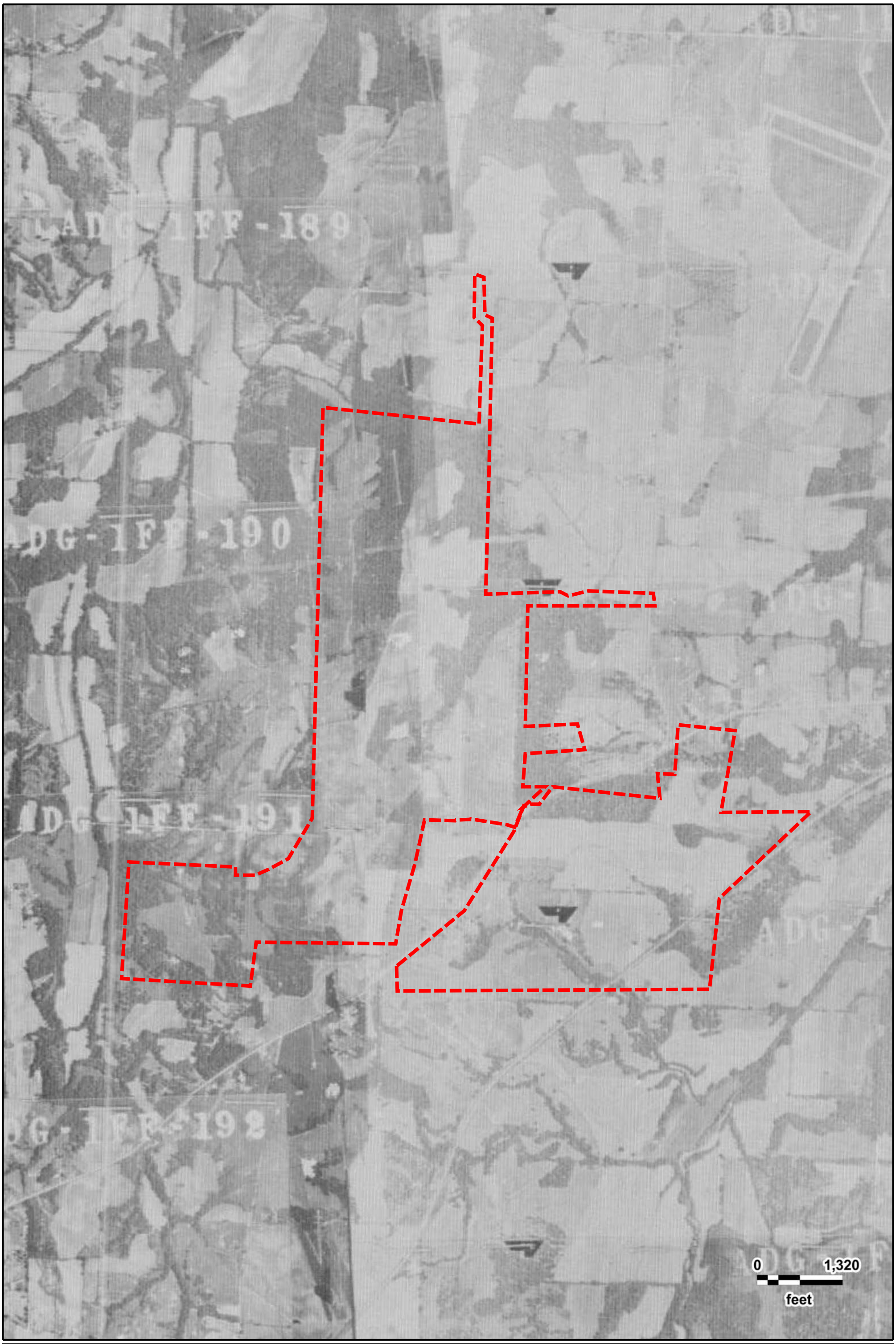


N
W E
S

McKellar Site
USGS
11/10/1975

GeoSearch

JOB #: 354123 - 05/28/2020

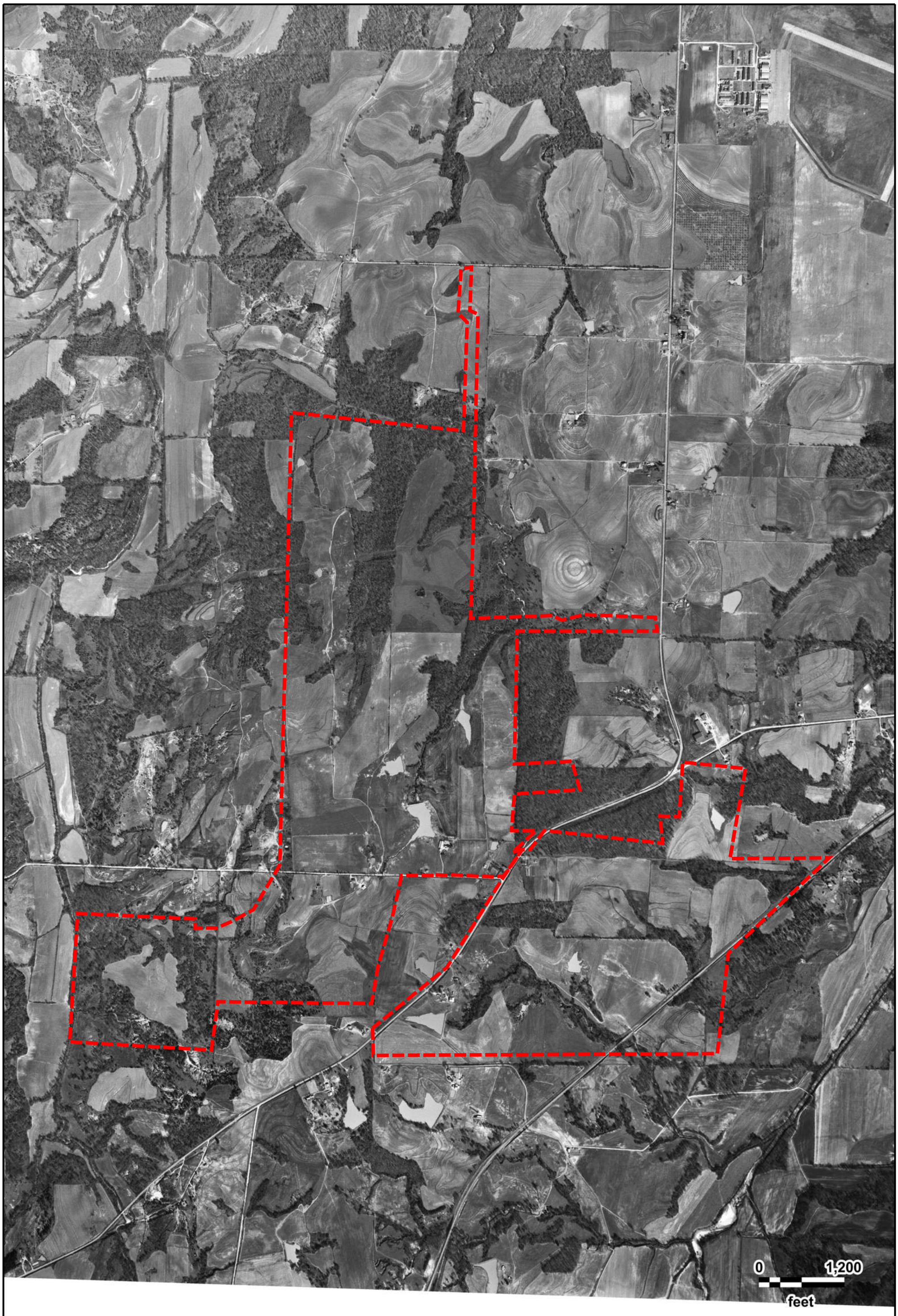


N
W E
S

McKellar Site
ASCS
05/12/1965

GeoSearch

JOB #: 354123 - 05/28/2020



N
W E
S

McKellar Site
USGS
02/29/1956

GeoSearch

JOB #: 354123 - 05/28/2020

N
W E
S

McKellar Site
AMS
10/23/1952

GeoSearch

JOB #: 354123 - 05/28/2020

N
W E
S

McKellar Site
USGS
03/31/1947

GeoSearch

JOB #: 354123 - 05/28/2020

N
W E
S

McKellar Site
ASCS
05/24/1941

GeoSearch

JOB #: 354123 - 05/28/2020

Aerial Research Summary

Date	Source	Scale	Frame
2018	USDA	1" = 1200'	N/A
2016	USDA	1" = 1200'	N/A
2014	USDA	1" = 1200'	N/A
2012	USDA	1" = 1200'	N/A
2010	USDA	1" = 1200'	N/A
2008	USDA	1" = 1200'	N/A
2007	USDA	1" = 1200'	N/A
2006	USDA	1" = 1200'	N/A
2004	USDA	1" = 1200'	N/A
02/01/1997	USGS	1" = 1200'	N/A
04/04/1992	USGS	1" = 1200'	4679-181
03/19/1985	USGS	1" = 1200'	157-172
03/31/1981	USGS	1" = 1200'	433-44
11/10/1975	USGS	1" = 1200'	2-37
05/12/1965	ASCS	1" = 1320'	PI-4
02/29/1956	USGS	1" = 1320'	2-98
10/23/1952	AMS	1" = 1200'	831
03/31/1947	USGS	1" = 1200'	3-26
05/24/1941	ASCS	1" = 1320'	PI-3

Appendix E:
Historic Topographic Maps

GeoSearch
On time. On target. In touch.™

Historical Topographic Maps

NEW: *GeoLens by Geosearch*

Target Property:

McKellar Site
Womack Ln
Jackson, Madison, Tennessee 38301

Prepared For:

Barge Design Solutions

Order #: 147402
Job #: 354122
Project #:
Date: 5/28/2020

Target Property Summary

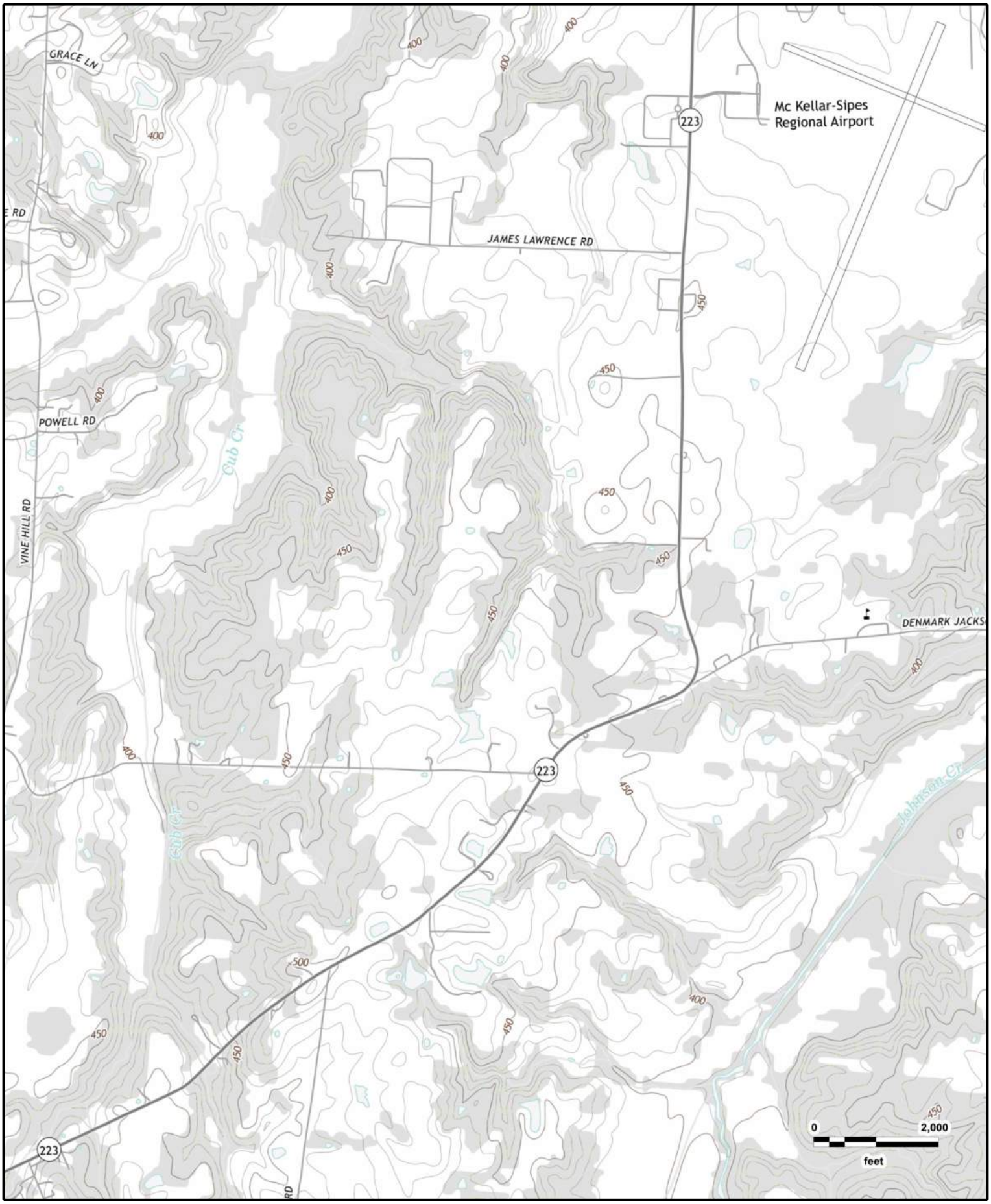
McKellar Site
Womack Ln
Jackson, Madison, Tennessee 38301

USGS Quadrangle: ***Westover***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-88.939782770, 35.566650040), (-88.939739855, 35.565602763), (-88.923517855, 35.565672581), (-88.923002871, 35.569512530), (-88.918239268, 35.573177764), (-88.922917040, 35.573142858), (-88.922187479, 35.576598498), (-88.925148638, 35.576842830), (-88.925320299, 35.574748527), (-88.926221522, 35.574783433), (-88.926092776, 35.573736261), (-88.931671770, 35.574224943), (-88.932358416, 35.573491919), (-88.932787569, 35.573491919), (-88.933173807, 35.573387201), (-88.932058008, 35.574224943), (-88.933216723, 35.574224943), (-88.933087977, 35.575621160), (-88.929998072, 35.575795685), (-88.930384310, 35.576877735), (-88.933087977, 35.576773021), (-88.932959231, 35.581868934), (-88.926350268, 35.581868934), (-88.926436098, 35.582392468), (-88.929826411, 35.582497175), (-88.930856379, 35.582287761), (-88.931285532, 35.582462272), (-88.935147913, 35.582357566), (-88.934976252, 35.587557823), (-88.934933337, 35.589233002), (-88.934804590, 35.594014049), (-88.935190829, 35.594153637), (-88.935190829, 35.594851575), (-88.935619982, 35.594886472), (-88.935748728, 35.594048946), (-88.935319575, 35.593699974), (-88.935491236, 35.589547094), (-88.943602236, 35.590245072), (-88.944160136, 35.572898514), (-88.945404681, 35.571188086), (-88.946434649, 35.570734293), (-88.947121294, 35.570489942), (-88.948151263, 35.570489942), (-88.948151263, 35.570839015), (-88.953687342, 35.571048458), (-88.954073580, 35.566126403), (-88.947378786, 35.565812219), (-88.947078379, 35.567662396), (-88.939825686, 35.567592579), (-88.939525278, 35.569023820), (-88.938838633, 35.570943737), (-88.938323649, 35.572828701), (-88.936735781, 35.572793795), (-88.936735781, 35.574364566), (-88.935834559, 35.574155131), (-88.935920389, 35.572863608), (-88.934032114, 35.572619263), (-88.934032114, 35.573282482), (-88.933474215, 35.572898514), (-88.933688792, 35.572340011), (-88.936263712, 35.568988912)

Topographic Map Summary

Date	Quadrangle	Scale
2013	WESTOVER, TN	1" = 2000'
1959 PHOTOINSPECTED 1981	WESTOVER, TN	1" = 2000'
1959 PHOTOREVISED 1980	WESTOVER, TN	1" = 2000'
1959	WESTOVER, TN	1" = 2000'

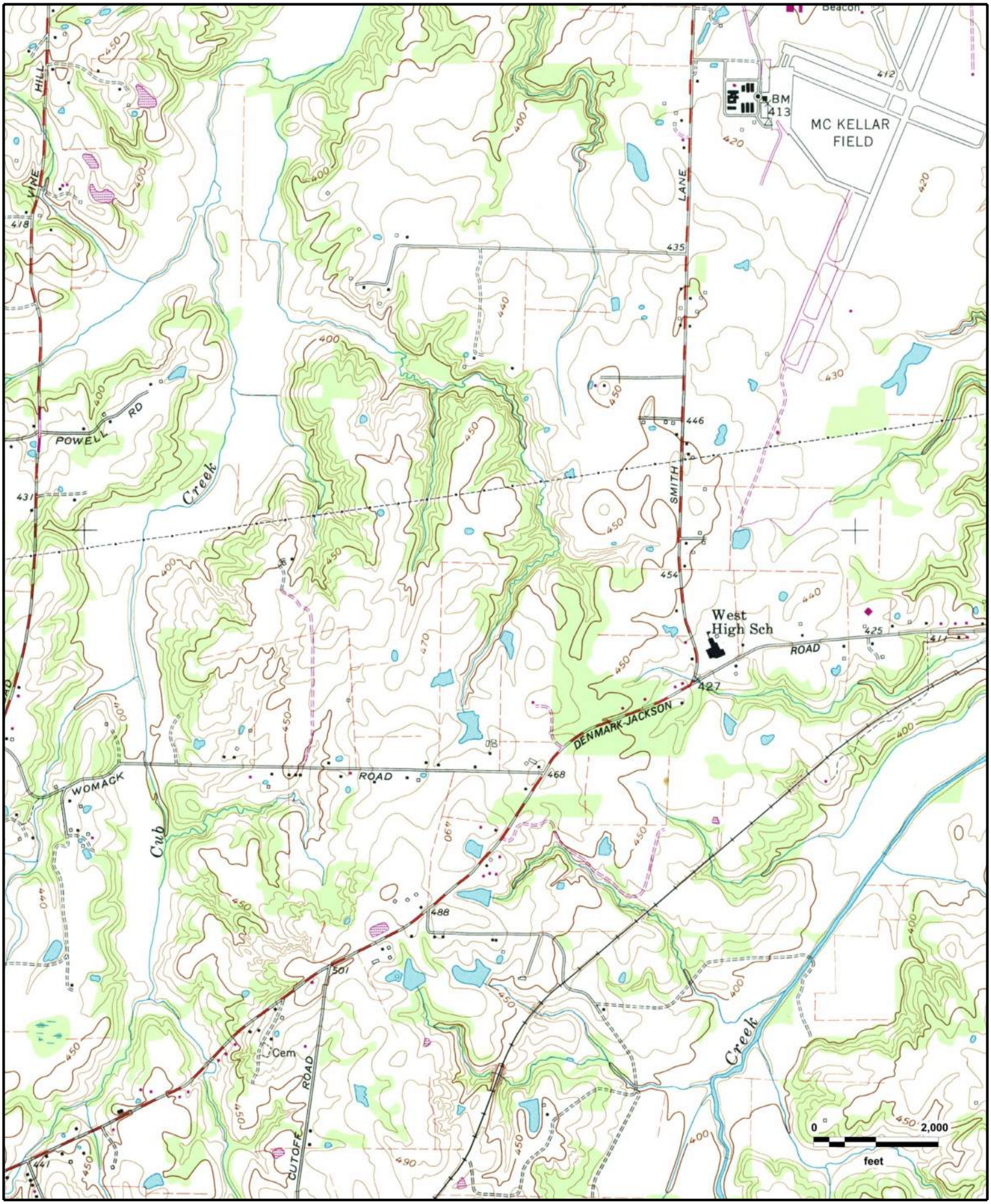


N
W E
S

McKellar Site
WESTOVER, TN (2013)

GeoSearch

JOB #: 354122 - 05/28/2020

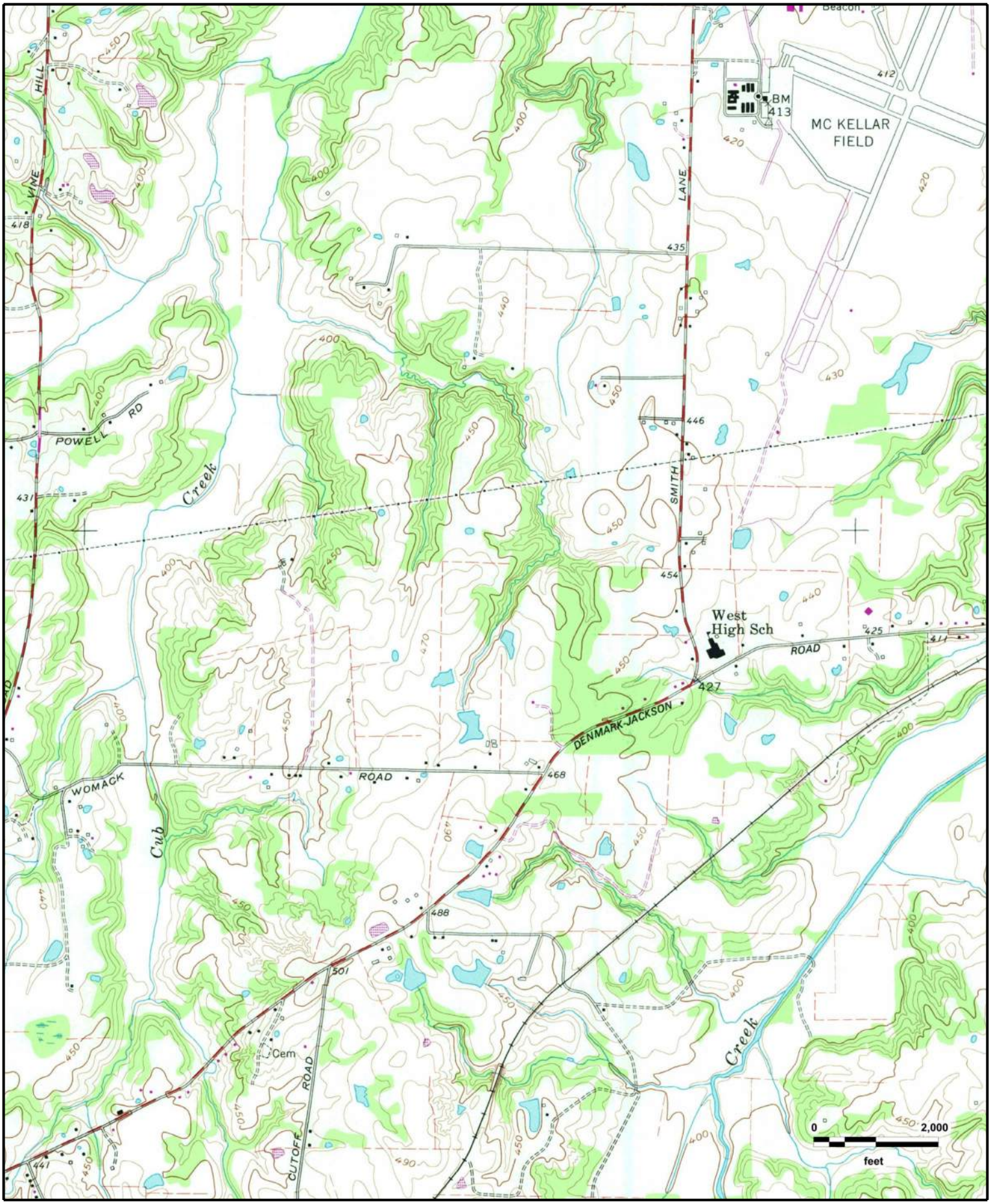


N
W E
S

McKellar Site
WESTOVER, TN (1981)

GeoSearch

JOB #: 354122 - 05/28/2020

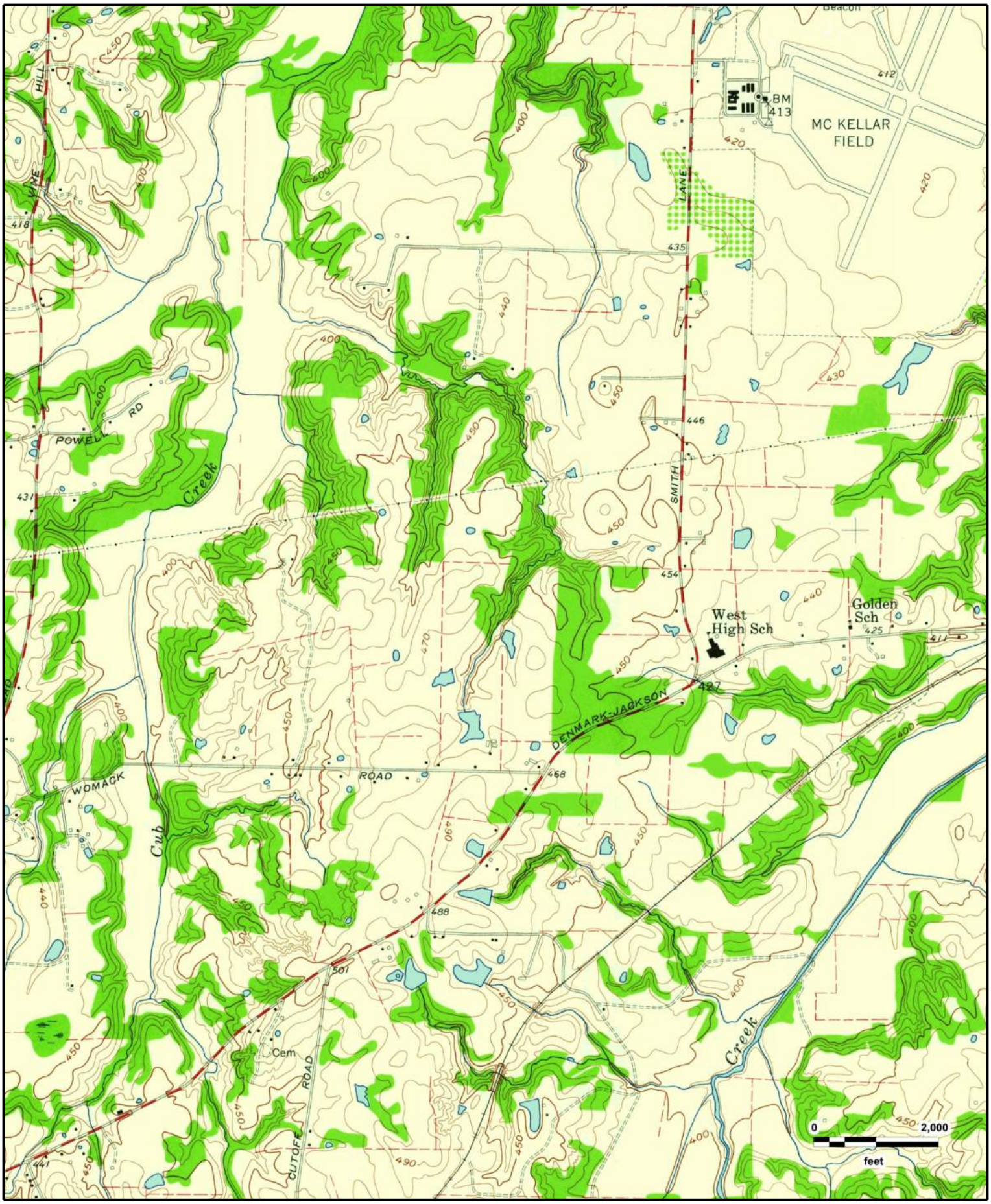


N
W E
S

McKellar Site
WESTOVER, TN (1980)

GeoSearch

JOB #: 354122 - 05/28/2020



N
W E
S

McKellar Site
WESTOVER, TN (1959)

GeoSearch

JOB #: 354122 - 05/28/2020

Appendix F:
Historic Sanborn Maps

GeoSearch

On time. On target. In touch.™

Fire Insurance Map Abstract

Target Property:

McKellar Site

Womack Ln, Jackson, Madison, Tennessee, 38301

Prepared For:

Barge Design Solutions

Order #: 147402

Job #: 354127

Project #:

Date #: 05/28/20

phone: 888-396-0042 · fax: 512-472-9967 · www.Geo-Search.com

GeoSearch FIM

Date: 05/28/20

GS Job Number: 147402

Company Name: Barge Design Solutions

Project Number:

Site Information: McKellar Site
Womack Ln, Jackson, Madison, Tennessee, 38301

The collections of fire insurance maps listed below were reviewed according to the site information supplied by client. Based on the information provided, no coverage is available.

Library of Congress
University Publications of America
Other Libraries (universities, state, local, etc.).

Appendix G:
City Directory Abstract

City Directory Target Property Address

Target Property:

Denmark Jackson Rd,

Denmark, TN 38301

Prepared For:
Barge Design Solutions

Order #: 147402

Project #:

Date: 5/26/2020

484 DENMARK JACKSON RD

2019	BOWERS MAXINE	INFOUSA	NORTH CENTRAL

485 DENMARK JACKSON RD

2019	THEUS MARY	INFOUSA	NORTH CENTRAL
2019	TUCKER MALCHUS	INFOUSA	NORTH CENTRAL
2014	TUCKER MALCHUS	INFOUSA	NORTH CENTRAL

494 DENMARK JACKSON RD

2019	BROWN LORA	INFOUSA	NORTH CENTRAL
2008	BROWN TRAVIS	INFOUSA	SOUTH
2002	BROWN TRAVIS	INFOUSA	SOUTH

518 DENMARK JACKSON RD

2014	MURPHY RUBY	INFOUSA	NORTH CENTRAL

535 DENMARK JACKSON RD

2019	FAMILY CHRISTIAN SCHOOL	INFOUSA	NORTH CENTRAL
2019	FAMILY WORSHIP CTR OF JACKSON	INFOUSA	NORTH CENTRAL
2008	DENMARK HEADSTART	INFOUSA	SOUTH
2002	DENMARK HEADSTART	INFOUSA	SOUTH

568 DENMARK JACKSON RD

2019	RUTHERFORD SHAWANNA	INFOUSA	NORTH CENTRAL
2014	RUTHERFORD SHAWANNA	INFOUSA	NORTH CENTRAL
2008	COLE GLORIA	INFOUSA	SOUTH
2002	COLE GLORIA	INFOUSA	SOUTH

574 DENMARK JACKSON RD

2008	GLENN WILLIE	INFOUSA	SOUTH
2002	GLENN WILLIE	INFOUSA	SOUTH

575 DENMARK JACKSON RD

2014	HIGHWAY 223 USED CARS	INFOUSA	NORTH CENTRAL
2014	IVIE LASHUNDA	INFOUSA	NORTH CENTRAL
2008	GRAY LOUISE	INFOUSA	SOUTH
2008	GRAY WILLIAM	INFOUSA	SOUTH
2008	HIGHWAY 223 USED CARS	INFOUSA	SOUTH
2002	GRAY LOUISE	INFOUSA	SOUTH

2002	GRAY WILLIAM	INFOUSA	SOUTH
2002	HIGHWAY 223 USED CARS	INFOUSA	SOUTH
578 DENMARK JACKSON RD			
2019	BRADFORD KIMBERLY	INFOUSA	NORTH CENTRAL
2008	SHAW JOESPH	INFOUSA	SOUTH
2002	SHAW JOESPH	INFOUSA	SOUTH
613 DENMARK JACKSON RD			
2019	OLD DENMARK ROAD CHR OF CHRIST	INFOUSA	NORTH CENTRAL
2014	OLD DENMARK ROAD CHURCH-CHRIST	INFOUSA	NORTH CENTRAL
635 DENMARK JACKSON RD			
2019	MCKINNEY BEIGE	INFOUSA	NORTH CENTRAL
2014	MCKINNEY BEIGE	INFOUSA	NORTH CENTRAL
2008	MCKINNEY B	INFOUSA	SOUTH
2008	MCKINNEY B	INFOUSA	SOUTH
2002	MCKINNEY B	INFOUSA	SOUTH
2002	MCKINNEY B	INFOUSA	SOUTH
645 DENMARK JACKSON RD			
2019	CURRY THOMAS	INFOUSA	NORTH CENTRAL
2014	CURRY THOMAS	INFOUSA	NORTH CENTRAL
659 DENMARK JACKSON RD			
2019	MANN MILDRED	INFOUSA	NORTH CENTRAL
2014	MANN MILDRED	INFOUSA	NORTH CENTRAL
2008	MANN MILDRED	INFOUSA	SOUTH
2002	MANN MILDRED	INFOUSA	SOUTH
700 DENMARK JACKSON RD			
2019	TAYLOR MYCENAE	INFOUSA	NORTH CENTRAL
2014	TAYLOR MYCENAE	INFOUSA	NORTH CENTRAL
2008	TAYLOR MYCENAE	INFOUSA	SOUTH
2002	TAYLOR MYCENAE	INFOUSA	SOUTH

Comment: No coverage available for Denmark prior to 2002 at the time of this report.

Appendix H:
Environmental Lien Search

GeoSearch
On time. On target. In touch.™

Environmental Lien

Target Property:

Addtl McKellar Acreage
36 Womack Ln
Denmark, Madison County, Tennessee 38391

Prepared For:

Barge Design Solutions

Order #: 157166
Job #: 383436
Date: 11/18/2020

phone: 888-396-0042 · fax: 512-472-9967 · www.geo-search.com

TARGET PROPERTY SUMMARY

Addtl McKellar Acreage
36 Womack Ln
Denmark, Madison County, Tennessee 38391

USGS Quadrangle: ***Westover, TN***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-88.936574, 35.573848), (-88.933345, 35.573028), (-88.933602, 35.572718), (-88.934091, 35.572836), (-88.934702, 35.572796), (-88.936145, 35.572862), (-88.936837, 35.572892), (-88.936574, 35.573848)

County/Parish Covered:
Madison (TN)

Zipcode(s) Covered:
Denmark TN: 38391
Jackson TN: 38301

State(s) Covered:
TN

GeoSearch
On time. On target. In touch.™

ENVIRONMENTAL LIEN/AUL SEARCH

We have done a search of Madison County Recorders Records for “Environmental Liens” only on the subject property as identified as 36 Womack Lane, Denmark, TN. Tax Parcel No. Map 97, Parcel 013.02 and find the following:

None found

We have done a search of Madison County Recorders Records for “Activity and Use Limitations” (AUL’s) only on the subject property as identified as 36 Womack Lane, Denmark, TN. Tax Parcel No. Map 97, Parcel 013.02 and find the following:

None found

Environmental Lien

Target Property:

McKellar Site
Womack Ln
Jackson, Madison County, Tennessee 38301

Prepared For:

Barge Design Solutions

Order #: 147402
Job #: 354121
Date: 06/03/2020

phone: 888-396-0042 · fax: 512-472-9967 · www.geo-search.com

TARGET PROPERTY SUMMARY

McKellar Site
Womack Ln
Jackson, Madison County, Tennessee 38301

USGS Quadrangle: ***Westover, TN***
Target Property Geometry: ***Area***

Target Property Longitude(s)/Latitude(s):
(-88.939783, 35.566650), (-88.939740, 35.565603), (-88.923518, 35.565673), (-88.923003, 35.569513), (-88.918239, 35.573178), (-88.922917, 35.573143), (-88.922187, 35.576598), (-88.925149, 35.576843), (-88.925320, 35.574749), (-88.926222, 35.574783), (-88.926093, 35.573736), (-88.931672, 35.574225), (-88.932358, 35.573492), (-88.932788, 35.573492), (-88.933174, 35.573387), (-88.932058, 35.574225), (-88.933217, 35.574225), (-88.933088, 35.575621), (-88.929998, 35.575796), (-88.930384, 35.576878), (-88.933088, 35.576773), (-88.932959, 35.581869), (-88.926350, 35.581869), (-88.926436, 35.582392), (-88.929826, 35.582497), (-88.930856, 35.582288), (-88.931286, 35.582462), (-88.935148, 35.582358), (-88.934976, 35.587558), (-88.934933, 35.589233), (-88.934805, 35.594014), (-88.935191, 35.594154), (-88.935191, 35.594852), (-88.935620, 35.594886), (-88.935749, 35.594049), (-88.935320, 35.593700), (-88.935491, 35.589547), (-88.943602, 35.590245), (-88.944160, 35.572899), (-88.945405, 35.571188), (-88.946435, 35.570734), (-88.947121, 35.570490), (-88.948151, 35.570490), (-88.948151, 35.570839), (-88.953687, 35.571048), (-88.954074, 35.566126), (-88.947379, 35.565812), (-88.947078, 35.567662), (-88.939826, 35.567593), (-88.939525, 35.569024), (-88.938839, 35.570944), (-88.938324, 35.572829), (-88.936736, 35.572794), (-88.936736, 35.574365), (-88.935835, 35.574155), (-88.935920, 35.572864), (-88.934032, 35.572619), (-88.934032, 35.573282), (-88.933474, 35.572899), (-88.933689, 35.572340), (-88.936264, 35.568989), (-88.939783, 35.566650)

County/Parish Covered:
Madison (TN)

Zipcode(s) Covered:
Denmark TN: 38391
Jackson TN: 38301

State(s) Covered:
TN

TARGET PROPERTY SUMMARY

GeoSearch
On time. On target. In touch.™

ENVIRONMENTAL LIEN/AUL SEARCH

We have done a search of Madison County Recorders Records for “Environmental Liens” only on the subject property as identified as Tax Parcel No. Map 97, Parcel 13.09, Jackson, TN. and find the following:

None found

We have done a search of Madison County Recorders Records for “Activity and Use Limitations” (AUL’s) only on the subject property as identified as Tax Parcel No. Map 97, Parcel 13.09, Jackson, TN. and find the following:

None found

GeoSearch
On time. On target. In touch.™

ENVIRONMENTAL LIEN/AUL SEARCH

We have done a search of Madison County Recorders Records for “Environmental Liens” only on the subject property as identified as Tax Parcel No. Map 97, Parcel 26.00, Jackson, TN. and find the following:

None found

We have done a search of Madison County Recorders Records for “Activity and Use Limitations” (AUL’s) only on the subject property as identified as Tax Parcel No. Map 97, Parcel 26.00, Jackson, TN. and find the following:

None found

GeoSearch
On time. On target. In touch.™

ENVIRONMENTAL LIEN/AUL SEARCH

We have done a search of Madison County Recorders Records for “Environmental Liens” only on the subject property as identified as Tax Parcel No. Map 97, Parcel 31.00, Jackson, TN. and find the following:

None found

We have done a search of Madison County Recorders Records for “Activity and Use Limitations” (AUL’s) only on the subject property as identified as Tax Parcel No. Map 97, Parcel 31.00, Jackson, TN. and find the following:

None found

GeoSearch
On time. On target. In touch.™

ENVIRONMENTAL LIEN/AUL SEARCH

We have done a search of Madison County Recorders Records for “Environmental Liens” only on the subject property as identified as Tax Parcel No. Map 97, Parcel 13.06, Jackson, TN. and find the following:

None found

We have done a search of Madison County Recorders Records for “Activity and Use Limitations” (AUL’s) only on the subject property as identified as Tax Parcel No. Map 97, Parcel 13.06, Jackson, TN. and find the following:

None found

GeoSearch
On time. On target. In touch.™

ENVIRONMENTAL LIEN/AUL SEARCH

We have done a search of Madison County Recorders Records for “Environmental Liens” only on the subject property as identified as Tax Parcel No. Map 97, Parcel 13.00, Jackson, TN. and find the following:

None found

We have done a search of Madison County Recorders Records for “Activity and Use Limitations” (AUL’s) only on the subject property as identified as Tax Parcel No. Map 97, Parcel 13.00, Jackson, TN. and find the following:

None found

GeoSearch
On time. On target. In touch.™

ENVIRONMENTAL LIEN/AUL SEARCH

We have done a search of Madison County Recorders Records for “Environmental Liens” only on the subject property as identified as Tax Parcel No. Map 97, Parcel 13.05, Jackson, TN. and find the following:

None found

We have done a search of Madison County Recorders Records for “Activity and Use Limitations” (AUL’s) only on the subject property as identified as Tax Parcel No. Map 97, Parcel 13.05, Jackson, TN. and find the following:

None found

Appendix I:
GeoSearch Radius Report

GeoSearch
On time. On target. In touch.™

Radius Report

GeoLens by GeoSearch

Target Property:

McKellar Site

Jackson, Madison County, Tennessee 38301

Prepared For:

Barge Design Solutions

Order #: 159419

Job #: 391093

Date: 12/30/2020

Table of Contents

Disclaimer

This report was designed by GeoSearch to meet or exceed the records search requirements of the All Appropriate Inquiries Rule (40 CFR ï¿½312.26) and the current version of the ASTM International E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process or, if applicable, the custom requirements requested by the entity that ordered this report. The records and databases of records used to compile this report were collected from various federal,state and local governmental entities. It is the goal of GeoSearch to meet or exceed the 40 CFR ï¿½312.26 and E1527 requirements for updating records by using the best available technology. GeoSearch contacts the appropriate governmental entities on a recurring basis. Depending on the frequency with which a record source or database of records is updated by the governmental entity, the data used to prepare this report may be updated monthly, quarterly, semi-annually, or annually.

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Target Property Summary

Target Property Information

McKellar Site
Jackson, Tennessee 38301

Coordinates
Area centroid (-88.936792, 35.5752399)
471 feet above sea level

USGS Quadrangle
Westover, TN

Geographic Coverage Information

County/Parish: Madison (TN)
ZipCode(s):
Jackson TN: 38301
Denmark TN: 38391

Database Summary

FEDERAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
EMERGENCY RESPONSE NOTIFICATION SYSTEM	ERNSTN	0	0	TP/AP
FEDERAL ENGINEERING INSTITUTIONAL CONTROL SITES	EC	0	0	TP/AP
LAND USE CONTROL INFORMATION SYSTEM	LUCIS	0	0	TP/AP
RCRA SITES WITH CONTROLS	RCRASC	0	0	TP/AP
RESOURCE CONSERVATION & RECOVERY ACT - GENERATOR	RCRAGR04	0	0	0.1250
RESOURCE CONSERVATION & RECOVERY ACT - NON-GENERATOR	RCRANGR04	0	0	0.1250
BROWNFIELDS MANAGEMENT SYSTEM	BF	0	0	0.5000
DELISTED NATIONAL PRIORITIES LIST	DNPL	0	0	0.5000
NO LONGER REGULATED RCRA NON-CORRACTS TSD FACILITIES	NLRRCRAT	0	0	0.5000
RESOURCE CONSERVATION & RECOVERY ACT - NON-CORRACTS TREATMENT, STORAGE & DISPOSAL FACILITIES	RCRAT	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM	SEMS	0	0	0.5000
SUPERFUND ENTERPRISE MANAGEMENT SYSTEM ARCHIVED SITE INVENTORY	SEMSARCH	0	0	0.5000
NATIONAL PRIORITIES LIST	NPL	0	0	1.0000
NO LONGER REGULATED RCRA CORRECTIVE ACTION FACILITIES	NLRRCRAC	0	0	1.0000
PROPOSED NATIONAL PRIORITIES LIST	PNPL	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - CORRECTIVE ACTION FACILITIES	RCRAC	0	0	1.0000
RESOURCE CONSERVATION & RECOVERY ACT - SUBJECT TO CORRECTIVE ACTION FACILITIES	RCRASUBC	0	0	1.0000

SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
AEROMETRIC INFORMATION RETRIEVAL SYSTEM / AIR FACILITY SUBSYSTEM	AIRSAFS	0	0	TP/AP
BIENNIAL REPORTING SYSTEM	BRS	0	0	TP/AP
CERCLIS LIENS	SFLIENS	0	0	TP/AP
CLANDESTINE DRUG LABORATORY LOCATIONS	CDL	0	0	TP/AP
EPA DOCKET DATA	DOCKETS	0	0	TP/AP
ENFORCEMENT AND COMPLIANCE HISTORY INFORMATION	ECHOR04	2	0	TP/AP
FACILITY REGISTRY SYSTEM	FRSTN	1	0	TP/AP

Database Summary

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
HAZARDOUS MATERIALS INCIDENT REPORTING SYSTEM	HMIRSR04	0	0	TP/AP
HAZARDOUS WASTE COMPLIANCE DOCKET FACILITIES	HWCD	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM (FORMERLY DOCKETS)	ICIS	0	0	TP/AP
INTEGRATED COMPLIANCE INFORMATION SYSTEM NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	ICISNPDES	1	0	TP/AP
MATERIAL LICENSING TRACKING SYSTEM	MLTS	0	0	TP/AP
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM	NPDESR04	0	0	TP/AP
PCB ACTIVITY DATABASE SYSTEM	PADS	0	0	TP/AP
PERMIT COMPLIANCE SYSTEM	PCSR04	0	0	TP/AP
SEMS LIEN ON PROPERTY	SEMSLIENS	0	0	TP/AP
SSEHRI PFAS CONTAMINATION SITES	SSEHRIPFAS	0	0	TP/AP
SECTION SEVEN TRACKING SYSTEM	SSTS	0	0	TP/AP
TOXIC SUBSTANCE CONTROL ACT INVENTORY	TSCA	0	0	TP/AP
TOXICS RELEASE INVENTORY	TRI	0	0	TP/AP
ALTERNATIVE FUELING STATIONS	ALTFUELS	0	0	0.2500
FEMA OWNED STORAGE TANKS	FEMAUST	0	0	0.2500
HISTORICAL GAS STATIONS	HISTPST	0	0	0.2500
INTEGRATED COMPLIANCE INFORMATION SYSTEM DRYCLEANERS	ICISCLEANERS	0	0	0.2500
MINE SAFETY AND HEALTH ADMINISTRATION MASTER INDEX FILE	MSHA	0	0	0.2500
MINERAL RESOURCE DATA SYSTEM	MRDS	0	0	0.2500
OPEN DUMP INVENTORY	ODI	0	0	0.5000
SURFACE MINING CONTROL AND RECLAMATION ACT SITES	SMCRA	0	0	0.5000
URANIUM MILL TAILINGS RADIATION CONTROL ACT SITES	USUMTRCA	0	0	0.5000
DEPARTMENT OF DEFENSE SITES	DOD	0	0	1.0000
FORMER MILITARY NIKE MISSILE SITES	NMS	0	0	1.0000
FORMERLY USED DEFENSE SITES	FUDS	0	0	1.0000
FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM	FUSRAP	0	0	1.0000
RECORD OF DECISION SYSTEM	RODS	0	0	1.0000
SUB-TOTAL		4	0	

Database Summary

STATE (TN) LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
INSTITUTIONAL / ENGINEERING CONTROLS REGISTRY	ICEC	0	0	TP/AP
REGISTERED UNDERGROUND STORAGE TANKS	RST	0	0	0.2500
DELISTED PROMULGATED SITES	DELISTEDPS	0	0	0.5000
LANDFILL AND SOLID WASTE DISPOSAL SITES	LFSWDS	0	0	0.5000
LEAKING UNDERGROUND STORAGE TANKS	LST	0	0	0.5000
STATE REMEDIATION SITES	SRS	0	0	0.5000
VOLUNTARY CLEANUP AND BROWNFIELD SITES	VCPBF	0	0	0.5000
PROMULGATED INACTIVE HAZARDOUS WASTE SITES	PIHWS	0	0	1.0000
SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
CLANDESTINE METHAMPHETAMINE LABS	CDL	0	0	TP/AP
STATEWIDE PETROLEUM INCIDENT LOGGING SECTION SITES	SPILS	0	0	TP/AP
REGISTERED DRYCLEANING FACILITIES	CLEANERS	0	0	0.2500
SUB-TOTAL		0	0	

Database Summary

TRIBAL LISTING

Standard Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	USTR04	0	0	0.2500
LEAKING UNDERGROUND STORAGE TANKS ON TRIBAL LANDS	LUSTR04	0	0	0.5000
OPEN DUMP INVENTORY ON TRIBAL LANDS	ODINDIAN	0	0	0.5000
SUB-TOTAL		0	0	

Additional Environmental Records

Database	Acronym	Locatable	Unlocatable	Search Radius (miles)
INDIAN RESERVATIONS	INDIANRES	0	0	1.0000
SUB-TOTAL		0	0	
TOTAL		4	0	

Database Radius Summary

FEDERAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
AIRSAFS	0.0200	0	NS	NS	NS	NS	NS	0
BRS	0.0200	0	NS	NS	NS	NS	NS	0
CDL	0.0200	0	NS	NS	NS	NS	NS	0
DOCKETS	0.0200	0	NS	NS	NS	NS	NS	0
EC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
ECHOR04	0.0200	2	NS	NS	NS	NS	NS	2
ERNSTN	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
FRSTN	0.0200	1	NS	NS	NS	NS	NS	1
HMIRSR04	0.0200	0	NS	NS	NS	NS	NS	0
HWCD	0.0200	0	NS	NS	NS	NS	NS	0
ICIS	0.0200	0	NS	NS	NS	NS	NS	0
ICISNPDES	0.0200	1	NS	NS	NS	NS	NS	1
LUCIS	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
MLTS	0.0200	0	NS	NS	NS	NS	NS	0
NPDESR04	0.0200	0	NS	NS	NS	NS	NS	0
PADS	0.0200	0	NS	NS	NS	NS	NS	0
PCSR04	0.0200	0	NS	NS	NS	NS	NS	0
RCRASC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
SEMSLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SFLIENS	0.0200	0	NS	NS	NS	NS	NS	0
SSEHRIPFAS	0.0200	0	NS	NS	NS	NS	NS	0
SSTS	0.0200	0	NS	NS	NS	NS	NS	0
TRI	0.0200	0	NS	NS	NS	NS	NS	0
TSCA	0.0200	0	NS	NS	NS	NS	NS	0
RCRAGR04	**0.1250**	**0**	**0**	**NS**	**NS**	**NS**	**NS**	**0**
RCRANGR04	**0.1250**	**0**	**0**	**NS**	**NS**	**NS**	**NS**	**0**
ALTFUELS	0.2500	0	0	0	NS	NS	NS	0
FEMAUST	0.2500	0	0	0	NS	NS	NS	0
HISTPST	0.2500	0	0	0	NS	NS	NS	0
ICISCLEANERS	0.2500	0	0	0	NS	NS	NS	0
MRDS	0.2500	0	0	0	NS	NS	NS	0
MSHA	0.2500	0	0	0	NS	NS	NS	0
BF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
DNPL	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
NLRRCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**

Database Radius Summary

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
ODI	0.5000	0	0	0	0	NS	NS	0
RCRAT	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SEMS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SEMSARCH	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SMCRA	0.5000	0	0	0	0	NS	NS	0
USUMTRCA	0.5000	0	0	0	0	NS	NS	0
DOD	1.0000	0	0	0	0	0	NS	0
FUDS	1.0000	0	0	0	0	0	NS	0
FUSRAP	1.0000	0	0	0	0	0	NS	0
NLRRCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
NMS	1.0000	0	0	0	0	0	NS	0
NPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
PNPL	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRAC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RCRASUBC	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**
RODS	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		4	0	0	0	0	0	4

Database Radius Summary

STATE (TN) LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
CDL	0.0200	0	NS	NS	NS	NS	NS	0
ICEC	**0.0200**	**0**	**NS**	**NS**	**NS**	**NS**	**NS**	**0**
SPILS	0.0200	0	NS	NS	NS	NS	NS	0
CLEANERS	0.2500	0	0	0	NS	NS	NS	0
RST	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
DELISTEDPS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
LFSWDS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
LST	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
SRS	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
VCPBF	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
PIHWS	**1.0000**	**0**	**0**	**0**	**0**	**0**	**NS**	**0**

SUB-TOTAL		0	0	0	0	0	0	0

Database Radius Summary

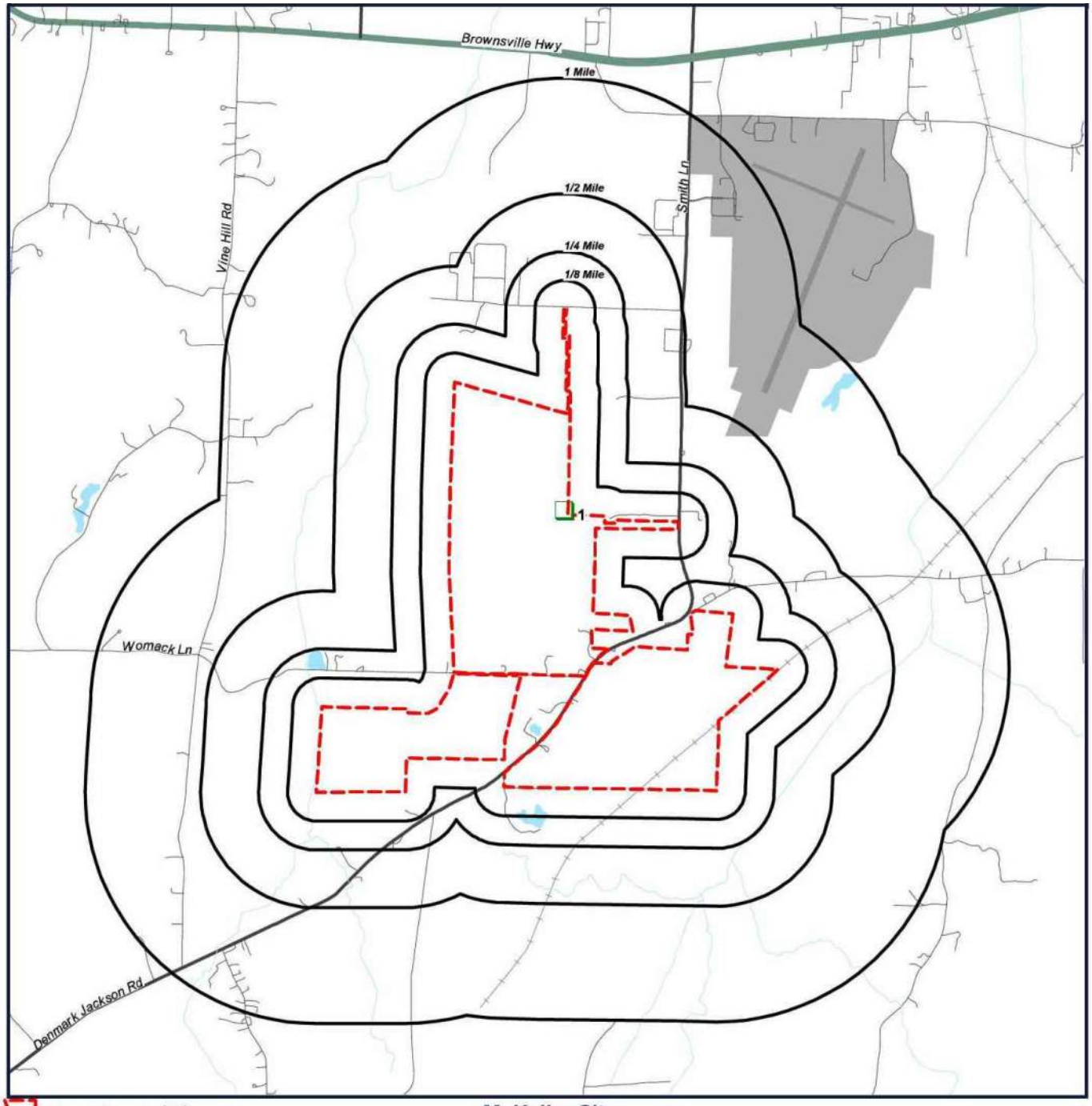
TRIBAL LISTING

*Standard environmental records are displayed in **bold**.*

Acronym	Search Radius (miles)	TP/AP (0 - 0.02)	1/8 Mile (> TP/AP)	1/4 Mile (> 1/8)	1/2 Mile (> 1/4)	1 Mile (> 1/2)	> 1 Mile	Total
USTR04	**0.2500**	**0**	**0**	**0**	**NS**	**NS**	**NS**	**0**
LUSTR04	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
ODINDIAN	**0.5000**	**0**	**0**	**0**	**0**	**NS**	**NS**	**0**
INDIANRES	1.0000	0	0	0	0	0	NS	0
SUB-TOTAL		0	0	0	0	0	0	0
TOTAL		4	0	0	0	0	0	4

NOTES:
NS = NOT SEARCHED
TP/AP = TARGET PROPERTY/ADJACENT PROPERTY

Radius Map 1



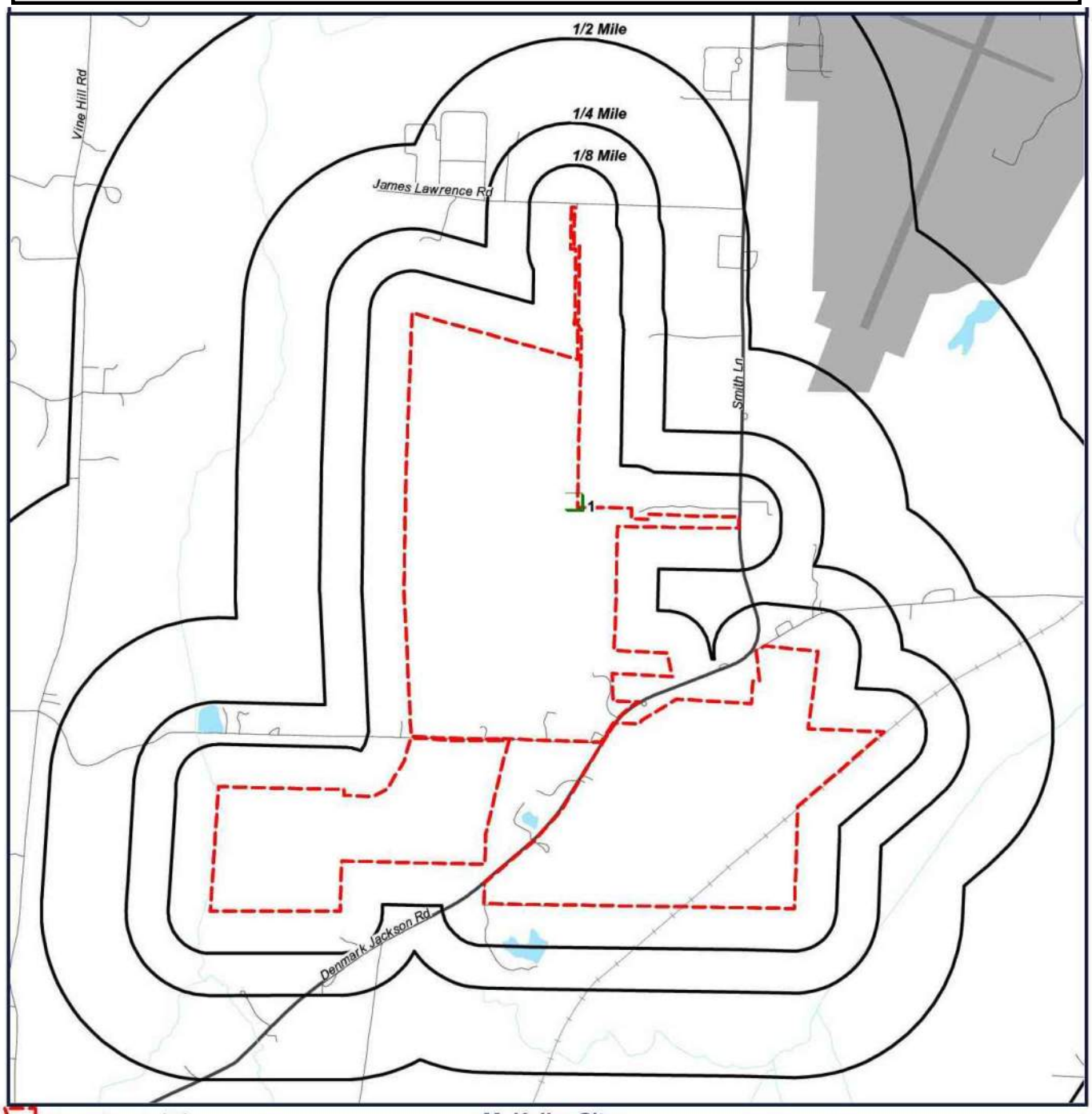
Target Property (TP)
FRSTN

McKellar Site
Jackson, Tennessee
38301

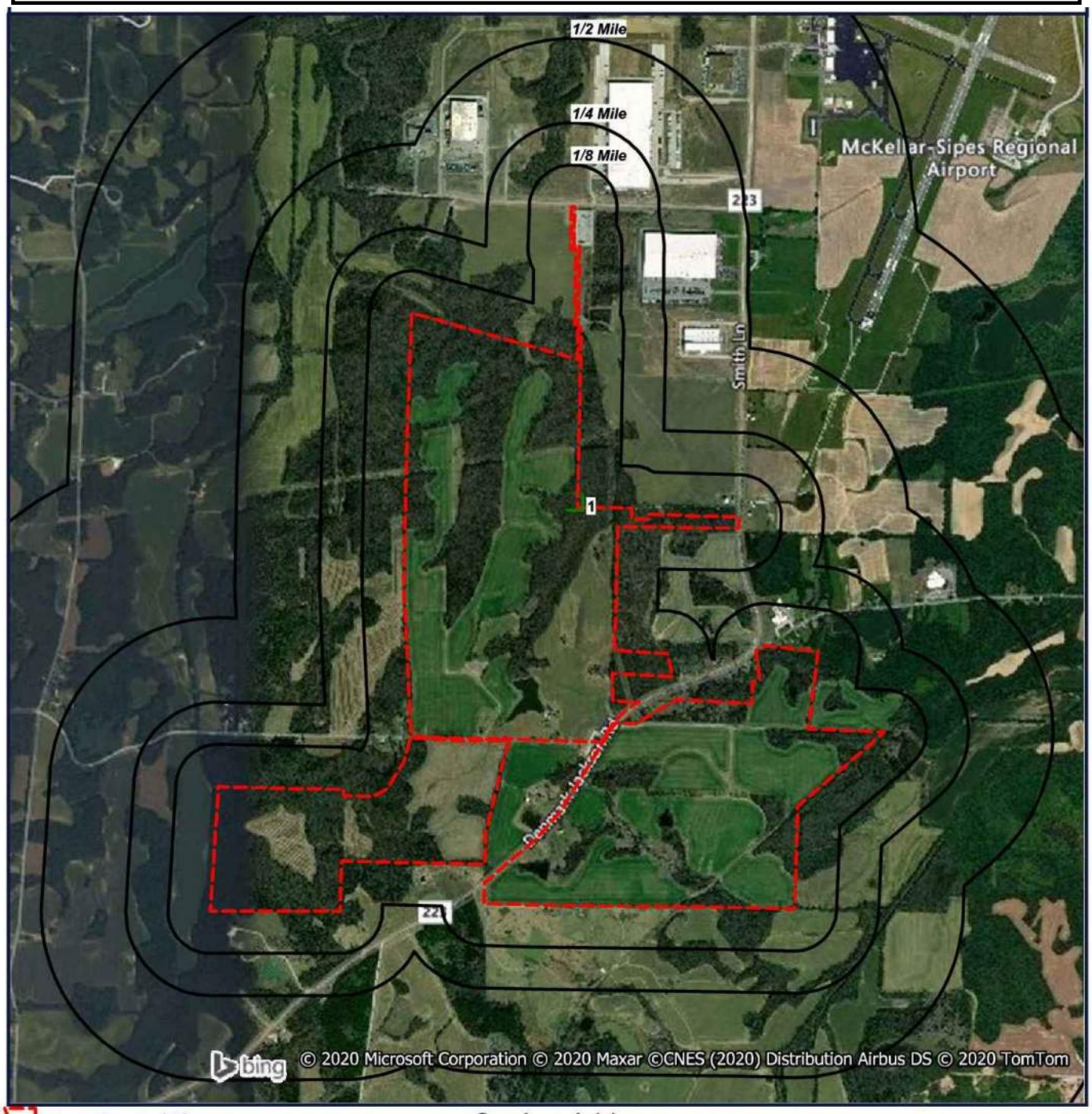
N
W E
S

0' 1750' 3500' 5250'
SCALE: 1" = 3500'

Radius Map 2


1/2 Mile
1/4 Mile
1/8 Mile
Vine Hill Rd
James Lawrence Rd
Smith Ln
Denmark Jackson Rd
1
Target Property (TP)
FRSTN
McKellar Site
Jackson, Tennessee
38301
N
W
E
S
0'
1200'
2400'
3600'
SCALE: 1" = 2400'

Ortho Map



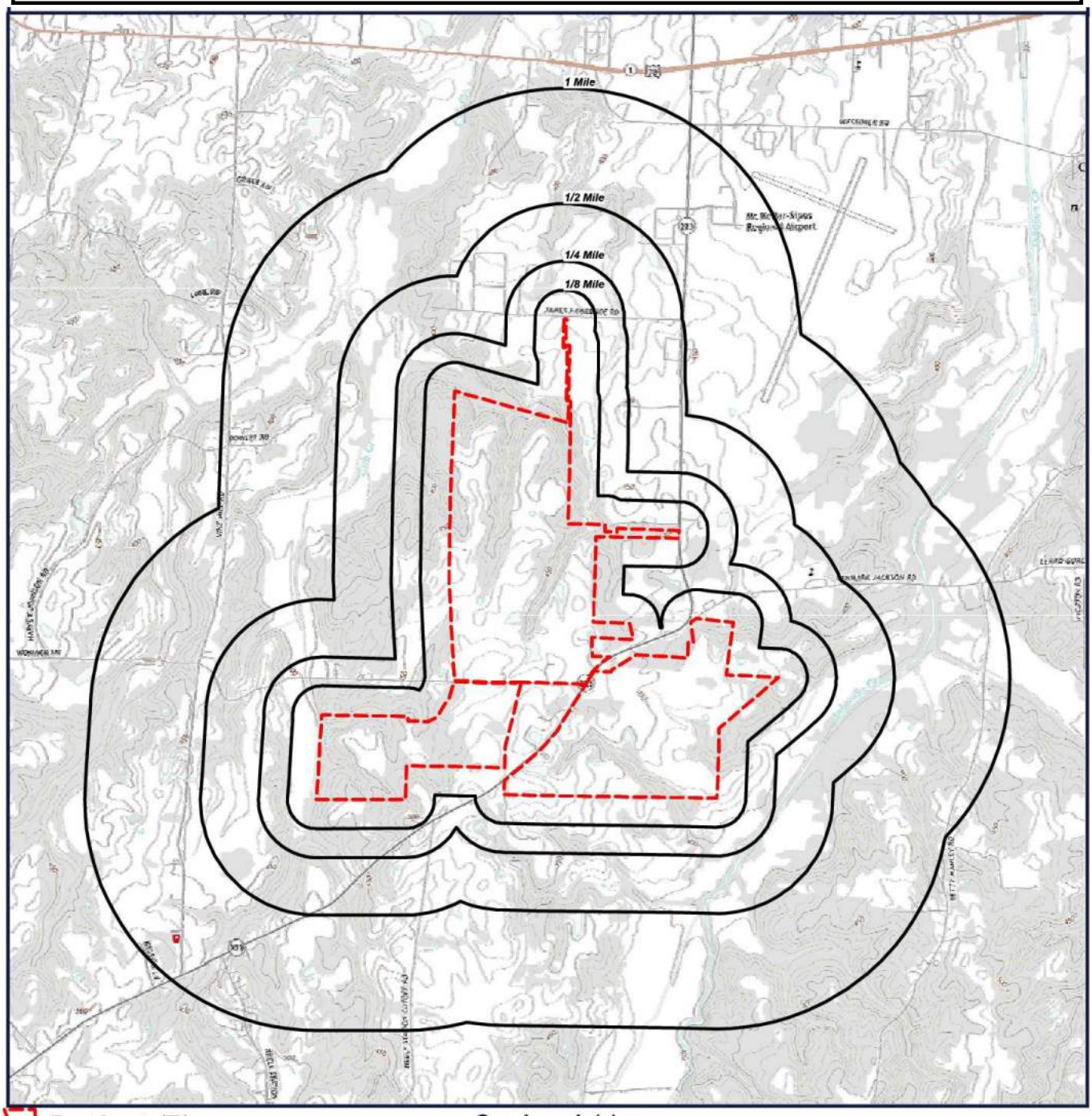
Target Property (TP)
FRSTN

Quadrangle(s):
Westover
McKellar Site
Jackson, Tennessee
38301

N
W E
S

0' 1200' 2400' 3600'
SCALE: 1" = 2400'

Topographic Map



Target Property (TP)

Quadrangle(s):
Westover
Source: USGS,
05/01/2013
McKellar Site
Jackson, Tennessee
38301

N
W E
S

0' 1750' 3500' 5250'
SCALE: 1" = 3500'

Located Sites Summary

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address	PAGE #
1	ECHOR04	110070264971	Lower (436 ft.)	TP	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301	17
1	ECHOR04	TNR122121	Lower (436 ft.)	TP	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301	18
1	FRSTN	110070264971	Lower (436 ft.)	TP	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301	19
1	ICISNPDES	TNR122121INPDES	Lower (436 ft.)	TP	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301	20

Site Summary By Database

*NOTE: Standard environmental records are displayed in **bold**.*

Map ID#	Database Name	Site ID#	Relative Elevation	Distance From Site	Site Name	Address
1	ECHOR04	110070264971	Lower (436 ft.)	TP	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301
1	ECHOR04	TNR122121	Lower (436 ft.)	TP	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301
1	FRSTN	110070264971	Lower (436 ft.)	TP	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301
1	ICISNPDES	TNR122121INPDES	Lower (436 ft.)	TP	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301

Elevation Summary

Elevations are collected from the USGS 3D Elevation Program 1/3 arc-second (approximately 10 meters) layer hosted at the NGTOC. .

Target Property Elevation: 471 ft.

*NOTE: Standard environmental records are displayed in **bold**.*

EQUAL/HIGHER ELEVATION

No Records Found

LOWER ELEVATION

Map ID#	Database Name	Elevation	Site Name	Address	Page #
1	ECHOR04	436 ft.	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301	17
1	ECHOR04	436 ft.	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301	18
1	FRSTN	436 ft.	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301	19
1	ICISNPDES	436 ft.	MADISON COUNTY INDUSTRIAL PARK	OFF JACK LAWRENCE ROAD, JACKSON, TN 38301	20

Enforcement and Compliance History Information (ECHOR04)

MAP ID# 1

Distance from Property: 0.000 mi. (0 ft.) X
Elevation: 436 ft. (Lower than TP)

FACILITY INFORMATION

UNIQUE ID: **110070264971**
REGISTRY ID: **110070264971**
NAME: **MADISON COUNTY INDUSTRIAL PARK**
ADDRESS: **OFF JACK LAWRENCE ROAD**
JACKSON, TN 38301
COUNTY: **MADISON**
FACILITY LINK: *Facility Detail Report*

Back to Report Summary

Enforcement and Compliance History Information (ECHOR04)

MAP ID# 1

Distance from Property: 0.000 mi. (0 ft.) X
Elevation: 436 ft. (Lower than TP)

FACILITY INFORMATION

UNIQUE ID: **TNR122121**
REGISTRY ID: **TNR122121**
NAME: **MADISON COUNTY INDUSTRIAL PARK**
ADDRESS: **OFF JACK LAWRENCE ROAD**
JACKSON, TN 38301
COUNTY: **MADISON**
FACILITY LINK: *Facility Detail Report*

Back to Report Summary

Facility Registry System (FRSTN)

MAP ID# 1

Distance from Property: 0.000 mi. (0 ft.) X
Elevation: 436 ft. (Lower than TP)

FACILITY INFORMATION

REGISTRY ID: **110070264971**

NAME: **MADISON COUNTY INDUSTRIAL PARK**

LOCATION ADDRESS: **OFF JACK LAWRENCE ROAD**
JACKSON, TN 38301

COUNTY: **MADISON**

EPA REGION: **04**

FEDERAL FACILITY: **NOT REPORTED**

TRIBAL LAND: **NOT REPORTED**

ALTERNATIVE NAME/S:
NO ALTERNATIVE NAME(S) LISTED FOR THIS FACILITY

PROGRAM/S LISTED FOR THIS FACILITY
NPDES - NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

STANDARD INDUSTRIAL CLASSIFICATION/S (SIC)
NO SIC DATA REPORTED

NORTH AMERICAN INDUSTRY CLASSIFICATION/S (NAICS)
NO NAICS DATA REPORTED

Back to Report Summary

MAP ID# 1

Distance from Property: 0.000 mi. (0 ft.) X
Elevation: 436 ft. (Lower than TP)

FACILITY INFORMATION

GEOSEARCH ID: **TNR122121INPDES**
NPDES ID: **TNR122121** FACILITY #: **110070264971**
NAME: **MADISON COUNTY INDUSTRIAL PARK**
PHYSICAL ADDRESS: **OFF JACK LAWRENCE ROAD**
JACKSON TN 38301
COUNTY: **MADISON**
FACILITY TYPE: **NOT REPORTED**
IMPAIRED WATERS: **NOT REPORTED**

STANDARD INDUSTRIAL CLASSIFICATION

- NOT REPORTED -

PERMITS

FACILITY TYPE INDICATOR: **NON-POTABLE WATER**
PERMIT TYPE: **GENERAL PERMIT COVERED FACILITY**
MAJOR MINOR FACILITY: **MINOR DISCHARGER**
PERMIT STATUS: **TERMINATED**
WATER BODY: **FORKED DEER-SOUTH FORK**
PERMIT NAME: **MADISON COUNTY**
AGENCY TYPE: **STATE**
ORIGINAL ISSUE DATE: **8/14/2018**
ISSUE DATE: **8/14/2018**
ISSUING AGENCY: **TDEC - DWR**
EFFECTIVE DATE: **8/14/2018**
EXPIRATION DATE: **9/30/2021**
RETIREMENT DATE: **NOT REPORTED**
TERMINATION DATE: **12/6/2019**
PERMIT COMPLIANCE STATUS: **YES**
PERMIT SUBJECT TO DMR RUN: **NOT REPORTED**
REPORTABLE NONCOMPLIANCE TRACKING IS ON: **YES**

INSPECTIONS

- NO INSPECTIONS REPORTED -

HISTORIC COMPLIANCE

HISTORIC NON-COMPLIANCE QUARTER (YYYYQ): **20202**
HISTORIC NON-COMPLIANCE: **UNDETERMINED QNCR STATUS - INSUFFICIENT DATA, OR PERMITEE IS A MINOR DISCHARGER NOT SUBJECT TO MANDATORY REPORTING**
NUMBER OF E90 VIOLATIONS: **0**
NUMBER OF COMPLIANCE SCHEDULE VIOLATIONS: **0**
NUMBER OF SINGLE EVENT VIOLATIONS: **0**
NUMBER OF PERMIT SCHEDULE VIOLATIONS: **0**

HISTORIC NON-COMPLIANCE QUARTER (YYYYQ): **20201**
HISTORIC NON-COMPLIANCE: **UNDETERMINED QNCR STATUS - INSUFFICIENT DATA, OR PERMITEE IS A MINOR DISCHARGER NOT SUBJECT TO MANDATORY REPORTING**

NUMBER OF E90 VIOLATIONS: **0**
NUMBER OF COMPLIANCE SCHEDULE VIOLATIONS: **0**
NUMBER OF SINGLE EVENT VIOLATIONS: **0**
NUMBER OF PERMIT SCHEDULE VIOLATIONS: **0**

HISTORIC NON-COMPLIANCE QUARTER (YYYYQ): **20192**
HISTORIC NON-COMPLIANCE: **NOT CONSIDERED IN RNC/SNC BASED ON MANUAL REVIEW OF DATA BY STATE OR EPA REGION.**
NUMBER OF E90 VIOLATIONS: **0**
NUMBER OF COMPLIANCE SCHEDULE VIOLATIONS: **0**
NUMBER OF SINGLE EVENT VIOLATIONS: **0**
NUMBER OF PERMIT SCHEDULE VIOLATIONS: **0**

HISTORIC NON-COMPLIANCE QUARTER (YYYYQ): **20191**
HISTORIC NON-COMPLIANCE: **NOT CONSIDERED IN RNC/SNC BASED ON MANUAL REVIEW OF DATA BY STATE OR EPA REGION.**
NUMBER OF E90 VIOLATIONS: **0**
NUMBER OF COMPLIANCE SCHEDULE VIOLATIONS: **0**
NUMBER OF SINGLE EVENT VIOLATIONS: **0**
NUMBER OF PERMIT SCHEDULE VIOLATIONS: **0**

HISTORIC NON-COMPLIANCE QUARTER (YYYYQ): **20184**
HISTORIC NON-COMPLIANCE: **NOT CONSIDERED IN RNC/SNC BASED ON MANUAL REVIEW OF DATA BY STATE OR EPA REGION.**
NUMBER OF E90 VIOLATIONS: **0**
NUMBER OF COMPLIANCE SCHEDULE VIOLATIONS: **0**
NUMBER OF SINGLE EVENT VIOLATIONS: **0**
NUMBER OF PERMIT SCHEDULE VIOLATIONS: **0**

SINGLE EVENT VIOLATIONS

- NO SINGLE EVENT VIOLATIONS REPORTED -

FORMAL ENFORCEMENT ACTIONS

- NO FORMAL ENFORCEMENT ACTIONS REPORTED -

EFFLUENT VIOLATIONS

- NOT REPORTED -

EFFLUENT VIOLATIONS contd..

- NOT REPORTED -

EFFLUENT VIOLATIONS contd..

- NOT REPORTED -

Back to Report Summary

Unlocated Sites Summary

This list contains sites that could not be mapped due to limited or incomplete address information.

No Records Found

AIRSAFS Aerometric Information Retrieval System / Air Facility Subsystem

VERSION DATE: 10/20/14

The United States Environmental Protection Agency (EPA) modified the Aerometric Information Retrieval System (AIRS) to a database that exclusively tracks the compliance of stationary sources of air pollution with EPA regulations: the Air Facility Subsystem (AFS). Since this change in 2001, the management of the AIRS/AFS database was assigned to EPA's Office of Enforcement and Compliance Assurance. Enforcement and Compliance History Online (ECHO) Clean Air Act data from AFS are frozen and reflect data as of October 17, 2014, the EPA retired this system for Clean Air Act stationary sources.

ALTFUELS Alternative Fueling Stations

VERSION DATE: 10/28/20

Nationwide list of alternative fueling stations made available by the U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Bio-diesel stations, Ethanol (E85) stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE).

BF Brownfields Management System

VERSION DATE: 10/08/20

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. The United States Environmental Protection Agency maintains this database to track activities in the various brown field grant programs including grantee assessment, site cleanup and site redevelopment. This database included tribal brownfield sites.

BRS Biennial Reporting System

VERSION DATE: 12/31/17

The United States Environmental Protection Agency (EPA), in cooperation with the States, biennially collects information regarding the generation, management, and final disposition of hazardous wastes regulated under the Resource Conservation and Recovery Act of 1976 (RCRA), as amended. The Biennial Report captures detailed data on the generation of hazardous waste from large quantity generators and data on waste management practices from treatment, storage and disposal facilities. Currently, the EPA states that data collected between 1991 and 1997 was originally a part of the defunct Biennial Reporting System and is now incorporated into the RCRAInfo data system.

CDL Clandestine Drug Laboratory Locations

VERSION DATE: 06/17/20

The U.S. Department of Justice ("the Department") provides this information as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments. The Department does not establish, implement, enforce, or certify compliance with clean-up or remediation standards for contaminated sites; the public should contact a state or local health department or environmental protection agency for that information.

DNPL Delisted National Priorities List

VERSION DATE: 09/21/20

This database includes sites from the United States Environmental Protection Agency's Final National Priorities List (NPL) where remedies have proven to be satisfactory or sites where the original analyses were inaccurate, and the site is no longer appropriate for inclusion on the NPL, and final publication in the Federal Register has occurred.

DOCKETS EPA Docket Data

VERSION DATE: 12/22/05

The United States Environmental Protection Agency Docket data lists Civil Case Defendants, filing dates as far back as 1971, laws broken including section, violations that occurred, pollutants involved, penalties assessed and superfund awards by facility and location. Please refer to ICIS database as source of current data.

DOD Department of Defense Sites

VERSION DATE: 12/01/14

This information originates from the National Atlas of the United States Federal Lands data, which includes lands owned or administered by the Federal government. Army DOD, Army Corps of Engineers DOD, Air Force DOD, Navy DOD and Marine DOD areas of 640 acres or more are included.

EC Federal Engineering Institutional Control Sites

VERSION DATE: 11/23/20

This database includes site locations where Engineering and/or Institutional Controls have been identified as part of a selected remedy for the site as defined by United States Environmental Protection Agency official remedy decision documents. The data displays remedy component information for Superfund decision documents issued in fiscal years 1982-2017, and it includes final and deleted NPL sites as well as sites with a Superfund Alternative Approach (SAA) agreement in place. The only sites included that are not on the NPL, proposed for NPL, or removed from proposed NPL, are those with an SAA Agreement in place. A site listing does not indicate that the institutional and engineering controls are currently in place nor will be in place once the remedy is complete; it only indicates that the decision to include either of them in the remedy is documented as of the completed date of the document. Institutional controls are actions, such as legal controls, that help minimize the

potential for human exposure to contamination by ensuring appropriate land or resource use. Engineering controls include caps, barriers, or other device engineering to prevent access, exposure, or continued migration of contamination.

ECHOR04 Enforcement and Compliance History Information

VERSION DATE: 11/28/20

The U.S. Environmental Protection Agency's Enforcement and Compliance History Online (ECHO) database, provides compliance and enforcement information for facilities nationwide. This database includes facilities regulated as Clean Air Act stationary sources, Clean Water Act direct dischargers, Resource Conservation and Recovery Act hazardous waste handlers, Safe Drinking Water Act public water systems along with other data, such as Toxics Release Inventory releases.

ERNSTN Emergency Response Notification System

VERSION DATE: 09/27/20

This National Response Center database contains data on reported releases of oil, chemical, radiological, biological, and/or etiological discharges into the environment anywhere in the United States and its territories. The data comes from spill reports made to the U.S. Environmental Protection Agency, U.S. Coast Guard, the National Response Center and/or the U.S. Department of Transportation.

FEMAUST FEMA Owned Storage Tanks

VERSION DATE: 12/01/16

This is a listing of FEMA owned underground and aboveground storage tank sites. For security reasons, address information is not released to the public according to the U.S. Department of Homeland Security.

FRSTN Facility Registry System

VERSION DATE: 10/02/20

The United States Environmental Protection Agency's Office of Environmental Information (OEI) developed the Facility Registry System (FRS) as the centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental interest. The Facility Registry System replaced the Facility Index System or FINDS database.

FUDS Formerly Used Defense Sites

VERSION DATE: 12/31/18

The Formerly Used Defense Sites (FUDS) inventory includes properties previously owned by or leased to the United States and under Secretary of Defense Jurisdiction, as well as Munitions Response Areas (MRAs). The remediation of these properties is the responsibility of the Department of Defense. This data is provided by the U.S. Army Corps of Engineers (USACE), the boundaries/polygon data are based on preliminary findings and not

all properties currently have polygon data available. DISCLAIMER: This data represents the results of data collection/processing for a specific USACE activity and is in no way to be considered comprehensive or to be used in any legal or official capacity as presented on this site. While the USACE has made a reasonable effort to insure the accuracy of the maps and associated data, it should be explicitly noted that USACE makes no warranty, representation or guaranty, either expressed or implied, as to the content, sequence, accuracy, timeliness or completeness of any of the data provided herein. For additional information on Formerly Used Defense Sites please contact the USACE Public Affairs Office at (202) 528-4285.

FUSRAP Formerly Utilized Sites Remedial Action Program

VERSION DATE: 03/04/17

The U.S. Department of Energy (DOE) established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from the Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations. The DOE Office of Legacy Management (LM) established long-term surveillance and maintenance (LTS&M) requirements for remediated FUSRAP sites. DOE evaluates the final site conditions of a remediated site on the basis of risk for different future uses. DOE then confirms that LTS&M requirements will maintain protectiveness.

HISTPST Historical Gas Stations

VERSION DATE: NR

This historic directory of service stations is provided by the Cities Service Company. The directory includes Cities Service filling stations that were located throughout the United States in 1930.

HMIRSR04 Hazardous Materials Incident Reporting System

VERSION DATE: 10/27/20

The HMIRS database contains unintentional hazardous materials release information reported to the U.S. Department of Transportation located in EPA Region 4. This region includes the following states: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

HWCD Hazardous Waste Compliance Docket Facilities

VERSION DATE: 10/29/20

This list of the Federal Agency Hazardous Waste Compliance Docket Facilities is maintained by the United States Environmental Protection Agency (EPA). According to the EPA, Section 120(c) of CERCLA requires EPA to establish a listing, known as the Federal Facility Hazardous Waste Compliance Docket (Docket), of Federal facilities which are managing or have managed hazardous waste; or have had a release of hazardous waste. Thus, the Docket identifies all Federal facilities that must be evaluated to determine whether they pose a risk to human health and the environment and it makes this information available to the public. In order for the Docket to remain current and accurate it requires periodic updating.

ICIS Integrated Compliance Information System (formerly DOCKETS)

VERSION DATE: 09/19/20

ICIS is a case activity tracking and management system for civil, judicial, and administrative federal Environmental Protection Agency enforcement cases. ICIS contains information on federal administrative and federal judicial cases under the following environmental statutes: the Clean Air Act, the Clean Water Act, the Resource Conservation and Recovery Act, the Emergency Planning and Community Right-to-Know Act - Section 313, the Toxic Substances Control Act, the Federal Insecticide, Fungicide, and Rodenticide Act, the Comprehensive Environmental Response, Compensation, and Liability Act, the Safe Drinking Water Act, and the Marine Protection, Research, and Sanctuaries Act.

ICISCLEANERS Integrated Compliance Information System Drycleaners

VERSION DATE: 09/19/20

This is a listing of drycleaner facilities from the Integrated Compliance Information System (ICIS). The U.S. Environmental Protection Agency (EPA) tracks facilities that possess NAIC and SIC codes that classify businesses as drycleaner establishments. The following Primary SIC Codes are included in this data: 7211, 7212, 7213, 7215, 7216, 7217, 7218, and/or 7219; the following Primary NAICS Codes are included in this data: 812320, 812331, and/or 812332.

ICISNPDES Integrated Compliance Information System National Pollutant Discharge Elimination System

VERSION DATE: 04/26/20

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. This database is provided by the U.S. Environmental Protection Agency.

LUCIS Land Use Control Information System

VERSION DATE: 09/01/06

The LUCIS database is maintained by the U.S. Department of the Navy and contains information for former Base Realignment and Closure (BRAC) properties across the United States.

MLTS Material Licensing Tracking System

VERSION DATE: 06/29/17

MLTS is a list of approximately 8,100 sites which have or use radioactive materials subject to the United States Nuclear Regulatory Commission (NRC) licensing requirements. Disclaimer: Due to agency regulations and policies, this database contains applicant/licensee location information which may or may not be related to the physical location per MLTS site.

MRDS Mineral Resource Data System

VERSION DATE: 03/15/16

MRDS (Mineral Resource Data System) is a collection of reports describing metallic and nonmetallic mineral resources throughout the world. Included are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. This database contains the records previously provided in the Mineral Resource Data System (MRDS) of USGS and the Mineral Availability System/Mineral Industry Locator System (MAS/MILS) originated in the U.S. Bureau of Mines, which is now part of USGS. The USGS has ceased systematic updates of the MRDS database with their focus more recently on deposits of critical minerals while providing a well-documented baseline of historical mine locations from USGS topographic maps. A few updates last occurred 2015 and early 2016 for select mine site area/s.

MSHA Mine Safety and Health Administration Master Index File

VERSION DATE: 08/07/20

The Mine dataset lists all Coal and Metal/Non-Metal mines under MSHA's jurisdiction since 1/1/1970. It includes such information as the current status of each mine (Active, Abandoned, NonProducing, etc.), the current owner and operating company, commodity codes and physical attributes of the mine. Mine ID is the unique key for this data. This information is provided by the United States Department of Labor - Mine Safety and Health Administration (MSHA).

NLRRCRAC No Longer Regulated RCRA Corrective Action Facilities

VERSION DATE: 12/14/20

This database includes RCRA Corrective Action facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements.

NLRRCRAT No Longer Regulated RCRA Non-CORRACTS TSD Facilities

VERSION DATE: 12/14/20

This database includes RCRA Non-Corrective Action TSD facilities that are no longer regulated by the United States Environmental Protection Agency or do not meet other RCRA reporting requirements. This listing includes facilities that formerly treated, stored or disposed of hazardous waste.

NMS Former Military Nike Missile Sites

VERSION DATE: 12/01/84

This information was taken from report DRXTH-AS-IA-83A016 (Historical Overview of the Nike Missile System, 12/1984) which was performed by Environmental Science and Engineering, Inc. for the U.S. Army Toxic and Hazardous Materials Agency Assessment Division. The Nike system was deployed between 1954 and the mid-1970's. Among the substances used or stored on Nike sites were liquid missile fuel (JP-4); starter fluids (UDKH, aniline, and furfuryl alcohol); oxidizer (IRFNA); hydrocarbons (motor oil, hydraulic fluid, diesel fuel, gasoline,

heating oil); solvents (carbon tetrachloride, trichloroethylene, trichloroethane, stoddard solvent); and battery electrolyte. The quantities of material a disposed of and procedures for disposal are not documented in published reports. Virtually all information concerning the potential for contamination at Nike sites is confined to personnel who were assigned to Nike sites. During deactivation most hardware was shipped to depot-level supply points. There were reportedly instances where excess materials were disposed of on or near the site itself at closure. There was reportedly no routine site decontamination.

NPDESR04 National Pollutant Discharge Elimination System

VERSION DATE: 04/01/07

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The NPDES database was collected from the U.S. Environmental Protection Agency (EPA) from December 2002 through April 2007. Refer to the ICIS and/or ICIS-NPDES database as source of current data. This database includes permitted facilities located in EPA Region 4. This region includes the following states: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

NPL National Priorities List

VERSION DATE: 09/21/20

This database includes United States Environmental Protection Agency (EPA) National Priorities List sites that fall under the EPA's Superfund program, established to fund the cleanup of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial action.

ODI Open Dump Inventory

VERSION DATE: 06/01/85

The open dump inventory was published by the United States Environmental Protection Agency. An “open dump” is defined as a facility or site where solid waste is disposed of which is not a sanitary landfill which meets the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944) and which is not a facility for disposal of hazardous waste. This inventory has not been updated since June 1985.

PADS PCB Activity Database System

VERSION DATE: 11/19/20

PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of Polychlorinated Biphenyls (PCB) who are required to notify the U.S. Environmental Protection Agency of such activities.

PCSR04 Permit Compliance System

VERSION DATE: 08/01/12

The historic Permit Compliance System tracked enforcement status and permit compliance of facilities controlled

by the National Pollutant Discharge Elimination System (NPDES) under the Clean Water Act. This database includes permitted facilities located in EPA Region 4 states: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. This system has since been modernized by United States Environmental Protection Agency and is now integrated into the Integrated Compliance Information System (ICIS). Please refer to the ICIS database as the current source for this data.

PNPL Proposed National Priorities List

VERSION DATE: 09/21/20

This database contains sites proposed to be included on the National Priorities List (NPL) in the Federal Register. The United States Environmental Protection Agency investigates these sites to determine if they may present long-term threats to public health or the environment.

RCRAC Resource Conservation & Recovery Act - Corrective Action Facilities

VERSION DATE: 12/14/20

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with corrective action activity.

RCRAGR04 Resource Conservation & Recovery Act - Generator

VERSION DATE: 12/14/20

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities currently generating hazardous waste. EPA Region 4 includes the following states: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

RCRANGR04 Resource Conservation & Recovery Act - Non-Generator

VERSION DATE: 12/14/20

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities classified as non-generators. Non-Generators do not presently generate hazardous waste. EPA

Region 4 includes the following states: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

RCRASC RCRA Sites with Controls

VERSION DATE: 11/17/20

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities with institutional controls in place.

RCRASUBC Resource Conservation & Recovery Act - Subject to Corrective Action Facilities

VERSION DATE: 12/14/20

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities subject to corrective actions.

RCRAT Resource Conservation & Recovery Act - Non-CORRACTS Treatment, Storage & Disposal Facilities

VERSION DATE: 12/14/20

The Resource Conservation and Recovery Act (RCRA) gives the U.S. Environmental Protection Agency (EPA) the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities recognized as hazardous waste treatment, storage, and disposal sites (TSD).

RODS Record of Decision System

VERSION DATE: 09/21/20

These decision documents maintained by the United States Environmental Protection Agency describe the chosen remedy for NPL (Superfund) site remediation. They also include site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, and scope and role of response action.

SEMS Superfund Enterprise Management System

VERSION DATE: 09/21/20

The U.S. Environmental Protection Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs.

SEMSARCH Superfund Enterprise Management System Archived Site Inventory

VERSION DATE: 09/21/20

The U.S. Environmental Protection Agency's (EPA) Superfund Enterprise Management System Archived Site Inventory (List 8R Archived) replaced the CERCLIS NFRAP reporting system in 2015. This listing reflects sites at which the EPA has determined that assessment has been completed and no further remedial action is planned under the Superfund program.

SEMSLIENS SEMS Lien on Property

VERSION DATE: 06/22/20

The U.S. Environmental Protection Agency's (EPA) Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs. This is a listing of SEMS sites with a lien on the property.

SFLIENS CERCLIS Liens

VERSION DATE: 06/08/12

A Federal CERCLA ("Superfund") lien can exist by operation of law at any site or property at which United States Environmental Protection Agency has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties. This database contains those CERCLIS sites where the Lien on Property action is complete. Please refer to the SEMSLIENS database as source of current data.

SMCRA Surface Mining Control and Reclamation Act Sites

VERSION DATE: 06/24/20

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by the Office of

Surface Mining Reclamation and Enforcement (OSMRE) to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

SSEHRIPFAS SSEHRI PFAS Contamination Sites

VERSION DATE: 12/12/19

This PFAS Contamination Site Tracker database is compiled by the Social Science Environmental Health Research Institute (SSEHRI) at Northeastern University. According to the SSEHRI, the database records qualitative and quantitative data from each known site of PFAS contamination, including timeline of discovery, sources, levels, health impacts, community response, and government response. The goal of this database is to compile information and support public understanding of the rapidly unfolding issue of PFAS contamination. All data presented was extracted from government websites, news articles, or publicly available documents, and this is cited in the tracker. Disclaimer: The source conveys this database undergoes regular updates as new information becomes available, some sites may be missing and/or contain information that is incorrect or outdated, as well as their information represents all contamination sites SSEHRI is aware of, not all possible contamination sites. This data is not intended to be used for legal purposes. Limited location details are available with this data. Please access the following source link for the most current information: https://pfasproject.com/pfas-contamination-site-tracker/

SSTS Section Seven Tracking System

VERSION DATE: 08/04/20

The United States Environmental Protection Agency tracks information on pesticide establishments through the Section Seven Tracking System (SSTS). SSTS records the registration of new establishments and records pesticide production at each establishment. The Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) requires that production of pesticides or devices be conducted in a registered pesticide-producing or device-producing establishment. "Production" includes formulation, packaging, repackaging, and relabeling. For this database, the Product Information is only available for establishments up through 2014 or prior years, product details are no longer released by the EPA within the current SSTS non-Confidential Business Information data.

TRI Toxics Release Inventory

VERSION DATE: 12/31/18

The Toxics Release Inventory, provided by the United States Environmental Protection Agency, includes data on toxic chemical releases and waste management activities from certain industries as well as federal and tribal facilities. This inventory contains information about the types and amounts of toxic chemicals that are released each year to the air, water, and land as well as information on the quantities of toxic chemicals sent to other facilities for further waste management.

TSCA Toxic Substance Control Act Inventory

VERSION DATE: 12/31/16

The Toxic Substances Control Act (TSCA) was enacted in 1976 to ensure that chemicals manufactured, imported, processed, or distributed in commerce, or used or disposed of in the United States do not pose any unreasonable risks to human health or the environment. TSCA section 8(b) provides the United States Environmental Protection Agency (EPA) authority to "compile, keep current, and publish a list of each chemical substance that is manufactured or processed in the United States." This TSCA Chemical Substance Inventory contains non-confidential information on the production amount of toxic chemicals from each manufacturer and importer site. The EPA has collected Chemical Data Reporting (CDR) data since in 1986 (as Inventory Update Reporting). Collections occur approximately every four years and reporting requirements changed from collection to collection.

USUMTRCA Uranium Mill Tailings Radiation Control Act Sites

VERSION DATE: 03/04/17

The Legacy Management Office of the Department of Energy (DOE) manages radioactive and chemical waste, environmental contamination, and hazardous material at over 100 sites across the U.S. The L.M. Office manages this database of sites registered under the Uranium Mill Tailings Control Act (UMTRCA).

CDL Clandestine Methamphetamine Labs

VERSION DATE: 07/01/20

This Registry of Methamphetamine Contaminated Properties is maintained by the Department of Environment and Conservation. The registry includes properties reported by a law enforcement agency that have been under order of quarantine for at least sixty days because of potentially hazardous residual contamination that pose a threat to human health and render a property 'Unsafe for Human Use.'

CLEANERS Registered Drycleaning Facilities

VERSION DATE: 06/24/20

The Department of Environment and Conservation provides this list of Registered Drycleaning Facilities.

DELISTEDPS Delisted Promulgated Sites

VERSION DATE: 07/12/20

These sites have been deleted from the Department of Environment and Conservation's (TDEC) Inactive Hazardous Substance Sites list. According to the TDEC, in order for a promulgated site to be removed from the List, the following shall have occurred: (a) The hazardous substances which posed or may have posed a threat to human health or the environment have to the satisfaction of the Commissioner been removed/stabilized or determined to no longer pose a threat, (b) All relevant site characteristics, including, but not limited to, migration pathways, have been evaluated and either no longer pose a threat to human health or the environment, or have been remediated or any such threat is being controlled by other means, such as institutional controls, to the satisfaction of the Commissioner, (c) The site will require no long term monitoring and maintenance activities, or financial assurance for the costs of these activities has been established in a form, amount, and manner acceptable to the Commissioner, (d) All monitoring wells, etc., that serve as potential sources or routes for future contamination have been properly abandoned, protected, or otherwise accounted for, and (e) All state cost recovery issues have been resolved to the satisfaction of the Commissioner.

ICEC Institutional / Engineering Controls Registry

VERSION DATE: 10/07/20

The Department of Environment and Conservation (TDEC) provides this registry of sites with institutional controls in place. According to the TDEC, in cases where the cleanup does not remove or address all of the contamination at the property to the most stringent of standards (e.g., for residential or unrestricted use), Institutional Controls (ICs) may be required as part of the cleanup. ICs are legally enforceable restrictions, conditions, or controls that limit or prevent the use of the property, ground water, or surface water so that future exposure to contamination can be prevented or minimized. In Tennessee, ICs are implemented as a Notice of Land Use Restrictions. ICs can also be used in conjunction with engineering controls (ECs). ECs are constructed parts of a cleanup that act to cover (i.e. "cap") or limit exposure to residual contamination at the property.

LFSWDS Landfill and Solid Waste Disposal Sites

VERSION DATE: 08/03/20

The Department of Environment and Conservation provides this list of permitted solid waste management facilities.

LST Leaking Underground Storage Tanks

VERSION DATE: 09/01/20

This leaking underground storage tank database is provided by the Department of Environment and Conservation. The database includes details on all facilities where any type of environment related activity has occurred due to a tank closure, a suspected release or a confirmed release.

PIHWS Promulgated Inactive Hazardous Waste Sites

VERSION DATE: 10/08/20

The Promulgated Sites list consists of inactive hazardous substance sites regulated by the Department of Environment and Conservation's (TDEC) Division of Remediation. These sites, under Tennessee's Chapter 1200-1-13 and rules issued by the Solid Waste Board under the Authority of Part 2 of the "Hazardous Waste Management Act" (T.C.A. §68-212-201 et seq.), are inactive and pose or may reasonably be anticipated to pose a danger to public health, safety, or the environment as a result of the presence of a hazardous substance.

RST Registered Underground Storage Tanks

VERSION DATE: 10/01/20

This underground storage tank database is provided by the Department of Environment and Conservation. The mission of the Division of Underground Storage Tanks is to protect human health and environment by preventing future petroleum underground storage tank releases and remediating existing petroleum underground storage tank contamination.

SPILS Statewide Petroleum Incident Logging Section Sites

VERSION DATE: 07/29/20

SPILS is a new program within the Tennessee Department of Environment and Conservation Division of Solid Waste Management (DSWM). This program logs incidents along Tennessee's roadways where a reportable quantity of petroleum products is released to the environment, ensuring that appropriate cleanup standards are applied, remediation activities are completed, and final reports detailing the response are received and reviewed. Once an incident has been remediated, SPILS will issue a closure letter for the Responsible Party's file.

SRS State Remediation Sites

VERSION DATE: 10/08/20

The State Remediation Program (SRP) was established in 1994 within the Division of Solid Waste Management of the Department of Environment and Conservation for the purpose of providing owners, prospective purchasers and other interested parties the means to voluntarily investigate, clean up or monitor contaminated sites not regulated under RCRA, CERCLA or the Tennessee Division of Underground Tanks. The goal of the program is to provide fair, comprehensive and consistent regulation of the investigation and remediation of contaminated sites in a timely and cost effective manner consistent with other State and Federal programs. This list includes both active and inactive program sites.

VCPBF Voluntary Cleanup and Brownfield Sites

VERSION DATE: 10/06/20

This list of Voluntary Cleanup Oversight and Assistance Program (VOAP) sites, which also includes Brownfield sites, is provided by the Department of Environment and Conservation. The VOAP offers people the opportunity to work proactively with state government to address necessary cleanup of a property to return it to productive use. In return for their efforts, participants can receive a No Further Action letter and a release of liability for areas where investigation and cleanup is conducted.

Environmental Records Definitions - TRIBAL

INDIANRES Indian Reservations

VERSION DATE: 09/27/17

This database is extracted from select geographic and cartographic information from the U.S. Census Bureau. The Bureau of Indian Affairs (BIA) within the U.S. Department of the Interior (DOI) provides the list of federally recognized tribes. The American Indian/Alaska Native/Native Hawaiian (AIANNH) Areas includes the following legal entities: federally recognized American Indian reservations and off-reservation trust land areas, state-recognized American Indian reservations, and Hawaiian home lands (HHLs). The boundaries for federally recognized American Indian reservations and off-reservation trust lands are as of January 2017. The boundaries for state-recognized American Indian reservations and for state designated tribal statistical areas were delineated by state governor-appointed liaisons for the 2010 Census through the State American Indian Reservation Program and Tribal Statistical Areas Program respectively.

LUSTR04 Leaking Underground Storage Tanks On Tribal Lands

VERSION DATE: 04/14/20

This database, provided by the United States Environmental Protection Agency (EPA), contains leaking underground storage tanks on Tribal lands located in EPA Region 4. Region 4 includes the following states: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

ODINDIAN Open Dump Inventory on Tribal Lands

VERSION DATE: 11/08/06

This Indian Health Service database contains information about facilities and sites on tribal lands where solid waste is disposed of, which are not sanitary landfills or hazardous waste disposal facilities, and which meet the criteria promulgated under section 4004 of the Solid Waste Disposal Act (42 U.S.C. 6944).

USTR04 Underground Storage Tanks On Tribal Lands

VERSION DATE: 04/14/20

This database, provided by the United States Environmental Protection Agency (EPA), contains underground storage tanks on Tribal lands located in EPA Region 4. Region 4 includes the following states: Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee.

Appendix J:
Tax Assessor Data

State of Tennessee Comptroller of the Treasury

Real Estate Assessment Data

County Number: 057 **County Name:** MADISON **Tax Year:** 2021

Property Owner and Mailing Address

Jan 1 Owner:
JOHNSON DON C
242 VINE HILL RD
JACKSON, TN 38301

Property Location

Address: DENMARK JACKSON RD 779

Map: 097 **Grp:** **Ctrl Map:** 097 **Parcel:** 013.01 **PI:** **S/I:** 000

Value Information

Reappraisal Year: 2018

Land Mkt Value:	$5,600
Improvement Value:	$37,700
Total Market Appraisal:	$43,300
Assessment %:	25
Assessment:	$10,825

General Information

Class: 00 - RESIDENTIAL

City #:	000	**City:**	
SSD1:	000	**SSD2:**	000
District:	08	**Mkt Area:**	E50
# Bldgs:	1	**# Mobile Homes:**	0
Utilities - Water / Sewer:	11 - INDIVIDUAL / INDIVIDUAL	**Utilities - Electricity:**	01 - PUBLIC
Utilities - Gas / Gas Type:	00 - NONE	**Zoning:**	

Subdivision Data

Subdivision:

Plat Bk: **Plat Pg:** **Block:** **Lot:**

Additional Description

HSE FACES DENMARK JACKSON

Building Information

Building # 1

Improvement Type:	01 - SINGLE FAMILY	**Stories:**	1
Living/Business Sq. Ft.:	1,141		
Heat and A/C:	00 - NONE	**Plumbing Fixtures:**	3
Exterior Wall:	11 - COMMON BRICK	**Quality:**	01 - AVERAGE
Act Yr Built:	1930	**Condition:**	A - AVERAGE

Building Areas:

Area: BAS	**Sq Ft:** 1,141
Area: CPU	**Sq Ft:** 568
Area: UTF	**Sq Ft:** 300
Area: OPF	**Sq Ft:** 98

Extra Features

Bldg/Card#	Type	Description	Units

1	STOOP	3X5	15
1	PATIO	8X13	104

Sale Information

Sale Date	Price	Book	Page	Vac/Imp	Type Instrument	Qualification
08/16/2017	$12,000	741	1006	IMPROVED	WD	B
08/13/1970	$0	0258	0234			

Land Information

Deed Acres: 0.00 **Calc Acres:** 0.00 **Total Land Units:** 1.00

Land Type: 04 - IMP SITE **Soil Class:** **Units:** 1.00

New Search | Return to List | View GIS Map for this Parcel

Glossary of Terms | How to Search | Fact Sheet

Division of Property Assessments Home Page | Comptroller of the Treasury Home Page | State of Tennessee Home Page

State of Tennessee Comptroller of the Treasury

Real Estate Assessment Data

County Number: 057 **County Name:** MADISON **Tax Year:** 2021

Property Owner and Mailing Address

Jan 1 Owner:
JOHNSON DON C
242 VINE HILL RD
JACKSON, TN 38301

Property Location

Address: WOMACK RD 36

Map: 097 **Grp:** **Ctrl Map:** 097 **Parcel:** 013.02 **PI:** **S/I:** 000

Value Information

Reappraisal Year: 2018

Land Mkt Value:	$10,600
Improvement Value:	$56,700
Total Market Appraisal:	$67,300
Assessment %:	25
Assessment:	$16,825

General Information

Class: 00 - RESIDENTIAL

City #:	000	**City:**	
SSD1:	000	**SSD2:**	000
District:	08	**Mkt Area:**	E50
# Bldgs:	1	**# Mobile Homes:**	0
Utilities - Water / Sewer:	11 - INDIVIDUAL / INDIVIDUAL	**Utilities - Electricity:**	01 - PUBLIC
Utilities - Gas / Gas Type:	00 - NONE	**Zoning:**	

Subdivision Data

Subdivision:

Plat Bk: **Plat Pg:** **Block:** **Lot:**

Additional Description

Building Information

Building # 1

Improvement Type:	01 - SINGLE FAMILY	**Stories:**	1
Living/Business Sq. Ft.:	1,946		
Heat and A/C:	07 - HEAT & COOLING SPLIT	**Plumbing Fixtures:**	6
Exterior Wall:	04 - SIDING AVERAGE	**Quality:**	01 - AVERAGE
Act Yr Built:	1900	**Condition:**	A - AVERAGE

Building Areas:

Area: BAS	**Sq Ft:** 1,946
Area: OPF	**Sq Ft:** 216
Area: OPF	**Sq Ft:** 168

Extra Features

Bldg/Card#	Type	Description	Units
1	WOOD DECK	14X35	490

Sale Information

Sale Date	Price	Book	Page	Vac/Imp	Type Instrument	Qualification
03/21/2005	$0	695	529			
04/07/2000	$0	606	796			
03/21/1991	$10,000	506	276	VACANT	WD	C

Land Information

Deed Acres: 2.00 **Calc Acres:** 0.00 **Total Land Units:** 2.00

Land Type: 04 - IMP SITE **Soil Class:** **Units:** 2.00

New Search Return to List View GIS Map for this Parcel

Glossary of Terms How to Search Fact Sheet

Division of Property Assessments Home Page

Comptroller of the Treasury Home Page

State of Tennessee Home Page

State of Tennessee Comptroller of the Treasury

Real Estate Assessment Data

Home | About | New Search | Return to List

County Number: 057 **County Name:** MADISON **Tax Year:** 2020

Property Owner and Mailing Address

Jan 1 Owner:
JOHNSON DON C
242 VINE HILL RD
JACKSON, TN 38301

Property Location

Address: DENMARK JACKSON RD

Map: 097 **Grp:** **Ctrl Map:** 097 **Parcel:** 026.00 **PI:** **S/I:** 000

Value Information

Reappraisal Year: 2018

Land Mkt Value:	$636,100	**Land Use Value:**	$334,500
Improvement Value:	$0	**Improvement Value:**	$0
Total Market Appraisal:	$636,100	**Total Use Appraisal:**	$334,500
		Assessment %:	25
		Assessment:	$83,625

General Information

Class:	11 - AGRICULTURAL		
City #:	000	**City:**	
SSD1:	000	**SSD2:**	000
District:	08	**Mkt Area:**	E50
# Bldgs:	0	**# Mobile Homes:**	0
Utilities - Water / Sewer:	11 - INDIVIDUAL / INDIVIDUAL	**Utilities - Electricity:**	01 - PUBLIC
Utilities - Gas / Gas Type:	06 - INDIVIDUAL - MANUFACTURED GAS	**Zoning:**	

Subdivision Data

Subdivision:

Plat Bk: **Plat Pg:** **Block:** **Lot:**

Additional Description

Building Information

Extra Features

Sale Information

Sale Date	Price	Book	Page	Vac/Imp	Type Instrument	Qualification
06/18/2018		746	492		QC	
05/23/2013	$53,400	719	123	VACANT	WD	M

04/21/2005	$0	695	527			
05/23/1994	$180,000	540	755	IMPROVED	WD	A
12/30/1980	$0	404	392			
01/07/1965	$0	219	417			
11/11/1952	$0	165	460			

Land Information

Deed Acres: 0.00 **Calc Acres:** 0.00 **Total Land Units:** 258.00

Land Type:	45 - CROP	**Soil Class:**	P	**Units:**	64.00
Land Type:	46 - ROTATION	**Soil Class:**	G	**Units:**	82.00
Land Type:	62 - WOODLAND 2	**Soil Class:**	A	**Units:**	48.00
Land Type:	46 - ROTATION	**Soil Class:**	P	**Units:**	39.00
Land Type:	62 - WOODLAND 2	**Soil Class:**	P	**Units:**	12.00
Land Type:	23 - NONPRODUCTIVE	**Soil Class:**		**Units:**	13.00

New Search Return to List View GIS Map for this Parcel

Glossary of Terms How to Search Fact Sheet

Division of Property Assessments Home Page
Comptroller of the Treasury Home Page
State of Tennessee Home Page

State of Tennessee Comptroller of the Treasury

Real Estate Assessment Data

Home | About | New Search | Return to List

County Number: 057 **County Name:** MADISON **Tax Year:** 2020

Property Owner and Mailing Address

Jan 1 Owner:
JOHNSON DON C
242 VINE HILL RD
JACKSON, TN 38301

Property Location

Address: DENMARK JACKSON RD

Map: 097 **Grp:** **Ctrl Map:** 097 **Parcel:** 013.09 **PI:** **S/I:** 000

Value Information

Reappraisal Year: 2018

Land Mkt Value:	$156,800	**Land Use Value:**	$86,000
Improvement Value:	$0	**Improvement Value:**	$0
Total Market Appraisal:	$156,800	**Total Use Appraisal:**	$86,000
		Assessment %:	25
		Assessment:	$21,500

General Information

Class:	11 - AGRICULTURAL		
City #:	000	**City:**	
SSD1:	000	**SSD2:**	000
District:	08	**Mkt Area:**	E50
# Bldgs:	2	**# Mobile Homes:**	0
Utilities - Water / Sewer:	11 - INDIVIDUAL / INDIVIDUAL	**Utilities - Electricity:**	01 - PUBLIC
Utilities - Gas / Gas Type:	00 - NONE	**Zoning:**	

Subdivision Data

Subdivision:

Plat Bk: **Plat Pg:** **Block:** **Lot:**

Additional Description

Building Information

Extra Features

Sale Information

Sale Date	Price	Book	Page	Vac/Imp	Type Instrument	Qualification
11/06/2018		748	1162		QC	

Land Information

Deed Acres:	54.00	**Calc Acres:**	0.00	**Total Land Units:**	54.00
Land Type:	45 - CROP	**Soil Class:**	P	**Units:**	30.00
Land Type:	46 - ROTATION	**Soil Class:**	G	**Units:**	14.00
Land Type:	62 - WOODLAND 2	**Soil Class:**	A	**Units:**	7.00
Land Type:	23 - NONPRODUCTIVE	**Soil Class:**		**Units:**	3.00

New Search Return to List View GIS Map for this Parcel

Glossary of Terms How to Search Fact Sheet

Division of Property Assessments Home Page Comptroller of the Treasury Home Page State of Tennessee Home Page

State of Tennessee Comptroller of the Treasury

Real Estate Assessment Data

Home | About | New Search | Return to List

County Number: 057 **County Name:** MADISON **Tax Year:** 2020

Property Owner and Mailing Address

Jan 1 Owner:
JOHNSON DON C
242 VINE HILL RD
JACKSON, TN 38301

Property Location

Address: DENMARK JACKSON RD 741

Map: 097 **Grp:** **Ctrl Map:** 097 **Parcel:** 013.06 **PI:** **S/I:** 000

Value Information

Reappraisal Year: 2018

Land Mkt Value:	$342,700	**Land Use Value:**	$178,200
Improvement Value:	$65,600	**Improvement Value:**	$65,600
Total Market Appraisal:	$408,300	**Total Use Appraisal:**	$243,800
		Assessment %:	25
		Assessment:	$60,950

General Information

Class:	11 - AGRICULTURAL		
City #:	000	**City:**	
SSD1:	000	**SSD2:**	000
District:	08	**Mkt Area:**	E50
# Bldgs:	2	**# Mobile Homes:**	0
Utilities - Water / Sewer:	11 - INDIVIDUAL / INDIVIDUAL	**Utilities - Electricity:**	01 - PUBLIC
Utilities - Gas / Gas Type:	00 - NONE	**Zoning:**	

Subdivision Data

Subdivision:

Plat Bk: **Plat Pg:** **Block:** **Lot:**

Additional Description

TR 1

Building Information

Building # 1

Improvement Type:	01 - SINGLE FAMILY	**Stories:**	2
Living/Business Sq. Ft.:	4,134		
Heat and A/C:	08 - HEAT & COOLING PKG	**Plumbing Fixtures:**	9
Exterior Wall:	11 - COMMON BRICK	**Quality:**	01 - AVERAGE
Act Yr Built:	1964	**Condition:**	A - AVERAGE

Building Areas:

Area: BAS **Sq Ft:** 2,586
Area: USF **Sq Ft:** 1,548
Area: BMU **Sq Ft:** 1,548
Area: GRF **Sq Ft:** 725
Area: OPF **Sq Ft:** 423
Area: OPF **Sq Ft:** 270
Area: OPF **Sq Ft:** 270
Area: EPF **Sq Ft:** 90

Building # 2

Improvement Type:	01 - SINGLE FAMILY	**Stories:**	1
Living/Business Sq. Ft.:	984		
Heat and A/C:	00 - NONE	**Plumbing Fixtures:**	3
Exterior Wall:	10 - CONC BLOCK/BRICK	**Quality:**	01 - AVERAGE
Act Yr Built:	1946	**Condition:**	A - AVERAGE

Building Areas:

Area: BAS **Sq Ft:** 984
Area: UTU **Sq Ft:** 250

Extra Features

Bldg/Card#	Type	Description	Units
1	PATIO		575

Sale Information

Sale Date	Price	Book	Page	Vac/Imp	Type Instrument	Qualification
11/06/2018		748	1150		QC	

Land Information

Deed Acres: 124.50 **Calc Acres:** 0.00 **Total Land Units:** 124.50

Land Type:	45 - CROP	**Soil Class:**	P	**Units:**	37.00
Land Type:	46 - ROTATION	**Soil Class:**	G	**Units:**	22.00
Land Type:	46 - ROTATION	**Soil Class:**	P	**Units:**	45.00
Land Type:	62 - WOODLAND 2	**Soil Class:**	P	**Units:**	13.00
Land Type:	23 - NONPRODUCTIVE	**Soil Class:**		**Units:**	6.50
Land Type:	04 - IMP SITE	**Soil Class:**		**Units:**	1.00

New Search Return to List View GIS Map for this Parcel

Glossary of Terms How to Search Fact Sheet

Division of Property Assessments Home Page
Comptroller of the Treasury Home Page
State of Tennessee Home Page

State of Tennessee Comptroller of the Treasury

Real Estate Assessment Data

Home | About | New Search | Return to List

County Number: 057 **County Name:** MADISON **Tax Year:** 2020

Property Owner and Mailing Address

Jan 1 Owner:
HUTCHISON KAREN SHELTON
766 SMITH LN
JACKSON, TN 38301

Property Location

Address: WOMACK LN

Map: 097 **Grp:** **Ctrl Map:** 097 **Parcel:** 013.00 **PI:** **S/I:** 000

Value Information

Reappraisal Year: 2018

Land Mkt Value:	$456,900	**Land Use Value:**	$246,300
Improvement Value:	$0	**Improvement Value:**	$0
Total Market Appraisal:	$456,900	**Total Use Appraisal:**	$246,300
		Assessment %:	25
		Assessment:	$61,575

General Information

Class:	11 - AGRICULTURAL		
City #:	000	**City:**	
SSD1:	000	**SSD2:**	000
District:	08	**Mkt Area:**	E50
# Bldgs:	2	**# Mobile Homes:**	0
Utilities - Water / Sewer:	11 - INDIVIDUAL / INDIVIDUAL	**Utilities - Electricity:**	01 - PUBLIC
Utilities - Gas / Gas Type:	00 - NONE	**Zoning:**	

Subdivision Data

Subdivision:

Plat Bk: **Plat Pg:** **Block:** **Lot:**

Additional Description

TR 2

Building Information

Extra Features

Sale Information

Sale Date	Price	Book	Page	Vac/Imp	Type Instrument	Qualification
11/06/2018		748	1154		QC	
07/11/2011	$10,000	709	1018	IMPROVED	WD	B

12/31/2001	$10,000	624	749	IMPROVED	WD	B
12/30/2001	$10,000	624	747	IMPROVED	WD	B
12/29/2001	$10,000	624	743	IMPROVED	WD	B
12/28/2001	$0	624	739			
12/27/2001	$0	624	737			
12/27/2001	$0	624	733			
12/27/2001	$0	624	735			
01/06/2000	$0	614	558			
01/05/2000	$0	614	556			

Land Information

Deed Acres: 166.74 **Calc Acres:** 0.00 **Total Land Units:** 166.74

Land Type:	45 - CROP	**Soil Class:**	P	**Units:**	80.00
Land Type:	46 - ROTATION	**Soil Class:**	G	**Units:**	39.00
Land Type:	46 - ROTATION	**Soil Class:**	P	**Units:**	7.00
Land Type:	62 - WOODLAND 2	**Soil Class:**	A	**Units:**	8.00
Land Type:	23 - NONPRODUCTIVE	**Soil Class:**		**Units:**	8.74
Land Type:	62 - WOODLAND 2	**Soil Class:**	P	**Units:**	24.00

New Search Return to List View GIS Map for this Parcel

Glossary of Terms How to Search Fact Sheet

Division of Property Assessments Home Page
Comptroller of the Treasury Home Page
State of Tennessee Home Page

Appendix G

USDA Prime Farmland Coordination

Annie Bavis

From: Pilakowski, Ashley Anne <aapilakowski@tva.gov>
Sent: Friday, October 2, 2020 3:08 PM
To: Ashley Pilakowski
Subject: FW: Solar Farm FPPA Reviews

Importance: High

FYI – please see below. This is a brand new development for us. Please edit draft EAs as appropriate. We will use this email as our justification if we receive any pushback from the public.

Thank you,
Ashley

From: Friend, Aaron - NRCS, Nashville, TN <aaron.friend@usda.gov>
Sent: Friday, October 02, 2020 3:47 PM
To: Pilakowski, Ashley Anne <aapilakowski@tva.gov>
Subject: RE: Solar Farm FPPA Reviews

Ashley,

This will apply to all TVA solar farm RFPs where power is being purchased and no federal funding is involved in the construction process.

Best,

Aaron Friend
State Soil Scientist - Tennessee
USDA-NRCS
801 Broadway
675 U.S. Courthouse
Nashville, TN 37203
Mobile: 615-202-6092

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USDA is an equal opportunity provider, employer, and lender.

From: Pilakowski, Ashley Anne <aapilakowski@tva.gov>
Sent: Friday, October 2, 2020 2:41 PM
To: Friend, Aaron - NRCS, Nashville, TN <aaron.friend@usda.gov>
Subject: RE: Solar Farm FPPA Reviews

Hi Aaron,

Thank you so much for responding so quickly. Can you please just confirm that this conclusion applies to any solar farm in which TVA is only purchasing the power, and not funding the construction? If so, we will cease contacting your office for these projects moving forward.

Thank you,
Ashley

From: Friend, Aaron - NRCS, Nashville, TN <aaron.friend@usda.gov>
Sent: Friday, October 02, 2020 3:28 PM
To: Pilakowski, Ashley Anne <aapilakowski@tva.gov>
Subject: RE: Solar Farm FPPA Reviews

Ashley,

I have followed up with all of my resources and have come to the conclusion that the solar farm in questions do not require an FPPA reviews. This decision is based on the fact that no federal funds are being used in the construction process. I hope this decision helps clarify and streamline activities on your end. Please let me know if you have any questions or concern.

Have a great weekend!

Aaron Friend
State Soil Scientist - Tennessee
USDA-NRCS
801 Broadway
675 U.S. Courthouse
Nashville, TN 37203
Mobile: 615-202-6092

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From: Pilakowski, Ashley Anne <aapilakowski@tva.gov>
Sent: Friday, October 2, 2020 10:03 AM
To: Friend, Aaron - NRCS, Nashville, TN <aaron.friend@usda.gov>
Subject: RE: Solar Farm FPPA Reviews

Hi Aaron,

I tried calling your mobile, but it seems your VM is not set up. Please give me a call on my cell when you have a chance (240) 838-6348.

Thank you,
Ashley

From: Friend, Aaron - NRCS, Nashville, TN <aaron.friend@usda.gov>
Sent: Thursday, October 01, 2020 5:20 PM

To: Pilakowski, Ashley Anne <aapilakowski@tva.gov>
Subject: Re: Solar Farm FPPA Reviews

Ashely,

I am available after 11:00. The mobile line is perfect.

Aaron

Get Outlook for iOS

From: Pilakowski, Ashley Anne <aapilakowski@tva.gov>
Sent: Thursday, October 1, 2020 3:17:12 PM
To: Friend, Aaron - NRCS, Nashville, TN <aaron.friend@usda.gov>
Subject: RE: Solar Farm FPPA Reviews

Hi Aaron,

Are you available to discuss tomorrow? I'd like to talk through these projects if possible. Can I reach you on your mobile number listed below?

Thanks,

Ashley Pilakowski
NEPA Specialist
NEPA Program

Tennessee Valley Authority
400 W. Summit Hill Drive, WT 11B
Knoxville, TN 37902

865-632-2256 (w)
aapilakowski@tva.gov

From: Friend, Aaron - NRCS, Nashville, TN <aaron.friend@usda.gov>
Sent: Thursday, October 01, 2020 2:25 PM
To: Pilakowski, Ashley Anne <aapilakowski@tva.gov>
Subject: Solar Farm FPPA Reviews

Good afternoon Ashely,

I am the new Tennessee State Soil Scientist for the NRCS and point of contact for FPPA reviews within the state. We have recently received FPPA request for the Skyhawk Solar Facility and the McKellar Solar Facility. Based on our understanding of these projects, there is no need for an FPPA review since no federal funding is involved in the actual construction of these solar farms.

Can you please clarify any funding and/or contractual arrangement that may warrant an FPPA review?

Regards,

Aaron Friend
State Soil Scientist - Tennessee
USDA-NRCS
801 Broadway
675 U.S. Courthouse
Nashville, TN 37203
Mobile: 615-202-6092

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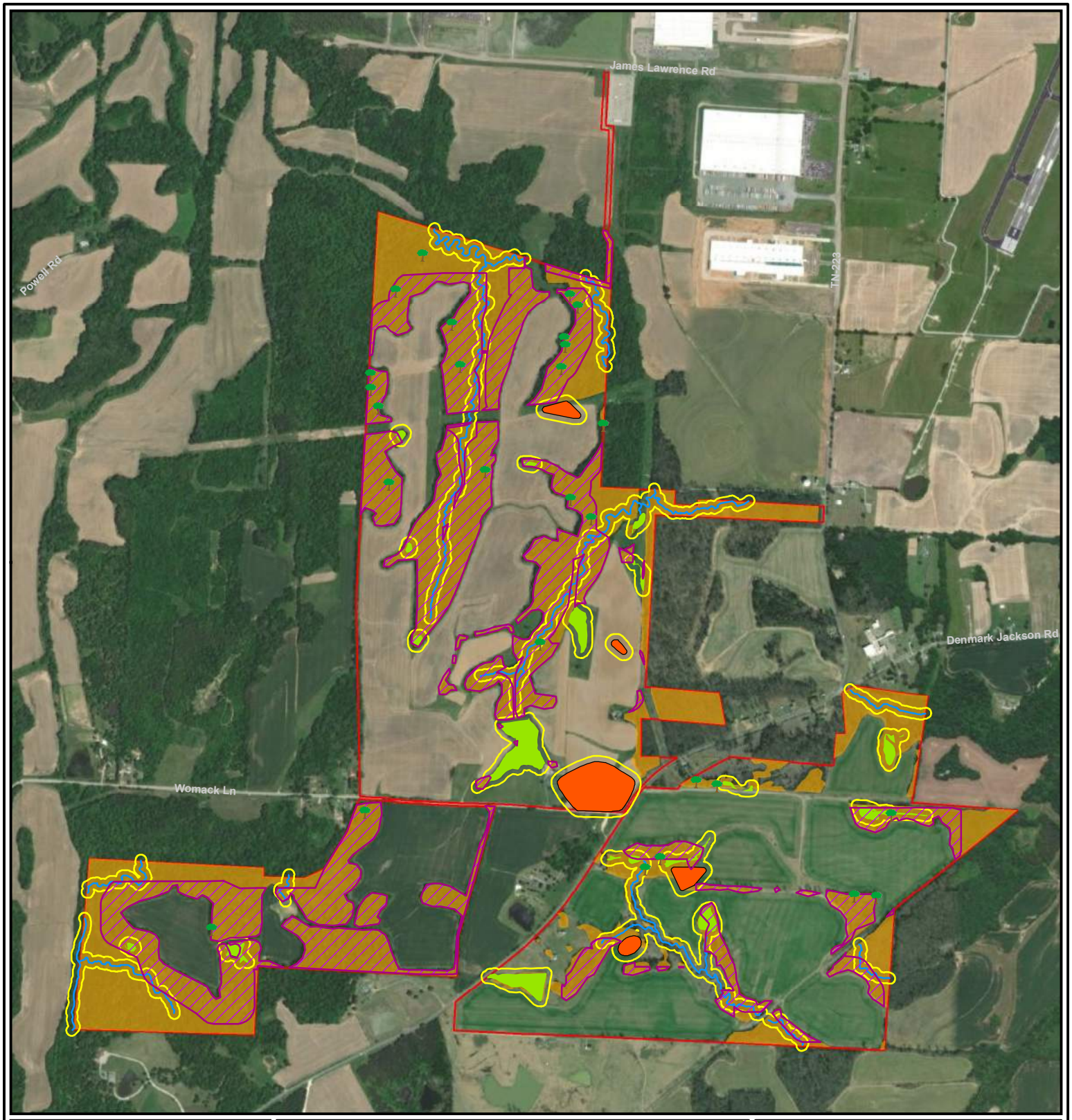
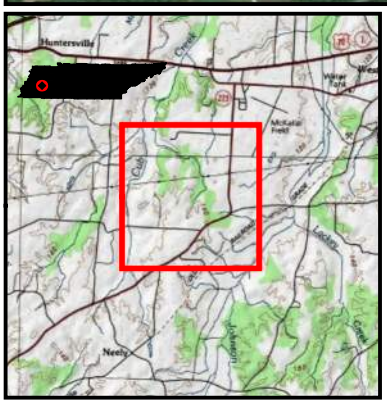
Appendix H

Tree Clearing Map and Bat Habitat Map





- Sensitive Area Buffer
- Solar Array Tree Clearing Area (100% to be Cleared)
- Woodland Area (70% to be Cleared)
- Potential Bat Roost Tree to be Cleared
- Stream
- Wetland
- NRHP Undetermined Archaeological Resource
- Project Study Area

N

1 inch = 1,500 feet

0 250 500 1,000 1,500 2,000 Feet

Basemap: ESRI World Imagery
Source Data: TN ROADS

PROJECT:
Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

TITLE:
AREA OF POTENTIAL TREE CLEARING MAP

PROJ NO: 3609510

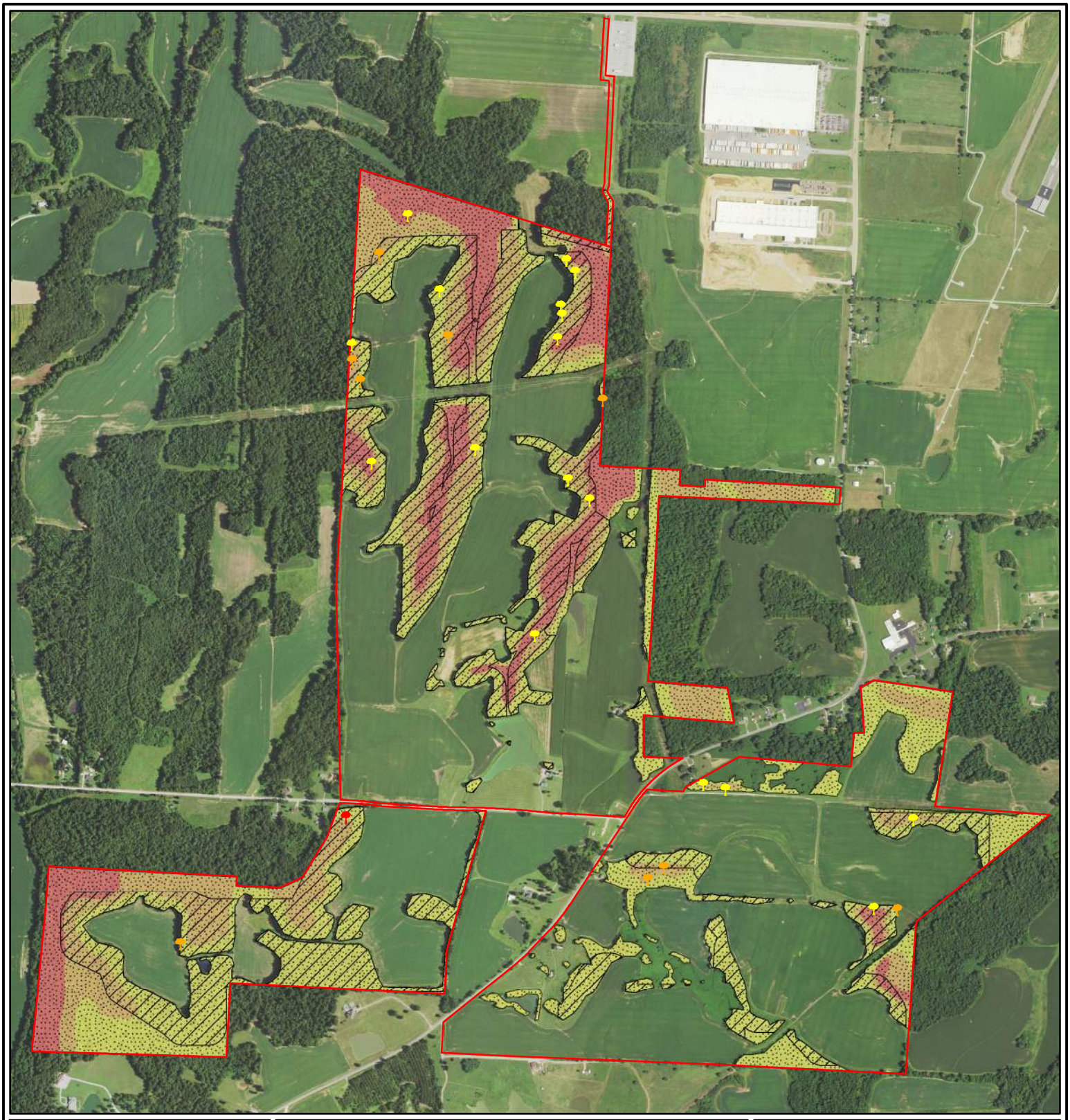
DATE: February, 2021

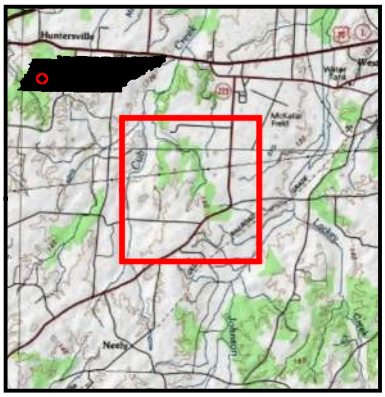
FIGURE 1

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\Addtional_EA_Maps\Tree_Clearing_Map_With_Buffers.mxd





Potential Bat Roost Tree

Habitat Value

- Exceptional
- Good
- Marginal
- Poor

Bat Habitat Woodlands

Quality

- Good
- Marginal
- Poor

- Solar Array Tree Clearing Area (100% to be Cleared)
- Woodland Area (70% to be Cleared)
- Project Study Area

N

0 0.5 1 2 3 4 Miles

Basemap: ESRI World Imagery
Source Data: TN ROADS

Silicon Ranch Corporation
McKellar Solar Farm
Jackson, Madison County, Tennessee

BAT HABITAT QUALITY MAP

PROJ NO: 3609510

DATE: February, 2021

FIGURE 7

BARGE DESIGN SOLUTIONS
615 3rd Avenue South, Suite 700
Nashville, TN 37210

SILICON RANCH

Path: F:\36\36095\3609510\03_PROJECT_EXECUTION\EWR\GIS\MXD\Addtional_EA_Maps\Bat_Habitat.mxd

Appendix I

Cultural Resources Consultation Information

TENNESSEE HISTORICAL COMMISSION
STATE HISTORIC PRESERVATION OFFICE
2941 LEBANON PIKE
NASHVILLE, TENNESSEE 37243-0442
OFFICE: (615) 532-1550
www.tnhistoricalcommission.org

January 4, 2021

Mr. Clinton E. Jones
Tennessee Valley Authority
Biological and Cultural Compliance
400 West Summit Hill Drive
Knoxville, TN 37902

RE: TVA / Tennessee Valley Authority, Silicon Rand Inc. McKeller Solar Array, Madison County, TN

Dear Mr. Jones:

In response to your request, we have reviewed the cultural resources survey report and accompanying documentation submitted by you regarding the above-referenced undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Considering the information provided, including the proposed avoidance of sites 40MD270, 40MD272, 40MD273, 40MD276, and 40MD279, we concur that no historic properties eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Questions or comments may be directed to Jennifer Barnett (615) 687-4780, Jennifer.Barnett@tn.gov.

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.

E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

EPM/jmb