



ENVIRONMENTAL INFORMATION DOCUMENT

Proposed Well No. 4 and Water Pipeline Ephesus, Georgia

Prepared for:

City of Ephesus
Ephesus, Georgia

Prepared by:

UES
Overland Park, Kansas

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SAFETY
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1.0 INTRODUCTION

This planning document has been prepared in accordance with the Georgia Department of Natural Resources Environmental Protection Division (EPD) requirements established for projects proposed to receive Georgia Drinking Water State Revolving Funds (DWSRF). This Environmental Information Document (EID) includes a basic description of the proposed project, and an assessment of potential effects on environmental, cultural, and natural resources in the vicinity of the project area in accordance with the State Environmental Review Process (SERP) guidance (Georgia EPD, 2004).

1.1 Purpose and Need for Project

The purpose of this proposed project is to construct a new supply well, City of Ephesus Well No. 4 and install a pipeline from this well to the existing water distribution system. The new supply well and pipeline are needed to supplement the City of Ephesus' water supply to provide sufficient drinking water to the community during periods of peak water demand. Existing water providers for the City are not able to provide sufficient and sustainable quantities of water during periods of peak demand. The new supply well and pipeline would also become the primary source of water for the City and provide water at a more economical cost compared to purchasing water from available supplies.

Construction and development of Well No. 4 and installation of the water pipeline would also meet the EPD requirement to provide a back-up water supply source that can provide 100 gallons per day (gpd) if the primary source becomes nonfunctional per Rule 391-3-5-.06(1).

1.2 City of Ephesus Water System Current Situation

The Ephesus Water System provides potable water to the approximately 424 residents of the City plus the Ephesus Elementary School, churches, commercial businesses and eight poultry farms in nearby outlying areas of Heard and Carroll Counties. There are 525 metered connections with an estimated service population of 1,248 (TC Grizzard Associates (TCGA), 2023).

Water is currently purchased from the Heard County Water Authority (HCWA) and the City of Bowdon. The HCWA and City of Bowdon currently provide a combined average of 93,500 gpd from surface water treatment plants. Monthly water purchase volumes vary from 3 to 5 million gallons. The City of Ephesus supplements these sources of supply from City Well No. 2 on Thomas Street. Current daily withdrawals from City Well No. 2 average 10,250 gpd (TCGA, 2023). Well No. 2 does not provide a sufficient quantity of water to meet the back-up source water requirement in Rule 391-3-5-.06(1).

2.0 FUTURE SITUATION FOR CITY WATER SYSTEM

Since 2010 Heard County's population has grown 2.9% (World Population Review). The projected population growth for Heard County from the Georgia Office of Planning and Budget is summarized in Table 1. The City of Ephesus population is approximately 3.6% of the current Heard County population. Applying this percentage to the projected Heard County population in



2060 yields a projected city population of 462, which is an increase of 38 from the current service population of 424. No new large commercial/industrial developments are planned for Ephesus.

While the projected growth in population is relatively small, the need to obtain a more economical, cost effective water resource for the City remains. Current costs for water purchases are approximately three times the projected costs for the new Well No. 4 providing water service to the City.

**Table 1. Projected Population Growth
for Heard County 2025 – 2060**

Year	Population
2025	11,793
2030	12,240
2035	12,554
2040	12,744
2045	12,797
2050	12,857
2055	12,864
2060	12,839

Source: Georgia Office of Planning and Budget

3.0 ALTERNATIVES TO THE PROPOSED PROJECT

Construction of Well No. 4 and the proposed water pipeline to connect the new Well No. 4 to the existing water distribution system is the only practicable alternative for providing an economical, affordable water source for the City of Ephesus. Purchasing additional water from the City of Bowdon and the HCWA is possible on a short-term basis but is not economically or practicably reasonable given the costs and the regional water constraints for existing public water supply systems in west Georgia.

4.0 DESCRIPTION OF THE PROPOSED PROJECT

The proposed Well No. 4 would be advanced into the crystalline bedrock aquifer. The well would be constructed in accordance with the EPD Well Construction Standards at Rule 391-3-5-.06(5). After construction, the well would be properly developed, disinfected, and pump tested in accordance with the Minimum Standards for Public Water Systems (EPD, 2021)

The water pipeline would consist of a 6-inch diameter 1,500-foot long pipeline between new City of Ephesus water supply Well No. 4 and the existing City of Ephesus water distribution system (see Figure 1). The proposed pipeline would be installed beneath existing access roads located off of Highway 100 that extend eastward, then north to Well No. 4. The pipeline would be installed at a depth of approximately four feet. A well house approximately 20 x 20 feet in size would be constructed around the wellhead to house a back-up generator, chlorine container and mix tanks,



and polyphosphate and sodium hypochlorite injection pumps used for corrosion control and pH adjustment of well water.

5.0. RESOURCES/AREAS OF NO IMPACT

The following areas and categories in the SERP Environmental Checklist are not present on the City of Ephesus Well No. 4 property and will not be discussed in detail in this EID:

- Floodplains/River Corridors: FEMA Flood Insurance Rate Map for Unincorporated Areas of Heard County (Community Panel No. 13149C0020C shows no floodplain present on the City Well No. 4 property (see Figure 2).
- Protected Mountains: Under House Bill 643, which was passed by the 1991 Session of the General Assembly, lands which lie above 2,200 feet in elevation and have slopes of twenty-five (25%) or more, are identified as Protected Mountains. Elevation at Well No. 4 property ranges from 1,200 to 1,220 feet above sea level (see Figure 1).
- Critical Habitats: No critical habitats for Federally-listed or Georgia protected species have been identified.
- Beaches, Dunes, Estuaries, Barrier Islands and Coastal Zone Management Areas: The project area is not within or near a coastal sand dunes area, coastal shoreline area, or coastal river corridor and is not subject to the Georgia Shoreline Assistance Act of 1979 or House Bill 643. Heard County is not included in any of Georgia's Estuarine Salinity Zones (Georgia Environmental Sensitivity Index). Heard County is not within or near Georgia's coastal zone.
- Groundwater Recharge Areas: The northwest portion of Heard County is not shown is a significant area of groundwater recharge in the Georgia EPD databases and Georgia Geologic Survey Hydrologic Atlas 18 (Davis et al).
- Parks/Recreation Areas: There are no parks or recreation areas on or adjacent to the Well No. 4 property.
- Aquatic Life/Trout Streams: Streams are not present near the proposed water pipeline. Heard County does not have designated trout streams per Georgia EPD rule 393-3-6-.03(15)(b).
- Forests: The existing access road and proposed water pipeline route follow a corridor that was previously cleared through the trees. The Well No. 4 location is also in a previously cleared area. Additional clearance and forest impacts are not planned for this project.



- **Farmland:** Farmland is not present on the City of Ephesus property surrounding the proposed well and pipeline.
- **Cross Connection Control:** The proposed well and water pipeline will not be connected directly or indirectly with any non-potable or non-permitted water systems, or devices which contain or may contain contaminants which may be capable of imparting contamination to the public water system as the results of backflow, bypass arrangements, jumper connections, removable sections, swivel or other potential connections through which back-flow or back-siphonage could or would occur.
- **Environmental Justice:** U.S. Census data shows the white population of Ephesus comprises 99.1% of the total population of 553. The Ephesus minority population of 0.9% is well below Heard County's 14.2% minority population and lower than the State of Georgia and USA minority population percentages as well. Poverty rates for Ephesus, the State of Georgia and the USA are 11.9%, 12.7% and 11.5%, respectively. The project location is not situated within an area containing an "Environmental Justice" population.
- **Energy Supplies:** The proposed action will not have a significant impact on or result in a reduction of available energy supplies. Vehicles and heavy equipment used during construction will utilize gas and diesel fuels. The power for the well pump and back-up generator will utilize electrical power from the Carroll Electric Member Cooperative (EMC), which supplies more than 1 billion kilowatt-hours annually to over 25,000 members located in a seven-county area with a diversified portfolio of natural gas, nuclear, coal, renewable and hydro resources (Carroll EMC, 2022). The energy consumed by these sources is negligible in comparison to the total energy available in the area.
- **Site Safety:** Construction crews will follow the Occupational Safety and Health Administration (OSHA) Construction Industry regulations at 20 CFR 1926. Personnel performing operations and maintenance functions in the well house will use rubber/nitrile gloves, spill aprons and splash shields when handling liquid bleach or chlorine. The safety of the City of Ephesus work force and the surrounding residents will not be affected by project construction or operation.
- **Solid Wastes:** Scrap pipe materials and leftover construction supplies will be transported offsite for disposal or re-use by the construction contractor. Solid waste generated by the construction crew can be disposed of at any of the six Heard County Convenience Centers. Project construction should not result in the generation of hazardous wastes as defined under the Resource Conservation and Recovery Act (RCRA).

UES conducted field surveys to determine if there historic or archaeological resources, wetlands or Waters of the U.S. (WOTUS) or Federally-listed threatened and endangered (T & E) or Georgia protected species are present in the vicinity of the site. These surveys determined that



cultural/archaeological resources, wetlands/WOTUS, or protected species are not present at or in the vicinity of the site. The results of these surveys are summarized below. The survey reports for these resources are attached in Appendices B, C, and D.

5.1 Historic and Archaeological Resources Surveys

On December 12, 2023, UES Senior Archaeologist John Gorczyk, Ph.D., R.P.A., conducted background research for the project area using the Georgia Natural, Archaeological, Historical Resource Geographic Information System (GNAHRGIS) database, historic topographic maps and aerial photographs, and historic satellite imagery.

The Area of Potential Effect (APE) is defined as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, should any such properties exist (36 CFR 800 Section 106). The APE for the project includes both the area of direct impacts associated with the undertaking as well as the project's viewshed.

The direct APE encompasses the footprint of all proposed ground disturbing activities associated with the project. For this project, the direct APE is limited to the area of Well No.4 and the underground line that will connect it to the existing water distribution system. The direct APE consists of access roads off of Highway 100 that lead to Well No.4 (Figure 3). The underground water pipeline will be placed approximately 4 feet below the surface. Therefore, the project's vertical APE is approximately 4 feet below ground surface, with the exception of proposed Well No. 4. Other than the above ground structures associated with the new well, there will not be an above ground vertical APE.

The area of the direct APE and a 0.25-mile buffer radius was searched to identify previously recorded archaeological sites and inventories. Previously recorded or newly discovered archaeological resources are not present within the direct APE. One unevaluated standing structure is located within 0.25 miles of the proposed water line, but the undertaking will not be visible from the APE due to distance, intervening foliage, and the underground nature of the proposed water pipeline.

On December 14, 2023, Dr. Gorczyk carried out a Phase I archaeological survey for the project area, which involved an intensive pedestrian survey augmented with subsurface testing. The fieldwork followed the 2019 Georgia Standards and Guidelines for Archaeological Investigations set forth by the Georgia Council of Professional Archaeologists. The project area is classified as low probability: it has slopes ranging from 4-10% and does not lie within areas of high probability for Archaic, Woodland, or Mississippian remains according to the predictive model layers of GNAHRGIS. Therefore, a combination of intensive pedestrian survey and subjective shovel testing was utilized to evaluate potential impacts of the undertaking on cultural resources.

Four shovel test pits (STPs) were placed along the dirt access road that extends northward to Well No. (Figure 4). The STPs were placed at 30-meter intervals in a single line. The STPs



measured approximately 30 centimeters (cm) in diameter and were dug in arbitrary 10-centimeter levels following natural stratigraphy. The soil from each test was screened through 1/4-inch (6 millimeter) mesh. Each STP was dug to a depth of at least 20 cm into sterile subsoil. Soil screening did not reveal cultural materials or artifacts.

Based on the results of the Phase 1 archaeological survey, it is the professional opinion of UES that the proposed undertaking will have not have an effect on historic properties or other cultural resources. Therefore, UES does not recommend additional archaeological/cultural resources assessment at this time. A detailed discussion of these survey results is attached in the Phase I Archaeological Survey Report in Appendix A. This report and a Comment Request Letter were sent to the State Historic Preservation Officer at the Georgia Historic Properties Division (HPD) on March 4, 2024. The HPD comments will be included in the Draft EID that is sent to EPD.

5.2 Wetlands/Waters of the U.S.

UES reviewed the 7.5-minute United States Geological Survey (USGS) Topographic Map adapted from the Ropville Georgia quadrangle (1982) for land features that may indicate the presence of WOTUS (Figure 1). The map indicates moderately hilly topography with no evidence of streams, wetlands, or ponds. Site elevations vary between approximately 1,210 and 1,200 feet above mean sea level (AMSL). National Wetland Inventory and National Hydrography Dataset data did not indicate the presence of wetlands or other WOTUS on the Site. The Site is located in the HUC8 Middle Chattahoochee-Lake Harding watershed (03130002).

UES conducted field investigations at the Site on December 20, 2023. According to the National Oceanic and Atmospheric Association, approximately 6.21 inches of precipitation was recorded at the nearby Senoia Georgia weather station (US1GACW0008) in the 10 days previous to the Site visit. The majority of this rainfall (4.78 inches) fell on December 12, 2023.

The Site was examined for low lying areas, stream channels, and other features that could collect or transport water. Several areas were noted where water drained across the road through a swale. These drainage swales did not contain an ordinary high-water mark (OHWM) which would indicate the presence of stream. Other low-lying areas were not noted, and wetlands/WOTUS were not documented on the Site. It is the professional opinion of UES that the proposed undertaking will have not have a direct effect on regulated wetlands, streams, or other WOTUS.

Georgia EPD's DWSRF SERP Guidance allows that if no activities or facilities themselves is to occur in a stream, lake, or other body of water or in wetlands, the applicant can satisfy the U.S. Army Corps of Engineers' (USACE) comment requirement by submitting the below certified statement by a Georgia licensed Professional Engineer (PE):

“None of the construction activities or facilities themselves is to occur in a stream, lake, or other body of water or in wetlands. The project includes no stream crossings. Therefore, no US Army Corps of Engineers Permit is required.”



Mr. Tim Grizzard, a licensed Georgia PE, has reviewed the UES data above and provided the above certification statement, which is included in Appendix B along with the wetlands report.

5.3 Federal Threatened and Endangered Species, and Georgia Protected Species

Vegetation communities were present along both access roads where the proposed water pipeline will be constructed. Vegetation communities in this corridor were maintained through mowing and were composed of various grasses (*Poa sp.*) and other volunteer herbaceous plants. UES queried the U.S. Fish and Wildlife Service’s (USFWS’) Information for Planning and Coordination (IPaC) database to identify potential Federally-listed threatened and endangered (T&E) species that may occur in the vicinity of the Site. Forest habitats favored by the Northern Long-eared Bat, a Federally-endangered species (see Table 2 below), and Georgia protected plant species, such as Yellow Ladyslipper, Bay Star-vine and Georgia Aster (see Table 3 below) will not be impacted by the project. Granite bedrock and rocky outcrops favored by Georgia listed species, such as the Snorkelwort, Harper’s Dodder, Black-spored Quillwort and the Piedmont Barren Strawberry, are not present along the access roads and proposed pipeline corridor.

Table 2. Federally-listed Species from USFWS Information for Planning and Coordination (IPaC)

Common Name	Scientific Name	Federal Status	Habitat Summary
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Endangered	Caves, mines, forests; roosts in live trees, snags & less commonly in barns and sheds
Whooping Crane	<i>Grus americana</i>	Experimental population, non-essential	Coastal marshes, estuaries, lakes, open ponds, upland swales, wet meadows, pastures, tidal flats
Alligator Snapping Turtle	<i>Macrochelys temminckii</i>	Proposed Threatened	Rivers, lakes, swamps
Monarch Butterfly	<i>Danaus plexippus</i>	Candidate for listing	Milkweeds are host plant
Tricolored Bat	<i>Perimyotis subflavus</i>	Proposed Endangered	Deciduous hardwood forest habitats, road-associated culverts



**Table 3. State of Georgia Protected Plants and Animals
Documented within Heard County**

Common Name	Scientific Name	Protected Status ¹	Group	Georgia Habitat Summary
Pool Sprite, Snorkelwort	<i>Amphianthus pusillus</i>	Threatened (state and Federal)	Plant	Vernal pools on granite outcrops
Harper's Dodder	<i>Cuscuta harperi</i>	Endangered	Plant	Altamaha Grit outcrops; granite outcrops; often with <i>Liatris microcephala</i> as host
Bluestripe Shiner	<i>Cyprinella callitaenia</i>	Rare	Animal	Flowing areas in large creeks and medium-sized rivers over rocky substrates
Yellow Ladyslipper	<i>Cypripedium parviflorum</i>	Rare	Plant	Montane cove forests; rich deciduous forests
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Threatened	Animal	Edges of lakes and large rivers; seacoasts
Black-spored Quillwort	<i>Isoetes melanospora</i>	Endangered (state and Federal)	Plant	Vernal pools on granite outcrops
Highscale Shiner	<i>Notropis hypsilepis</i>	Rare	Animal	Flowing areas of small to large streams over sand or bedrock substrates
Bay Star-vine	<i>Schisandra glabra</i>	Threatened	Plant	Rich woods on stream terraces and lower slopes
Georgia Aster	<i>Symphotrichum georgianum</i>	Threatened	Plant	Upland oak-hickory-pine forests and openings; sometimes with <i>Echinacea laevigata</i> or over amphibolite
Piedmont Barren Strawberry	<i>Waldsteinia lobata</i>	Rare	Plant	Stream terraces and adjacent gneiss outcrops

¹ Listed in Georgia Rules & Regulations 391-4-10-.09.

Source: Georgia Biodiversity Portal at

https://georgiabiodiversity.org/portal/element_unit_map/qq/ga_protected

Occurrence data from the Georgia Biodiversity Portal was also reviewed to identify Georgia-listed species that have been documented in Heard County (see Table 3). The Quarter Quad maps in the Biodiversity Portal were also reviewed to identify known occurrences in the vicinity of the City of Ephesus. The Quarter Quad data did not show known occurrences for Georgia Protected Species documented on the Graham Southeast, AL-GA quadrangle map, and only one occurrence for the Highscale Shiner on the Roopville SW quadrangle map. The site



reconnaissance observations and Georgia Biodiversity Portal data indicate that impacts to Georgia Protected Species are not anticipated.

The surrounding forest included an overstory of loblolly pine (*Pinus taeda*), white oak (*Quercus alba*), southern red oak (*Q. falcata*), Shumard oak (*Quercus shumardii*), and American beech (*Fagus grandifolia*). The understory was composed of Chinese privet (*Ligustrum sinense*), sweetgum (*Liquidambar styraciflua*), Christmas fern (*Polystichum acrostichoides*) blackberry (*Rubus sp.*) and goldenrod (*Solidago, sp.*). The adjacent deciduous forest habitat may be suitable habitat for migratory birds (see Table 4 below) but will not be directly affected by project construction.

Table 4. Migratory Birds from USFWS IPaC Webpage¹

Common Name	Scientific Name	Habitat Summary
Chimney Swift	<i>Chaetura pelagica</i>	Eaves, hollow tress, chimneys and air shafts
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	Deciduous and mixed deciduous-pine forests with open understories
Kentucky Warbler	<i>Oporornis formosus</i>	Deep shaded woods with dense undergrowth, humid thickets, ravines in upland deciduous woods, and bottomlands near creeks and rivers
Prairie Warbler	<i>Dendroica discolor</i>	Young second growth and densely overgrown fields
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Large scattered trees, farm country, orchards, shade trees in towns, wood clearings
Wood Thrush	<i>Hylocichla mustelina</i>	Deciduous woodlands, suburban areas with large trees

¹ All of the species in the table are considered Birds of Conservation Concern throughout their range in the continental USA.

Source: IPaC and Audubon Field Guide at <https://www.audubon.org/field-guide/bird>.

Indirect impacts can cause delayed negative effects to the health or productivity of migratory birds. The USFWS indicates that collisions with human-caused sources are one of the most significant forms of migratory bird mortality. Habitat loss or conversion of habitat to another land use are another form of indirect impact. This proposed project is unlikely to affect migratory birds since the adjacent forest habitat cover will remain undisturbed during project construction and the relatively brief period of time required for construction.

A Comment Request Letter was sent to the USFWS Georgia Ecological Services Field Office on March 4, 2024. The USFWS comments will be addressed in the Draft EID sent to EPD.



6.0 RESOURCES/AREAS POTENTIALLY IMPACTED BY PROPOSED PROJECT

This section discusses potential impacts to water resources, air quality, soil stability/erodibility, and noise.

6.1 Water Resources

Constructing Well No. 4 and a new water pipeline to convey water from the new well will not result in a relatively large demand for water from available water resources. Well No. 4 would draw from the crystalline rock aquifer that underlies much of the Piedmont and Blue Ridge physiographic provinces of Georgia. Water in this aquifer is present in discontinuous joints and fractures and may be confined or unconfined (Leeth et al, 2001). Water-bearing zones of this aquifer occur in areas where weathering of the rock has produced openings that enhance permeability and allow for the storage and flow of groundwater. Groundwater exploration in the Piedmont Province of Georgia has historically been unpredictable due to the heterogeneous nature of the metamorphic and igneous crystalline bedrock (USGS, 1996).

The proposed action likely does not have the potential for decreasing the quantity of water available from the crystalline aquifer. There are no other public water systems or agricultural operations utilizing groundwater within Heard County (GA EPD, 2020).

6.2 Wastewater

The proposed project will not generate sanitary wastewater flows. Construction crews will bring port-a-johns onsite which will be pumped out or hauled offsite for disposal of accumulated human waste.

After the installation of the new well and pump, Well No. 4 will be developed, disinfected and pump tested in accordance with the Minimum Standards for Public Water Supply System (EPD, 2021). Well development and pump testing activities are expected to generate discharges of relatively large quantities of raw water from the crystalline aquifer. Georgia EPD may authorize the discharges of non-stormwater from potable water sources under General NPDES Permit No. GAR100002, III.A.2 that applies to Infrastructure Construction Projects resulting in contiguous land disturbances equal to or greater than one acre. The City of Ephesus will develop an Erosion, Sedimentation and Pollution Control (ESPC) Plan for the stormwater and non-stormwater discharges associated with the proposed project meeting General NPDES Permit No. GAR100002 requirements. The ESPC Plan and Notice of Intent for coverage under General NPDES Permit No. GAR100002 will be submitted to the EPD Watershed Protection Branch at least 14 days prior to commencement of construction.

The ESPC Plan will include appropriate Best Management Practices (BMPs) that will be implemented in accordance with the design specifications in the Georgia Soil and Water Conservation Commission Manual for Erosion and Sediment Control in Georgia. The ESPC Plan BMPs will be designed and implemented to minimize disturbance from the deposition and discharge of sediment-laden waters from well development and aquifer test activities.



During the construction of the water pipeline, precipitation can contact exposed soils in the excavation and temporary stockpiles adjacent to the excavation. Silt fencing or other appropriate BMPs identified in the ESPC Plan will be erected to surround the excavation and stockpile areas planned for each day of construction to reduce the potential for migration of stormwater and soil from the daily work area. Impermeable covers will be placed over open excavation and soil stockpile areas at the end of each workday. Silt fences will be moved as needed as pipeline construction moves along the proposed pathway. If visible migration of soil occurs beyond any portion of a silt fence, repairs, the fence will be reinstalled or relocated if the fence will be promptly.

6.3 Air Quality

Heavy equipment and trucks used for project construction will result in generated air emissions from the combustion of fuel, but not in quantities that are anticipated to degrade air quality. If project construction generates visible dust, exposed soils will be wetted.

The 50 kilo-volt-ampere (KVA) generator planned for installation in the well house will utilize propane fuel and will be used exclusively to provide back-up power for the well pump for less than 200 hours per year. Facilities that operate emergency generators that burn natural gas/LPG, #1 fuel oil (kerosene/JP4 or JP5) and/or #2 fuel oil/diesel exclusively, are deemed to have a Permit-By-Rule if they meet certain power production limits and monitoring and recordkeeping requirements per Georgia Regulation 391-3-1-.03(11)(b)(3), and should not need Georgia State Implementation Plan (SIP) construction and operating permits (issued as a single permit).

6.4 Soil Stability/Erodibility

The soils along the proposed water pipeline route are classified as Madison gravelly sandy loam (MdC) and Madison gravelly sandy clay loam (MfD2) (see Figure 5; USDA NRCS Web Soil Survey). MdC soils are well drained, derived from residuum weathered from mica schist and/or gneiss, and located on hills and ridges with 6 to 10 per cent (%) slopes. The typical profile for MdC soils show gravelly sandy loam to a 5-inch depth, clay from 5 – 30 inch depths, clay loams from 30 – 36 inch depths underlain by sandy loam from 36 to 80 inches. The length of the existing gravel drive leading to new Well No. 4 on the Site lies within the MdC soil area.

MfD2 soils are well drained, eroded, derived from residuum weathered from mica schist and/or gneiss, and located on hills with 10 – 15% slopes. The typical profile for MfD2 soil show gravelly fine sandy loam to a 5-inch depth, lay loam from 5 – 36 inch depth underlain by sandy loam from a 36 to 52 inch depth. Most of the existing dirt road extending from the gravel road to the new well lies within the MfD2 soil area.

Site soils will be temporarily disturbed and displaced during pipeline placement and construction. Soil erosion will be controlled with silt fences or other appropriate BMPs identified in the ESPC, Plan and will not be allowed to migrate from the project corridor or onto adjacent properties.



6.5 Noise

Construction of the new water pipeline will generate noise from the use of trucks and heavy equipment, such as backhoes, excavators, compactors, rollers and generators. These vehicles and equipment items generate noise during site preparation, excavation, pipeline installation and grading work. The levels of noise generated by these vehicles and equipment during these activities are shown in Table 5 below.

Table 5. Construction Equipment and Vehicle Noise Emission Levels

Equipment	Average Noise Level* (in dBA)	Vehicles	Typical Sound Levels (dB)
Truck	88	Ambulance Siren	100 (at 100 feet)
Backhoe	80	Motorcycle	90 (at 25 feet)
Compactor (ground)	85	Diesel truck 40 mile per hour (mph)	85 (at 50 feet)
Loader	81	Automobile 65 mph	75
Generator **	81	Power Lawn Mower	95 (at 3 feet)
Pumps	76	Light Street Traffic	50 (at 100 feet)

*From a single source at a distance of 50 feet

** Back-up generator for Well No. 4 will be housed inside wellhouse which will provide noise level reduction.

dBA stands for “A” weighted decibels. “A” weighting is applied to measure sound levels to compensate for the different perceptions of loudness since human hear higher-pitches sounds more easily than lower ones of the same magnitude.

Source: FHWA Highway Construction Noise Handbook, 2006

After construction noise levels at this property would return to ambient levels.

The closest sensitive noise receptors are a residence located approximately 300 feet to south of the Site, the Ephesus Community Center, located approximately 750 feet to the northwest of the Site and the Ephesus Baptist Church, located approximately 1,200 feet to the north-northwest of the Site (see Figure 6). Construction noise at the Site would be expected to dissipate within the distance to each of these noise receptors to a sufficient degree to not create noise concerns or complaints from the local community or surrounding property occupants.

7.0 PUBLIC PARTICIPATION

After review of this draft EID by the USFWS and the Georgia Historic Properties Division, a public meeting will be scheduled to provide an opportunity for public input on the EID and water pipeline project. At least 30 days prior to the scheduled meeting, notice of the public meeting will be published in local and regional newspaper(s). The notice will provide a brief description of the project, the need for the project, and include other relevant available environmental information, state where the EID is available for public review, and furnish a contact name and telephone number for additional information.



8.0 REFERENCES

Audubon Field Guide webpages at <https://www.audubon.org/field-guide/bird/>.

Carroll electric Membership Cooperative. 2022 Annual Reort.

Davis, Kenneth R., John C. Donahue, Robert H. Hutcheson and Deborah L. Waldrop, 1989. Most Significant Ground-Water Recharge Areas of Georgia. Hydrologic Atlas 18. GDNR EPD and Georgia Geologic Survey.

Donahue, John C. and Susan R. Kibler, 2007. Ground-Water Quality in the Piedmont/Blue Ridge Unconfined Aquifer System of Georgia. GDNR EPD, Watershed Protection Branch, Regulatory Support Program. Circular 12U.

FHWA Highway Construction Noise Handbook. Final Report August 2006. FHWA-HEP-06-015. DOT-VNTSC-FHWA-06-02. Prepared by U.S. Department of Transportation Research and Innovative Technology Administration John A. Volpe National Transportation Systems Center Environmental Measurement and Modeling Division, Acoustics Facility, Cambridge, MA.

Georgia Biodiversity Portal at https://georgiaviodiversity.org/portal/element_unit_map/qq/ga_protected.

Georgia Environmental Protection Division (EPD), 2004. Georgia's Drinking Water State Revolving Fund State Environmental Review Process. Administered by Georgia Environmental Facilities Authority. January.

Georgia EPD. List of Non-Farm Groundwater Withdrawal Permits. Revised November, 2020.

Georgia EPD, 2023. Authorization To Discharge Under the National Pollutant Discharge Elimination System Stormwater Discharges Associated With Construction Activity For Infrastructure Construction Projects. General NPDES Permit No. GAR100002. Signed June 20th.

Georgia EPD, 2021. Minimum Standards For Public Water Systems. Watershed Protection Branch Drinking Water Program. Revised March.

Georgia Environmental Sensitivity Index Map.
Georgia's Estuarine Salinity Zones Map.

Georgia Office of Planning and Budget. County Population Projections 2025-2060.

Georgia Rules & Regulations 391-4-10-.09. Lists of Georgia Protected Species.



Georgia Soil and Water Conservation Commission, 2016. Manual For Erosion and Sediment Control in Georgia.

Heard County Georgia Code of Ordinances. Available online at Municode.com.

Leeth, David C., John S. Clarke, Steven D. Craigg, and Caryl J. Wipperfurth. Ground-water Conditions and Studies in Georgia, 2001. USGS Water-Resources Investigations Report 03-4032. Published 2003.

TC Grizzard Associates, Inc., 2023. Categorical Exclusion Request City of Ephesus, Georgia. WSIP #1490006, Proposed Well #4 Wayne Prince Well. Submitted to Georgia EPD on July 21st.

U.S. Census Bureau (USCB), 2023. Poverty in the U.S.: 2022. By Shrider, Emily J. and John Creamer. Issued: September.

USCB QuickFacts Population Estimates July 1, 2023 for Heard County and State of Georgia.

U. S. Department of Agriculture, Natural Resources Conservation Service Web Soil Survey, 2023. Soil Map – Coweta, Heard, and Troup Counties, Georgia. Accessed January 18, 2024.

U.S. Department of Homeland Security, Federal Emergency Management Agency. Flood Insurance Rate Map Community Panel No. 13149C0020C, Effective Date: 8/19/2010.

U.S. Fish and Wildlife Services (USFWS). Information for Planning and Coordination (IPaC) webpage information on Federally-listed Threatened and Endangered Species for site are.

U. S. Geological Survey (USGS). Ground Water Atlas of the United States: Alabama, Florida, Georgia, South Carolina. HA 730-G.

USGS, 2001. Ground-Water Conditions and Studies in Georgia, 2001. Water-Resources Investigations Report 03-4032. By Davi

USGS, 1996. Ground-Water Resources of the Middle Chattahoochee River Basin in Georgia and Alabama, and Upper Flint River Basin in Georgia – Subarea 2 of the Apalachicola-Chattahoochee-Flint and Alabama-Coosa-Tallapoosa River Basins. Prepared in cooperation with the Alabama Department of Economic and Community Affairs Office of Water Resources, GDNR EPD, Northwest Florida Water Management District and the U.S. Army Corps of Engineers, Mobile District.

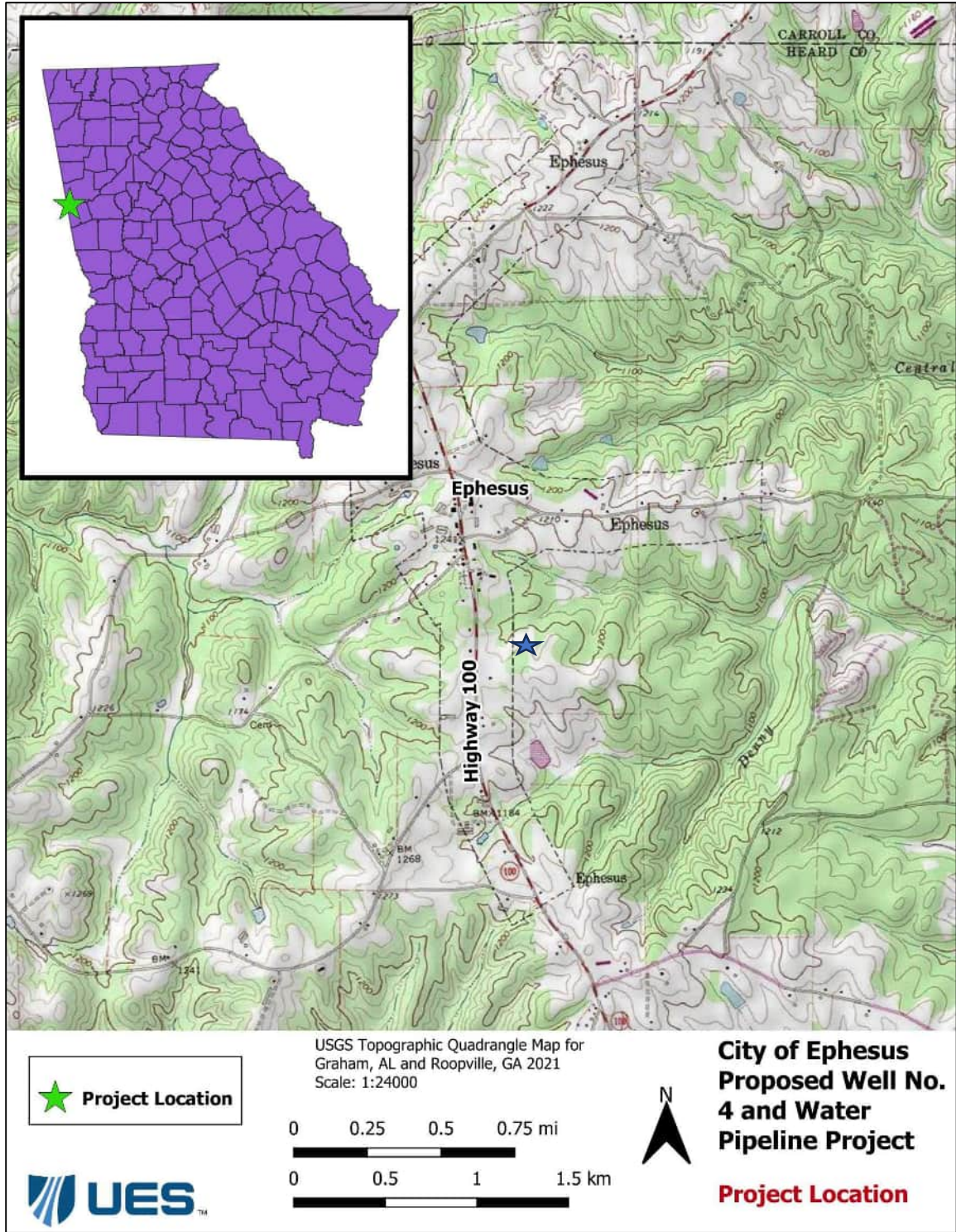


Figure 1. Project Location Map.

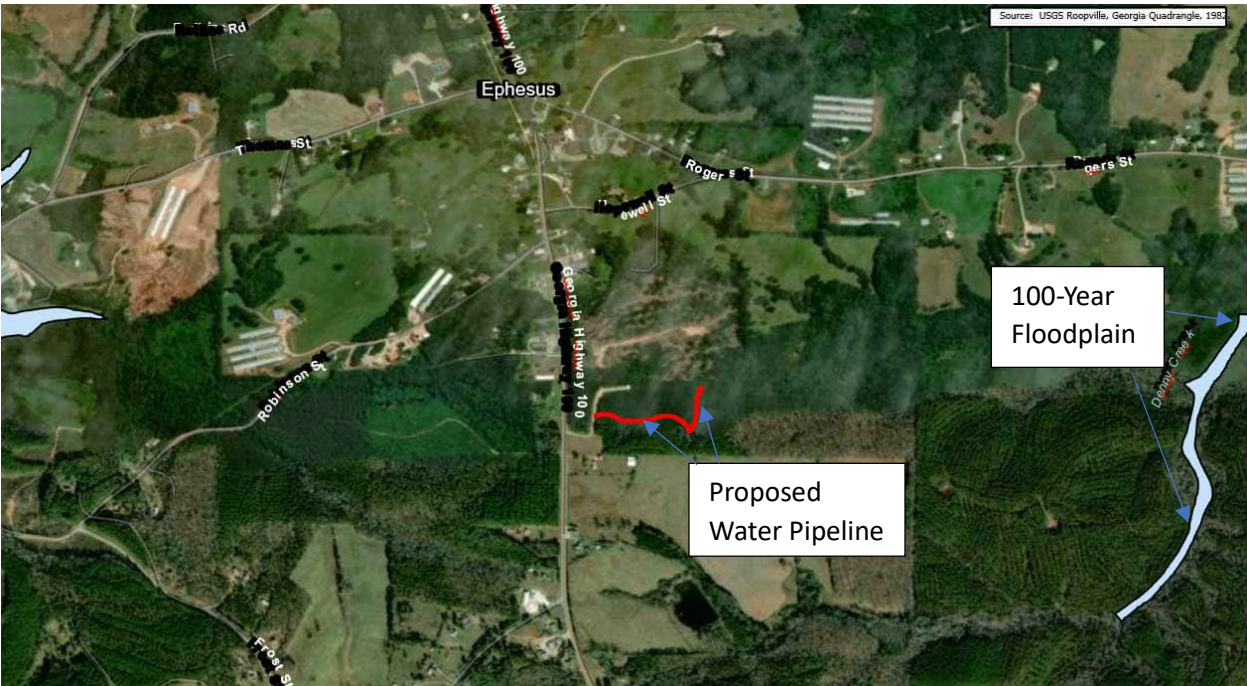


Figure 2. FEMA Flood Insurance Rate Map for Unincorporated Areas of Heard County.

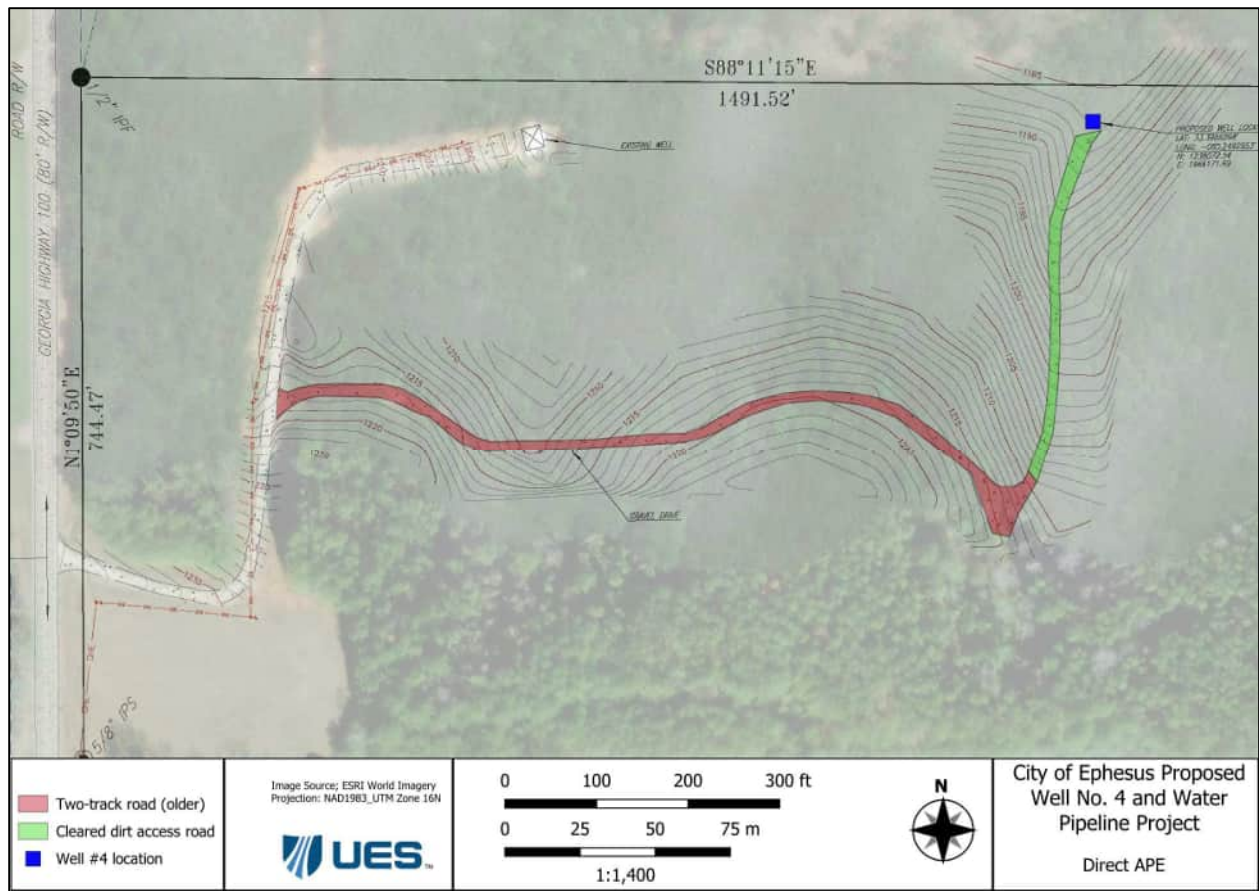


Figure 3. Project Survey Area (Direct APE).

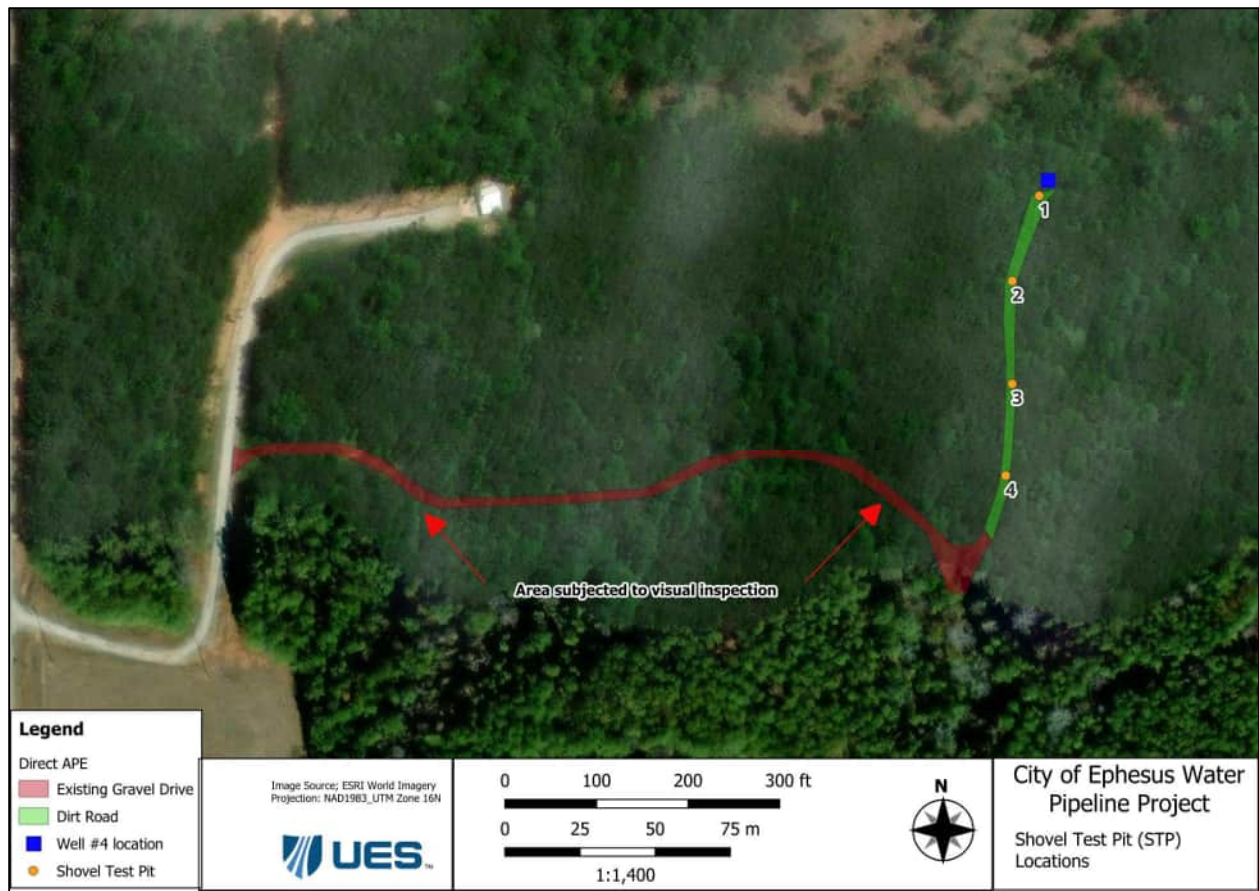


Figure 4. Map of Shovel Test Pit Locations.

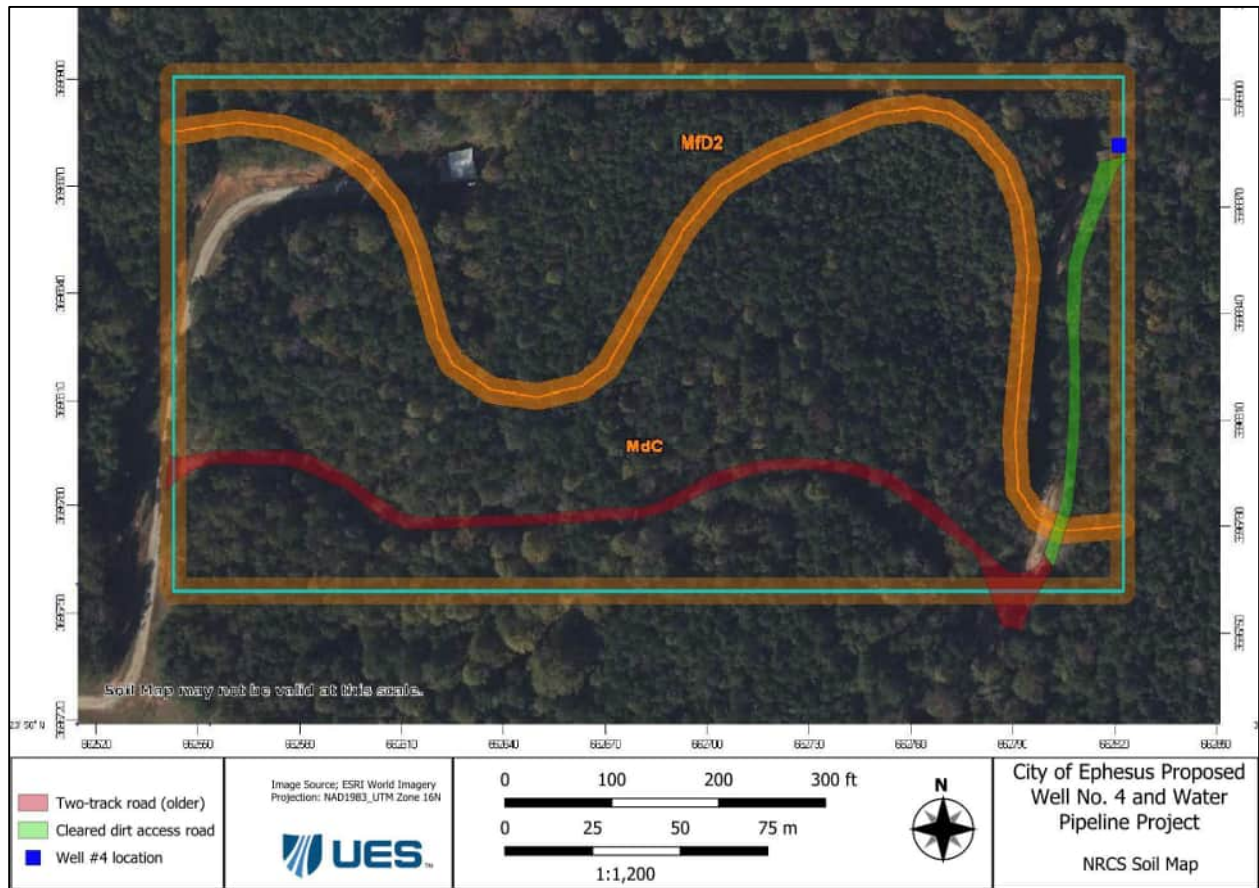


Figure 5. USDA Websoil Survey Map for the Project Area.

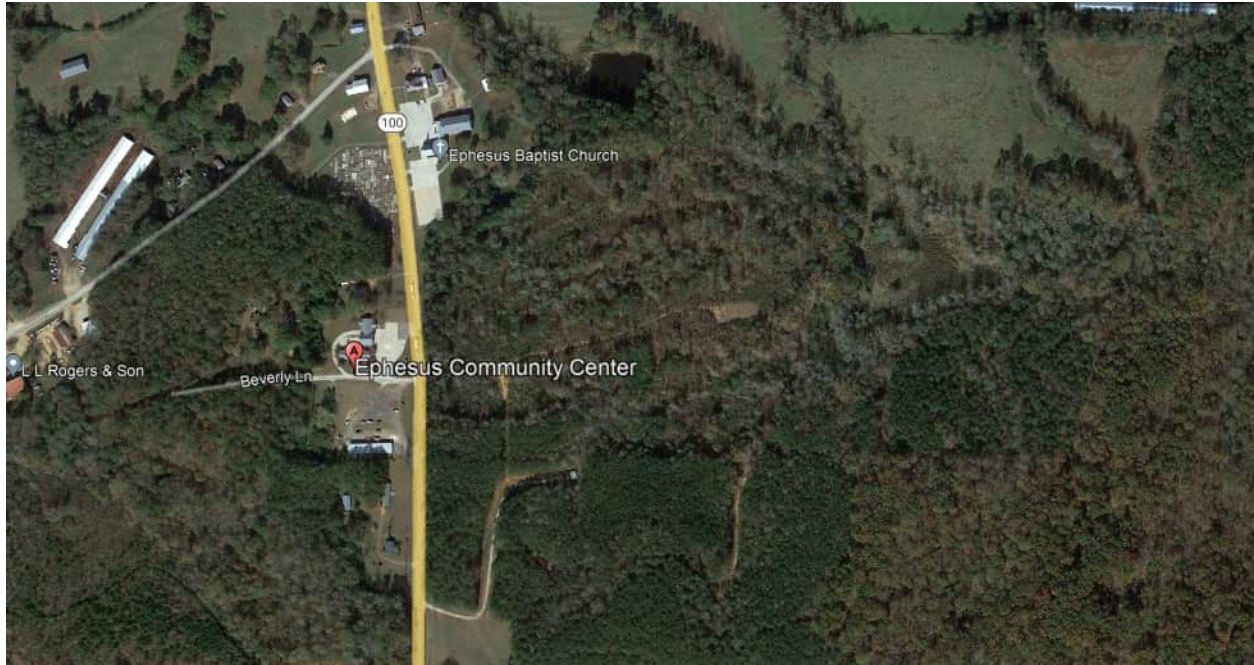


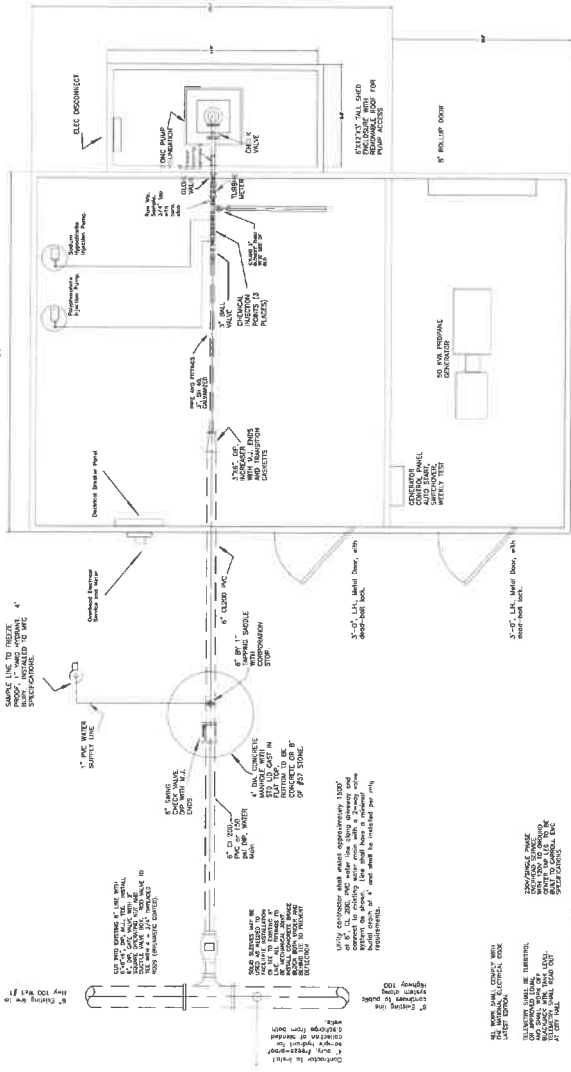
Figure 6. Map of Sensitive Noise Receptors



APPENDIX A

PRELIMINARY ENGINEERING PLANS

REVISIONS TO BE INSTALLED TO THE WELLS. ALL PIPES LESS THAN 2" DIA. SHALL BE 4" MINIMUM DIA. ALL PIPES LESS THAN 2" DIA. SHALL BE 4" MINIMUM DIA.



PRODUCTION WELL DETAILS

CITY OF EPHEBUS
WAYNE PRINCE WELL
Highway 100
EPHEBUS, GA.

SCALE: AS NOTED DATE: 06/20/03 SHEET NO. 2

T.C. CASHMAN ASSOCIATES
CONSULTING ENGINEERS

PUMP HOUSE PLAN

ELECTRICAL DETAIL

TO AIR CIRCUIT BREAKER TO COLLECT AND DISPERSE

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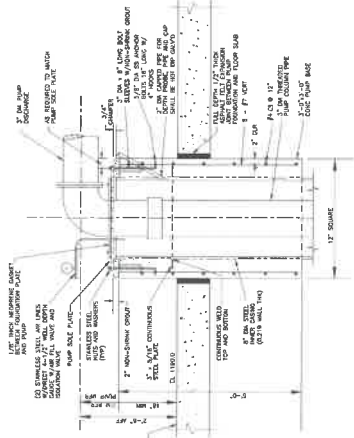
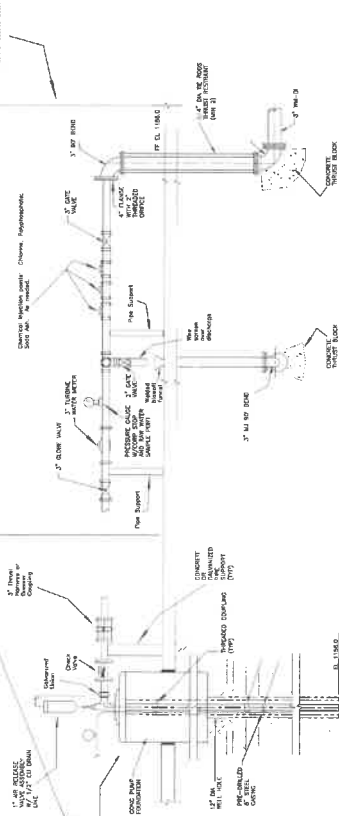
TO AIR CIRCUIT BREAKER TO COLLECT AND DISPERSE

Steel frame, metal building or metal or masonry walls.

See Note 1 for details of the manufacturer's recommendations.

A 2" diameter, 1/4" wall pipe shall be installed above the pump enclosure to provide a means of egress for the maintenance personnel. The pipe shall be installed in a vertical position, with the bottom of the pipe at least 6" above the floor.

Personnel access door



TYPICAL PUMP FOUNDATION

Wellhead to be partitioned off from the rest of the wellhouse. Wellhead enclosure to be equipped with removable top and sides for ease of pump maintenance. Enclosure is schematically shown below.

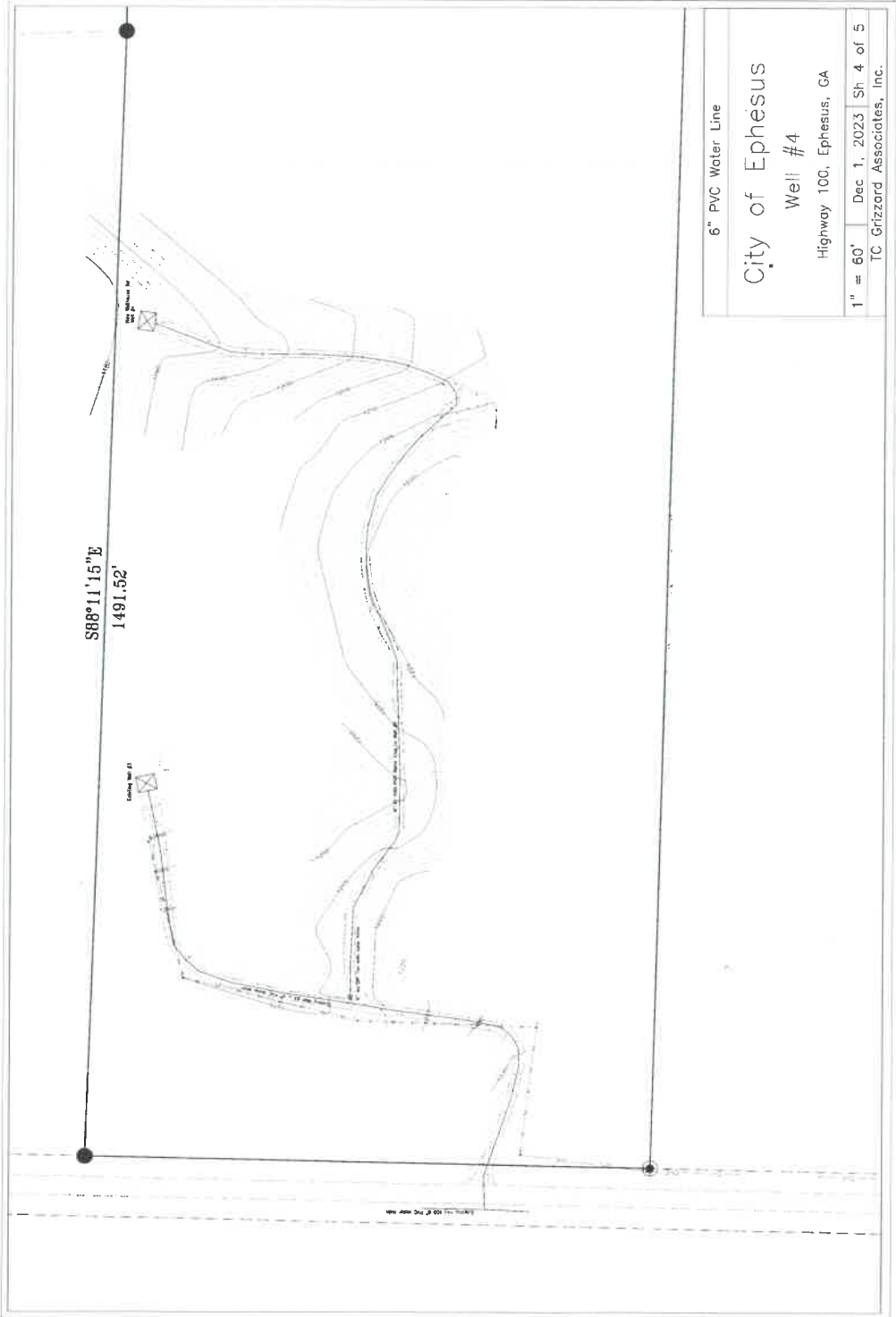
Chlorine feed to be either 150# C12 cylinders or batch mix, peristaltic feed sodium hypochlorite or calcium hypochlorite. C12 gas to be housed in a separate enclosure with a door that can be locked from the outside the door entrance. Door shall be lockable to prevent entrance by unauthorized personnel. Chlorine equipment to meet all applicable safety requirements and all requirements of Georgia EPD, EPA, and AWWA.

PRODUCTION WELL DETAILS

CITY OF EPHESUS
 POTABLE WATER WELL #4
 Highway 100
 EPHESUS, CA.

DATE: 08/10/08
 DWG: 4/1/0313
 SHEET NO. 3
 T. C. GARDNER & ASSOCIATES
 CONSULTING ENGINEERS

PRODUCTION WELL - ILLUSTRATIVE SECTION



S88°11'15" E
1491.52'

6" PVC Water Line
 City of Ephesus
 Well #4
 Highway 100, Ephesus, GA
 1" = 60' Dec 1, 2023 Sh 4 of 5
 TC Grizzard Associates, Inc.



APPENDIX B

**NEGATIVE FINDINGS PHASE I ARCHAEOLOGICAL SURVEY REPORT
FOR THE CITY OF EPHEBUS WATER PIPELINE PROJECT,
HEARD COUNTY, GEORGIA**

A NEGATIVE FINDINGS PHASE 1 ARCHAEOLOGICAL SURVEY REPORT FOR THE CITY OF EPHEBUS PROPOSED WELL NO. 4 AND WATER PIPELINE PROJECT, HEARD COUNTY, GA

March 1, 2024



Prepared for:

The City of Ephesus
24500 Ga. Hwy. 100
Roopville, GA 30170

Prepared by:

John Gorczyk, Ph.D., R.P.A.
Senior Archaeologist

Las Vegas, NV 89118 Contents

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Executive Summary

UES is preparing an Environmental Information Document (EID) for the City of Ephesus, GA to document the potential environmental effects from construction of a new supply well, Well No. 4, and the installation of a 6-inch diameter water line from a new municipal water supply well to the existing water distribution system. The proposed water line route would follow an existing road and driveway on city property. The EID will be submitted to the Georgia Environmental Protection Division (EPD) to facilitate their State Environmental Review Process (SERP) pursuant to Official Code of Georgia Annotated (OCGA) 12-16-1. The EID must include an evaluation of potential effects to historical and archaeological resources and include a request for comment from the Georgia Historic Properties Division (HPD). The purpose of this Historic and Archaeological Survey report is to provide information to the HPD to facilitate their review of this project.

On December 12, 2023, UES Senior Archaeologist John Gorczyk, Ph.D., R.P.A., conducted background research for the project area using the Georgia Natural, Archaeological, Historical Resource GIS (GNAHRGIS) database, historic topographic maps and aerial photographs, and historic satellite imagery. The area of the direct APE and a 0.25-mile buffer radius was searched to identify any previously recorded archaeological sites and inventories. On December 14, 2023, Dr. Gorczyk carried out a Phase I archaeological survey for the project area, which involved an intensive pedestrian survey augmented with subsurface testing.

Based on the results of the Phase 1 archaeological survey, it is the professional opinion of UES that the proposed undertaking will have no effect on historic properties. No previously recorded or newly discovered archaeological resources are present within the direct APE. Only one unevaluated standing structure is located within 0.25 miles of the proposed line, but the undertaking will not be visible from it due to distance, intervening foliage, and the underground nature of the proposed water pipeline. Therefore, UES recommends no further archaeological work at this time.

1.0 Project Description and Location

The project proposes to construct a new city supply well (Well No. 4) along with a water pipeline from the new well to the existing city water distribution system. The project area is located approximately 0.66 miles south of the City of Ephesus, on land owned by the City of Ephesus described as tax parcel ID #0070074 according to the Heard County Assessor (Attachment A, Figure 1). The project area is located on the USGS 7.5-minute topographic quadrangle maps for Graham, AL and Roopville, GA (2021; Figure 2).

Proposed Well No. 4 would be advanced into the crystalline bedrock aquifer. The water pipeline would consist of a 6-inch diameter 1,500-foot long pipeline between Well No. 4 and the City of Ephesus water distribution system. The proposed pipeline would be installed beneath existing access roads located off of Highway 100 that extends eastward, then north to Well No. 4. A wellhouse approximately 20 X 20 feet in size would be constructed around the wellhead to house a back-up generator, chlorine containers and mix tanks, and polyphosphate and sodium hypochlorite injection pumps for water treatment (Figure 3).

The APE is defined as the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, should any such properties exist (36 CFR 800 Section 16). The APE for the project includes both the area of direct impacts associated with the undertaking as well as the project's viewshed.

The direct APE encompasses the footprint of all proposed ground disturbing activities associated with the project. For this project, the direct APE is limited to the area of the proposed Well No.4 and the underground pipeline that will connect it to the existing water distribution system. The direct APE consists of an access road cleared several years ago leading to the proposed well and a two-track road that connects to a gravel drive off of Highway 100 (Figure 3). In an interview conducted on site on December 12, 2023, the City Engineer of Ephesus, Mr. Timothy Grizzard, noted that the underground water connection will be placed approximately 4 feet below the surface. Therefore, the project's vertical APE is 4 feet below ground surface. Other than the above ground structure associated with the new well, there will be no above ground vertical APE.

The indirect APE refers to the area of indirect effects that are anticipated after construction and during operation. For this undertaking, the indirect effects are primarily visual. As noted in the previous paragraph, there will be no appreciable above ground component to this undertaking, outside of the above-ground structures associated with the well. Therefore, UES selected a 0.25-mile visual APE to account for visual effects due to the undertaking. However, distance and intervening foliage have the potential to diminish or negate visual effects.

On December 14, 2023, John Gorczyk, Ph.D., R.P.A., a Senior Archaeologist at UES, conducted a Phase I archaeological survey for the project area. An intensive pedestrian survey augmented with subsurface testing was carried out.

2.0 Environmental Setting

The project area is located southeast of the City of Ephesus in Heard County, GA. Access to the project area is via a gravel road approximately 0.66 miles south of Ephesus off of Highway 100. A bladed access road that was cut several years ago connects the proposed new well location with this gravel drive via an older two track road. The nearest perennial water source is Denny Creek, located approximately 0.75 miles southeast of the project area, although residential ponds are also located near the project area.

The project area lies within EPA Ecoregion 45a, the Southern Inner Piedmont. This region is characterized by a series of hilly uplands comprised of schist, gneiss, and granite bedrock. The region is mostly covered with oak-pine and oak-hickory forests, with open areas due to agriculture and/or development (Griffith et al, 2001).

A search of the USGS WebSoil Survey indicates that the project area is comprised of Madison series gravelly sandy and sandy clay loams (labeled as MdC and MfD2, respectively in Figure 4). These well-drained soils are located in areas with slopes of between 6 and 15%. For both series, an A horizon (typically a plow zone layer, or Ap) overlies a sterile subsoil horizon (Bt) that is characterized by redder soils with a noticeably higher clay content. The Madison series may be eroded in some locales (USDA, 2023).

The current land use in the project area is mostly undeveloped - the only noticeable development is that associated with the proposed undertaking. Within the vicinity of the project area, land use is characterized by agricultural fields and rural residential development, as well as some commercial development associated with the southernmost portion of the City of Ephesus.

3.0 Previous Archaeological Investigations

On December 12, 2023, UES Senior Archaeologist John Gorczyk conducted background research for the project area using the Georgia Natural, Archaeological, Historical Resource GIS (GNAHRGIS) database, historic topographic maps and aerial photographs, and historic satellite imagery. The area of the direct APE and a 0.25-mile buffer radius was searched to identify any previously recorded archaeological sites and inventories. The database was also searched for any standing structures that were listed or eligible for listing on either the Georgia or National Registers of Historic Places. The GNAHRGIS search demonstrated that the project area has not been subjected to archaeological survey in the past. No prior inventories were recorded within 0.25 miles of the project area. No archaeological resources were located within the project's APE. Only one standing structure, a one-story single-family residence along Highway 100, was identified, although its eligibility is undetermined (Resource ID 37390; Figure 5).

A review of historic topographic maps at various scales between 1899 and the present shows little development in the project area. As early as 1899, a topographic map (scale 1:125000) for Wedowee, AL shows a road directly to the south of the proposed well location that could be the two-track road that connects to the cleared access for the proposed well, although it is unmarked, and by 1967, no longer appears on the 7.5-minute quadrangle map (scale 1:24000) for Roopville, GA. The topographic maps show residential development south of Ephesus as early as 1902, with the surrounding land used for agricultural purposes or left undeveloped. A 1978 aerial photograph for Graham, AL, does not show the direct APE for the project but does show the access to Highway 100 and demonstrates that residential and agricultural development of the site vicinity has essentially reached its present-day extent (USGS, 2023). Satellite imagery obtained from Google Earth (Google Earth, 2023) from 1999 to the present, shows a similar picture. It also shows the older well and access road connecting to Highway 100 under construction by 2012 and completed by 2015.

4.0 Field Methods



On December 14, 2023, UES Senior Archaeologist John Gorczyk visited the project area and carried out a Phase I archaeological survey. All fieldwork followed the 2019 *Georgia Standards and Guidelines for Archaeological Investigations* set forth by the Georgia Council of Professional Archaeologists. The project area is classified as low probability: it has slopes ranging from 4-10% and does not lie within areas of high probability for Archaic, Woodland, or Mississippian remains according to the predictive model layers of GNAHRGIS. Therefore, a combination of intensive pedestrian survey and subjective shovel testing was considered appropriate to evaluate potential impacts of the undertaking on cultural resources.


As outlined above, the direct APE encompasses the footprint of all ground disturbing activities. It consists of the proposed new well location, a cleared access road measuring roughly 120 x 10 meters, and an existing two-track road that connects to the gravel access road for the older well and ultimately connects to Highway 100 (Figure 3). The alignment of the proposed waterline will follow these access roads. Upon visual inspection, the two-track road has been in place for a long time and was formally bladed to create a ditch and berm. It appears to be 100% disturbed (see Appendix B, Photos). No shovel tests were placed in this access road. The newly cleared access road, which connects directly to the proposed well, has been lightly graded. In an on-site interview with Mr. Timothy Grizzard, the City Engineer for Ephesus, it was indicated that the clearing was made several years ago with a bulldozer pushing trees out of the way and that soil was not removed during the process. Thus, this cleared area appeared less disturbed and subsurface testing was required to investigate the existence and degree of any disturbance as a result of the grading and the presence of cultural materials.


Four shovel test pits (STPs) were placed in this cleared area between the location of the proposed well and the two-track road (Figure 6). The STPs were placed at 30-meter intervals in a single line. They measured 30 centimeters (cm) in diameter and were dug in arbitrary 10-cm levels following natural stratigraphy. The soil from each test was screened through ¼ inch (6 mm) mesh. The Madison series soils have a sterile B horizon beginning at around 5 inches (12.7 cm) below ground surface (bgs). Thus, each STP was dug at least 20 cm into this sterile subsoil horizon and the soils were screened to ensure there were no cultural materials.

Clearly the blading process has caused some slight disturbance in the cleared access area, as all but one STP showed signs of drastic soil mottling, dark inclusions, and large flat, angular rocks within the first 10 cm. Only STP 1 showed an undisturbed soil profile. Regardless, the Ap horizon was encountered in every test pit except STP 3, although it was truncated in some cases. The B horizon was encountered between 14 and 22 cm bgs. The Ap was characterized by a reddish-brown sandy loam with moderate amounts of pea-sized gravels and occasional root activity. The Bt, by contrast, was much redder and had a noticeably higher clay content. Each test pit was recorded on standard UES STP forms, photographed (see Attachment B), and mapped using an Iphone SE paired with a Bad Elf GNSS Surveyor. The surveyor feeds sub-meter accuracy location data to any paired device, dramatically increasing the accuracy of data collection using iOS apps. No cultural materials were recovered from any of the four units (Table 1).

Table 1. Shovel Test Pit (STP) Locations and Descriptions.

STP #	Level/Depth	Description	Cultural Materials?	Coordinates (UTM Zone 16S)	Notes	Photo
1	I (0-22 cm) Ap	7.5 YR 4/4 sandy loam Moderate amount of pea-sized gravels, some root activity near the top.	No	662810.56E, 3696881.34N		
	II (22-44 cm) Bt	5YR 5/6 sandy clay loam Noticeably higher clay content	No			
2	I (0-4 cm) Disturbed	10YR 3/3 with medium flat rocks, very gritty sandy loam	No	662801.67E, 3696848.57N	Appears to be some soil overburden at the top of this test, likely due to the clearing process.	
	II (4-17) Disturbed	7.5YR4/4 mottled with 10YR3/3 sandy loam	No		Appears to be a portion of the A horizon slightly mixed with the disturbed layer above it.	

STP #	Level/Depth	Description	Cultural Materials?	Coordinates (UTM Zone 16S)	Notes	Photo
	III (17-26) truncated Ap	7.5 YR 4/4 sandy loam Moderate amount of pea-sized gravels	No			
	IV 26-46) Bt	5YR 5/6 sandy clay loam Noticeably higher clay content	No			
3	I (0-25 cm)- Disturbed	10YR 3/3 with medium flat rocks, very gritty sandy loam, mottled with reddish brown soil, likely from A	No	662801.20E, 3696815.33N	Test was placed in a low area of the access road to avoid the overburden observed in STP 2. No A horizon was encountered in this test. The disturbance was directly on top of the B horizon.	
	II (25-46) Bt	5YR 5/6 sandy clay loam Noticeably higher clay content	No			

STP #	Level/Depth	Description	Cultural Materials?	Coordinates (UTM Zone 16S)	Notes	Photo
4	I (0-14) Disturbed	5YR 5/5 mottled with 7.5YR 5/4 Disturbed horizon. Contains slight amounts of blackish soil and large rocks.	No	662799.80E, 3696783.49N		
	II (14-32) Bt	7.5 YR 4/4 sandy clay loam Moderate amount of pea-sized gravels	No	0662789E, 3696795N	The disturbance observed in the first horizon has completely removed the Ap. Unlike other STPs, the B horizon was encountered directly beneath the disturbed horizon.	

5.0 Summary and Recommendations

Based on the results of the Phase 1 archaeological survey, which included a background records review and a combination of pedestrian survey and subsurface testing, it is the professional opinion of UES that the proposed undertaking will have no effect on historic properties. No previously recorded or newly discovered archaeological resources are present within the direct APE. Only one unevaluated standing structure is located within 0.25 miles of the proposed line, but the undertaking will not be visible from it due to distance, intervening foliage, and the underground nature of proposed Well No. 4 and the water pipeline. Therefore, UES recommends no further archaeological work at this time.

6.0 References

Griffith, G.E., J.M. Omernik, Steve Lawrence, J.A. Comstock, George Martin, Art Goddard, Vickie J. Hulcher, and Trish Foster. *Ecoregions of Alabama and Georgia (Color Poster with Map, Descriptive Text, Summary, Tables, and Photographs)*. Reston, VA: U.S. Geological Survey, 2001.

United States Department of Agriculture (USDA), Natural Resources Conservation Service (USDA NRCS). "Web Soil Survey," 2023. <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>.

United States Geological Survey (USGS) Topoview. 2023. <https://ngmdb.usgs.gov/maps/topoview/viewer>.



ATTACHMENT A: FIGURES

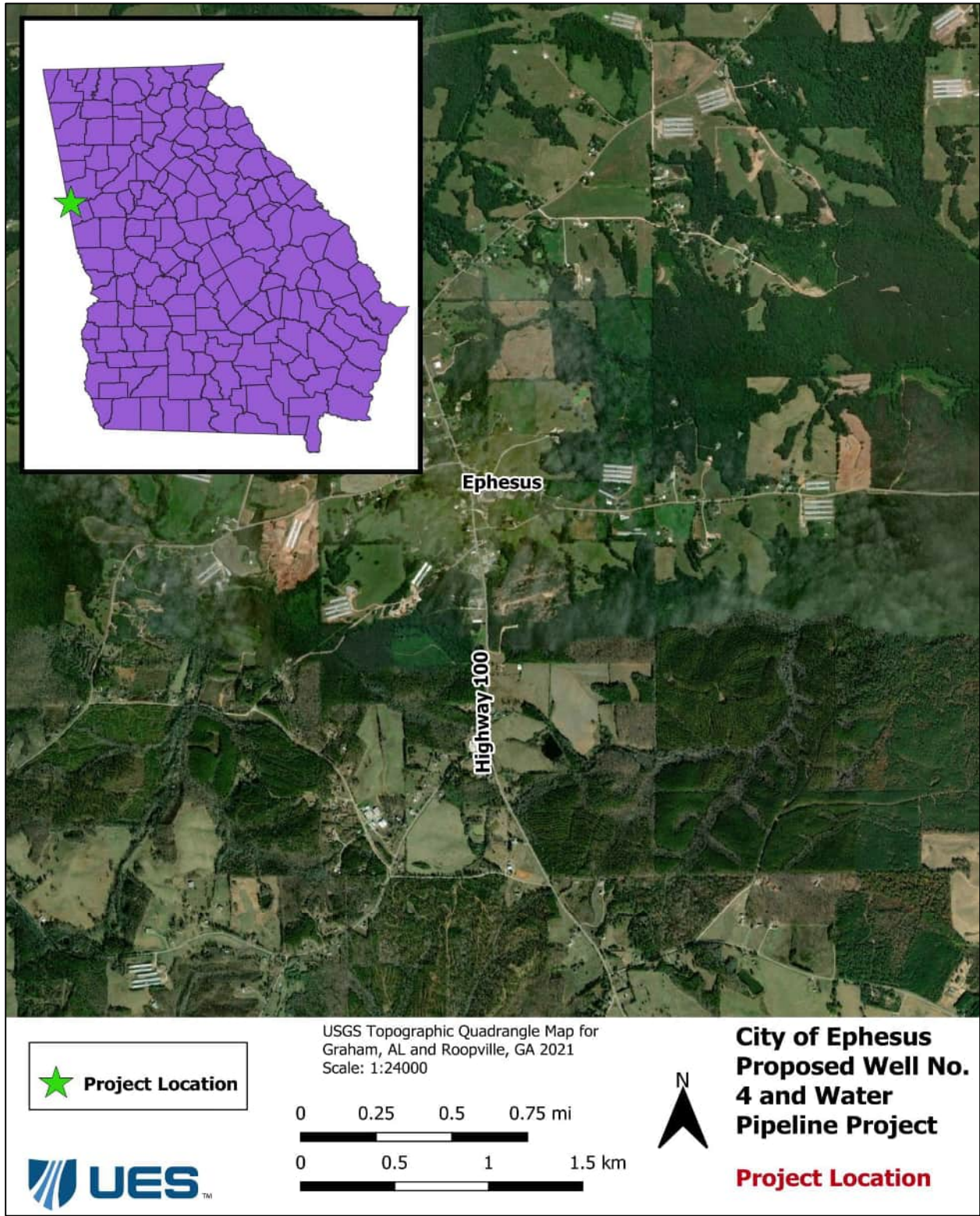


Figure 1. Project Location

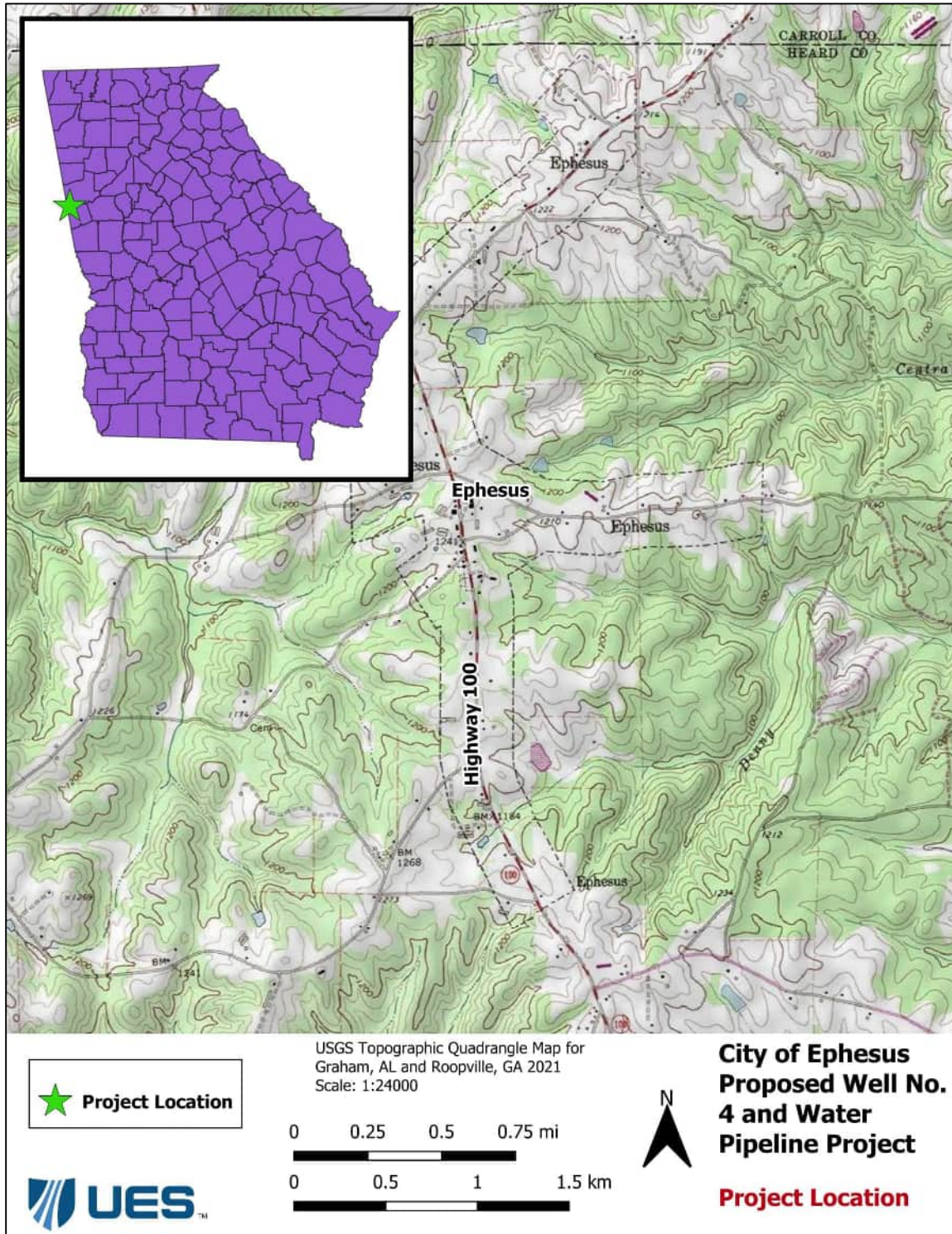


Figure 2. Project Location on the USGS 7.5-minute topographic quadrangle map for Graham, AL and Roopville, GA (2021).

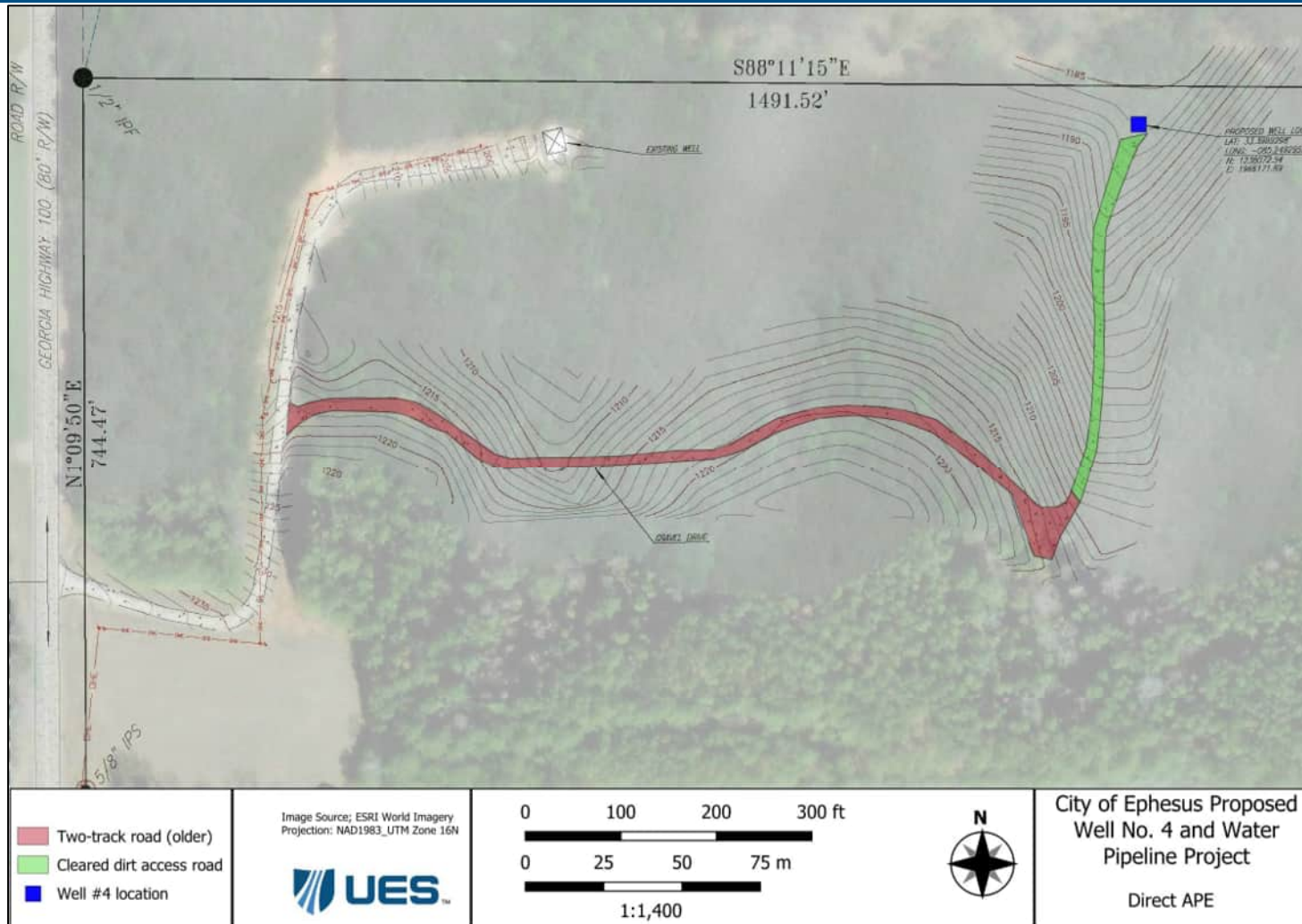


Figure 3. Project Survey Area (Direct APE) and proposed well location.

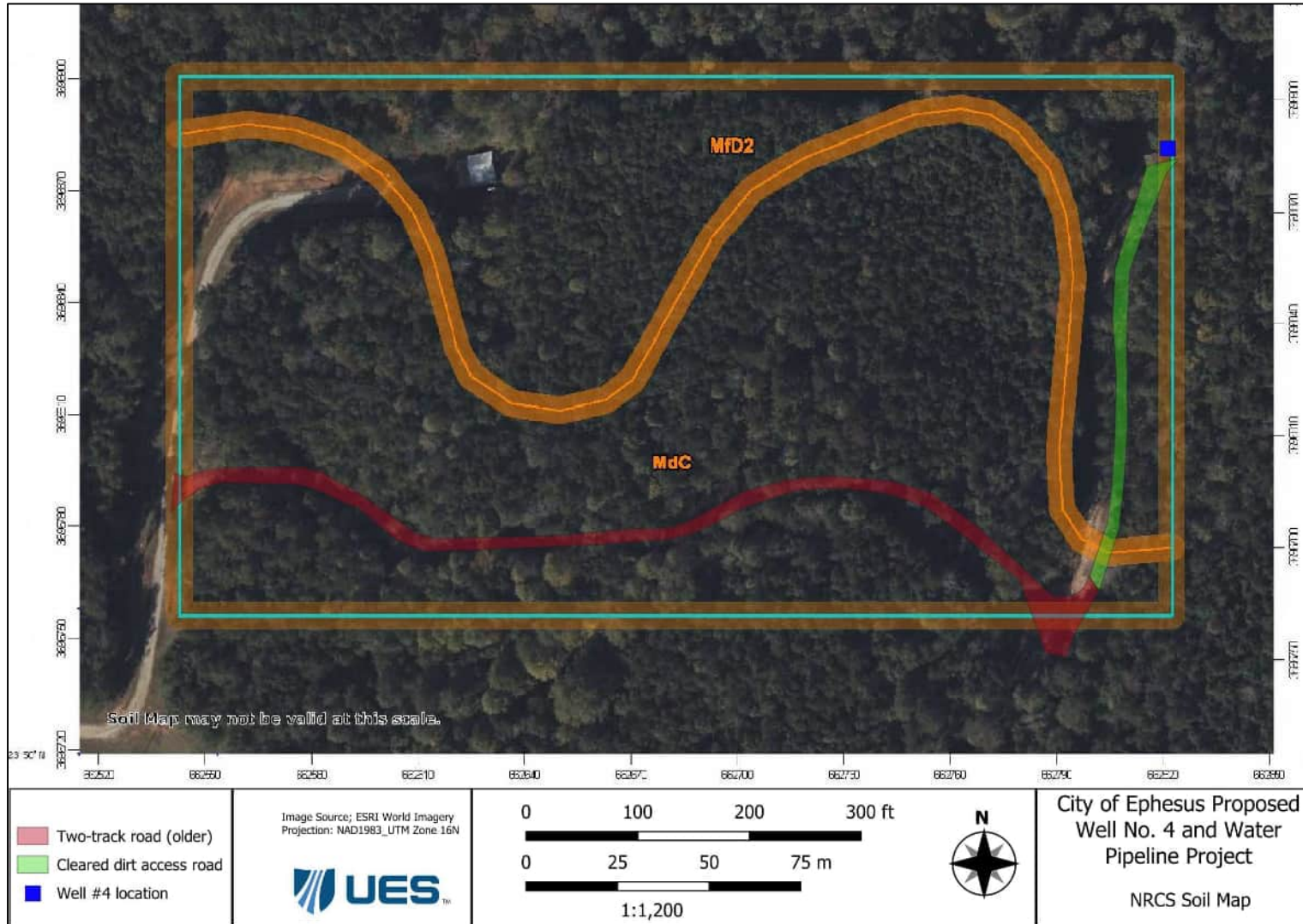


Figure 4. USDA NRCS Soil Map for the project area.

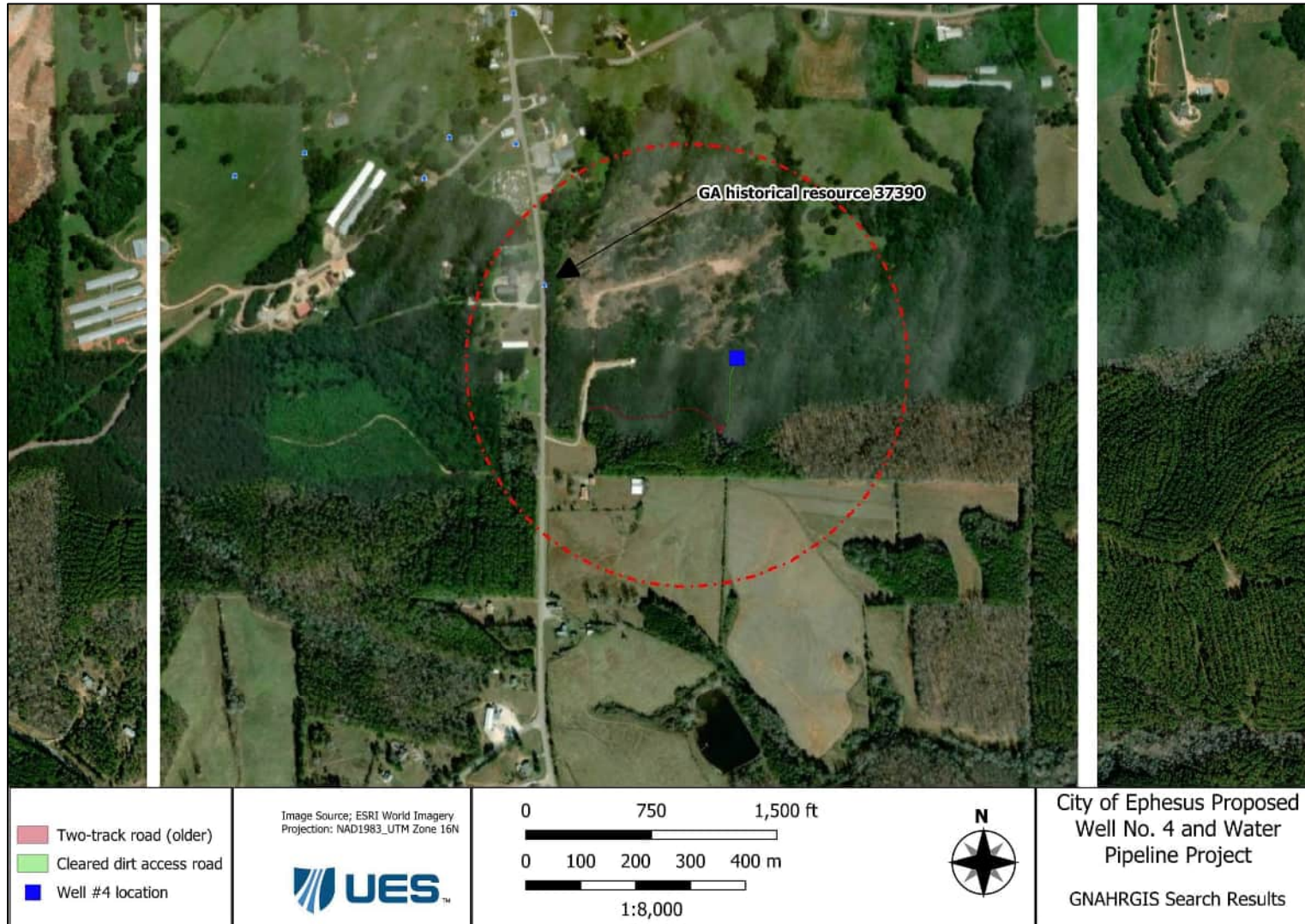


Figure 5. GNAHRGIS Search Results for the direct APE and a 0.25-mile research buffer.

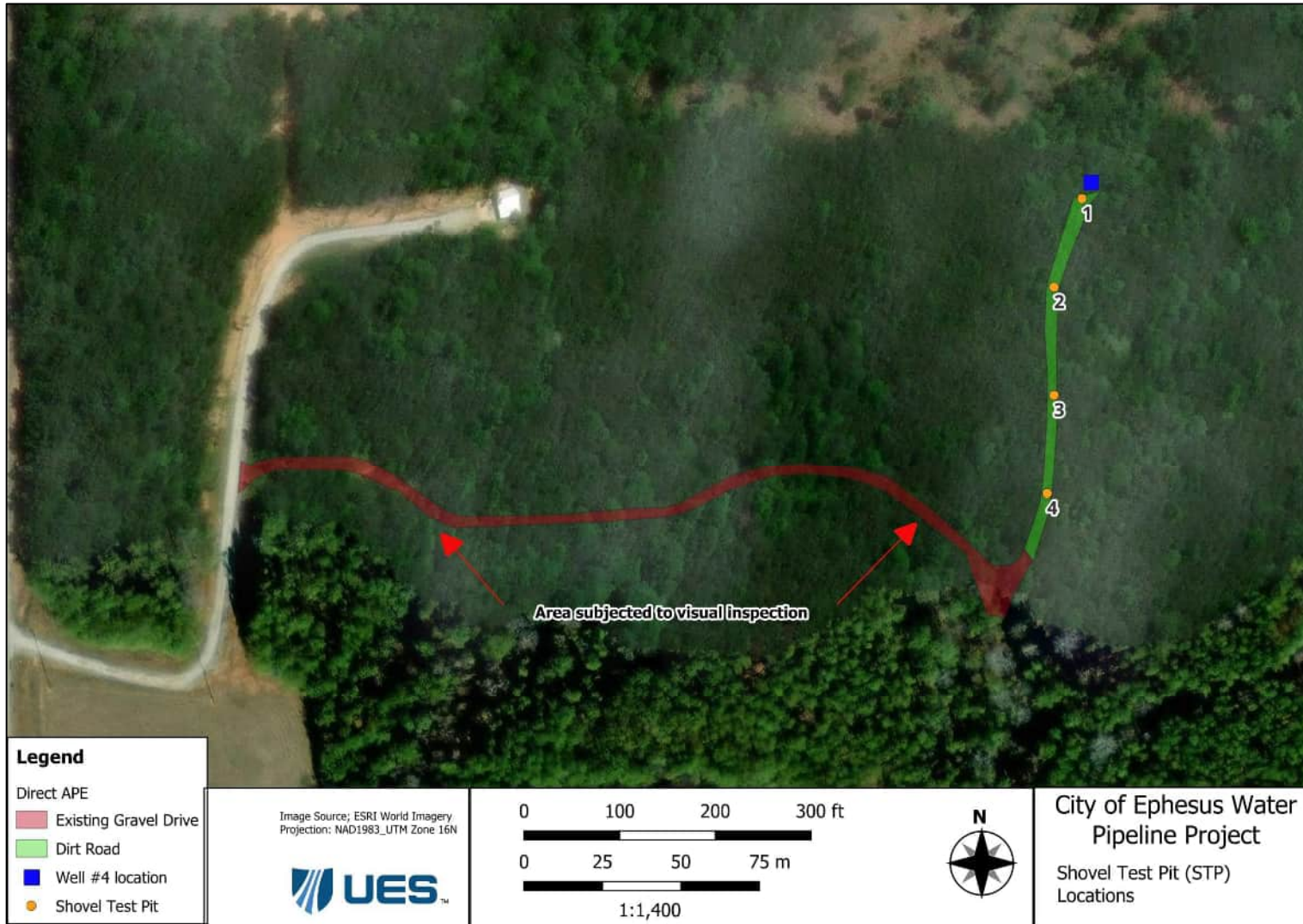


Figure 6. Methods and results of Phase 1 Archaeological Survey.



ATTACHMENT B: PHOTOGRAPHS





Photo 1: Well #4 area. Bucket is positioned on top of outer casing.



Photo 2: STP #1 Profile bearing north. UTM Zone 16N 662810.56E,
3696881.34N



Photo 3: STP # 2 profile, bearing north.



Photo 4: STP # 3 profile, bearing west.



Photo 5: STP# 4 profile, bearing south.



Photo 6. Landscape in the vicinity of STP #2, bearing west.



Photo 7: View south toward proposed well area from STP #2, demonstrating current state of cleared access area.



Photo 8: Overview of surrounding environment and cleared access area in the vicinity of STP # 3, bearing northwest.



Photo 9: View south along cleared access toward proposed well in the vicinity of STP # 3.



Photo 10: View north along cleared access area toward existing gravel drive.



Photo 11: View east along existing access (logging) road showing degree of disturbance. Area subjected to pedestrian survey only.



Photo 12: View east of existing access road in direct APE where it connects to graveled road leading to existing well.



ATTACHMENT C: PROFESSIONAL QUALIFICATIONS



APPENDIX C

**LETTER REPORT: SURVEY FOR PRESENCE OR ABSENCE OF WETLANDS AND
WATERS OF THE UNITED STATES**

Via email: Timothy Grizzard <tcgrizz@aol.com>

March 4, 2024

Mr. Tim Grizzard
TC Grizzard Associates
2967 Mount Pleasant Road
Franklin, Georgia 30217

Re: Survey for Presence or Absence of Wetlands and Waters of the United States
City of Ephesus, Georgia Water Pipeline
Ephesus, Georgia
UES Project No. J044651.01

Dear Mr. Grizzard:

In accordance with Task 5 of our Proposal No. J044651.01 dated October 20, 2023, Geotechnology, LLC, DBA UES (UES), is pleased to submit the results of a survey for the presence or absence of wetlands and streams or Waters of the United States (WOTUS) for the referenced project (Site).

BACKGROUND AND METHODOLOGY. The purpose of this survey was to assess the Site for the presence of WOTUS indicators (hydric soils, hydrophytes, hydrology) prior to proposed development. WOTUS includes wetlands, streams, ponds, lakes, and other waterbodies that may be protected under Sections 404 and 401 of the Clean Water Act. Currently, WOTUS includes traditional navigable waters (TNW), intermittent and perennial tributaries, lakes, ponds, and impoundments of jurisdictional waters, and adjacent wetlands. The United States Army Corps of Engineers (USACE) (*Federal Register 1982*) and the United States Environmental Protection Agency (EPA) (*Federal Register 1980*) jointly define “wetlands” as: *those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.*

UES performed this survey according to the methods described in the USACE *Wetlands Delineation Manual* (1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region (Version 2.0)*. Wetland conditions are determined by the presence of three criteria: 1) a predominance of hydrophytic (water-loving) vegetation, 2) hydric soils, and 3) wetland hydrology. A hydric soil is a soil that formed under conditions of saturation, flooding or ponding long enough during the growing season to develop anaerobic conditions in the upper part. Documents are obtained and reviewed relative to these three criteria and are field verified by cataloguing plant types in suspected WOTUS locations, by collecting soil samples at multiple locations in representative areas, and by observing indicators

of wetland hydrology. Assessment points and interpreted jurisdictional limits determined in the field were located using a Global Positioning System (GPS).

Jurisdictional streams are determined by visual assessment and characterization of stream channel features, as well as by a study of the geomorphology and hydrology of the Site. Of primary importance is the presence of an ordinary high-water mark (OHWM) and bed and bank features which result from the scouring forces of flowing water along channel banks. Upon observation of an OHWM, physical attributes of the stream are surveyed and estimated to determine the extent and frequency of stream flow. Ephemeral channels flow for short durations after rain events and are typically void of pools after several days following a rain event. Intermittent streams flow for seasonal durations, are influenced by groundwater, and often contain pools that provide habitat for macroinvertebrates adapted to aquatic habitats. Perennial streams flow continuously and are often associated with a groundwater source and are also dependent upon upstream ephemeral and intermittent stream flow.

The recent *Sackett v. USEPA* case before the Supreme Court of the U.S. changed the way that jurisdiction is determined. All ephemeral streams and some intermittent streams are no longer jurisdictional. Wetlands are now jurisdictional only if they have a “continuous surface water connection” to a jurisdictional stream.

DOCUMENT REVIEW. UES queried databases, imagery, and maps to provide a desktop review of the Site. A summary of the document review is presented below.

USGS Topographic, National Hydrography Data (NHD), and National Wetland Inventory (NWI) Map. UES reviewed the 7.5-minute United States Geological Survey (USGS) Topographic Map adapted from the Roopville Georgia quadrangle (1982) for land features that may indicate the presence of WOTUS (Figure 2, Attachments). The map indicates moderately hilly topography with no evidence of streams, wetlands, or ponds. Site elevations vary between approximately 1,210 and 1,200 feet above mean sea level (AMSL). NWI and NHD data did not indicate the presence of wetlands and streams. The Site is located in the HUC8 Middle Chattahoochee-Lake Harding watershed (03130002).

FEMA National Flood Hazard Layer (NFHL). UES reviewed the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FEMA, 2009; Community Panel 2900960231E). This map indicates that no portion of the Site lies within the 100 Year (1.0%) floodplain (Figure 3).

NRCS Soil Survey. The Web Soil Survey, prepared by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), was reviewed for information concerning hydric soils on the Site (Figure 6). Hydric soils, as defined by the National Technical Committee for Hydric Soils, are “soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions.” Two soil types are mapped within the Site: the Madison gravelly sandy loam, 6 to 10 percent slopes (MdC) and the Madison gravelly sandy clay loam, 10 to 15 percent slopes (MfD2). Neither soil is considered hydric by the NRCS.

FIELD CONDITION SUMMARY. UES conducted field investigations at the Site on December 20, 2023. According to the National Oceanic and Atmospheric Association, approximately 6.21 inches of precipitation was recorded at the nearby Senoia Georgia weather station (US1GACW0008) in the 10 days previous to the Site visit. The majority of this rainfall (4.78 inches) fell on December 12, 2023.

Vegetation Communities. Vegetation communities in the described access road was maintained through mowing and were composed of various grasses (*Poa* sp.) and other volunteer herbaceous plants. No wetland plants were observed. The surrounding forest included an overstory of loblolly pine (*Pinus taeda*), white oak (*Quercus alba*), southern red oak (*Q. falcata*), Shumard oak (*Quercus shumardii*), and American beech (*Fagus grandifolia*). The understory was composed of Chinese privet (*Ligustrum sinense*), sweetgum (*Liquidamber styraciflua*), Christmas fern (*Polystichum acrostichoides*) blackberry (*Rubus* sp.) and goldenrod (*Solidago*, sp.).

WOTUS Features Documented. The Site was examined for low lying areas, stream channels, and other features that could collect or transport water. Several areas were noted were water drained across the road through a swale. None of these drainage swales contained an ordinary high-water mark (OHWM) which would indicate the presence of stream. No other low-lying areas were noted and no wetlands or streams were documented.

CONCLUSIONS. UES conducted a WOTUS delineation/determination for a proposed water pipeline project near the city of Ephesus in Heard County, Georgia. Background data which included topographic maps, hydrography maps, and wetland maps did not indicate the presence of wetlands and streams and a site visit on December 20 did not document WOTUS. It is the professional opinion of UES that the proposed undertaking will have no direct effect on regulated wetlands, streams, or other waterbodies. The delineation provided herein is based upon our research and observations during site reconnaissance. Our findings have been prepared for the client solely for a wetland delineation of the Site.

The EPD SRF Guidance for Project Requirements, 2004, provides the following certification as an alternative to coordinating a project with the U.S. Army Corps of Engineers (USACE):

If none of the construction activities of facilities themselves is to occur in a stream, lake, or other body of water or in wetlands, the applicant can satisfy the comment requirement by submitting a certified statement by a Professional Engineer (PE) licensed in the state of Georgia, stating: "None of the construction activities or facilities themselves is to occur in a stream, lake, or other body of water or in wetlands. The project includes no stream crossings. Therefore, no US Army Corps of Engineers Permit is required."

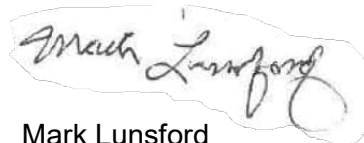
The attached page contains the above certification statement and space for your Georgia PE stamp. If you are willing to provide this certification, coordination with USACE is not required for this project.

Very truly yours,

UES



Jack Finley
Senior Wetland Scientist



Mark Lunsford
Senior NEPA Professional

JMF/MNL:jmf/jsj

T. C. Grizzard Associates, Inc.

2967 Mt. Pleasant Rd


Franklin, GA 30217

The EPD SRF Guidance for Project Requirements, 2004, Part II.E provides the following certification as an alternative to coordinating a project with the U.S. Army Corps of Engineers (USACE):

If none of the construction activities of facilities themselves is to occur in a stream, lake, or other body of water or in wetlands, the applicant can satisfy the comment requirement by submitting a certified statement by a Professional Engineer (PE) licensed in the state of Georgia, stating: "None of the construction activities or facilities themselves is to occur in a stream, lake, or other body of water or in wetlands. The project includes no stream crossings. Therefore, no US Army Corps of Engineers Permit is required."

The City's Consulting who acts as the City Engineer has reviewed the attached letter report "Survey for Presence or Absence of Wetlands and Waters of the U.S. for the City of Ephesus Proposed Well No. 4 and Water Pipeline" and provided this certification below:

None of the construction activities or facilities themselves is to occur in a stream, lake, or other body of water or in wetlands. The project includes no stream crossings. Therefore, no US Army Corps of Engineers Permit is required.



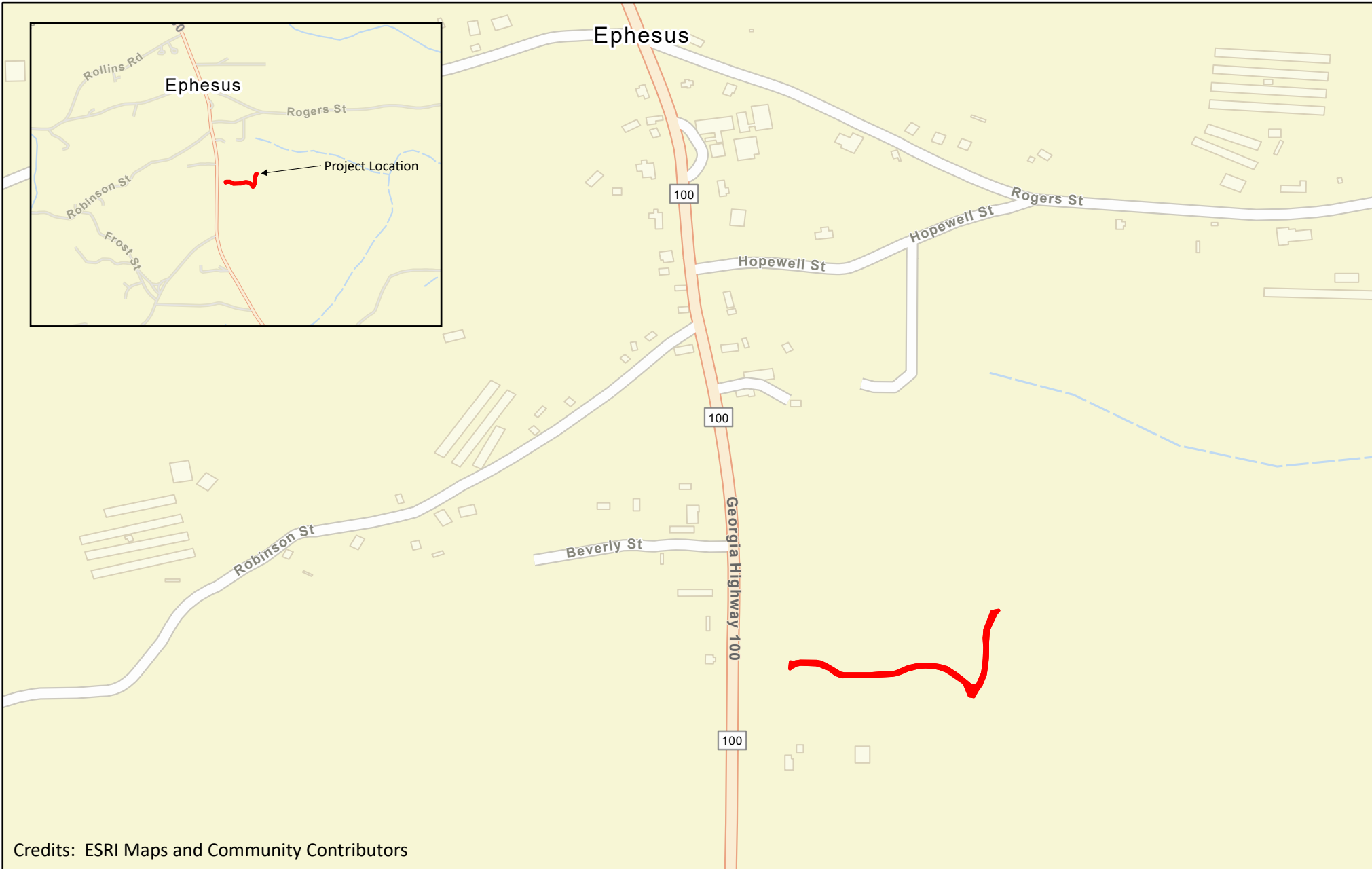
March 24, 2024

Timothy C. Grizzard, P.E.

GA License #018083



FIGURES



Credits: ESRI Maps and Community Contributors

Legend

 Site

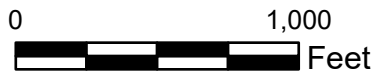


FIGURE 1. PROJECT LOCATION

CITY OF EPHEBUS, PROPOSED WELL NO. 4 AND WATER PIPELINE

EPHEBUS, GEORGIA

Project Number: J044651.01

Drawn by: JMF

Ch'd By: MNL

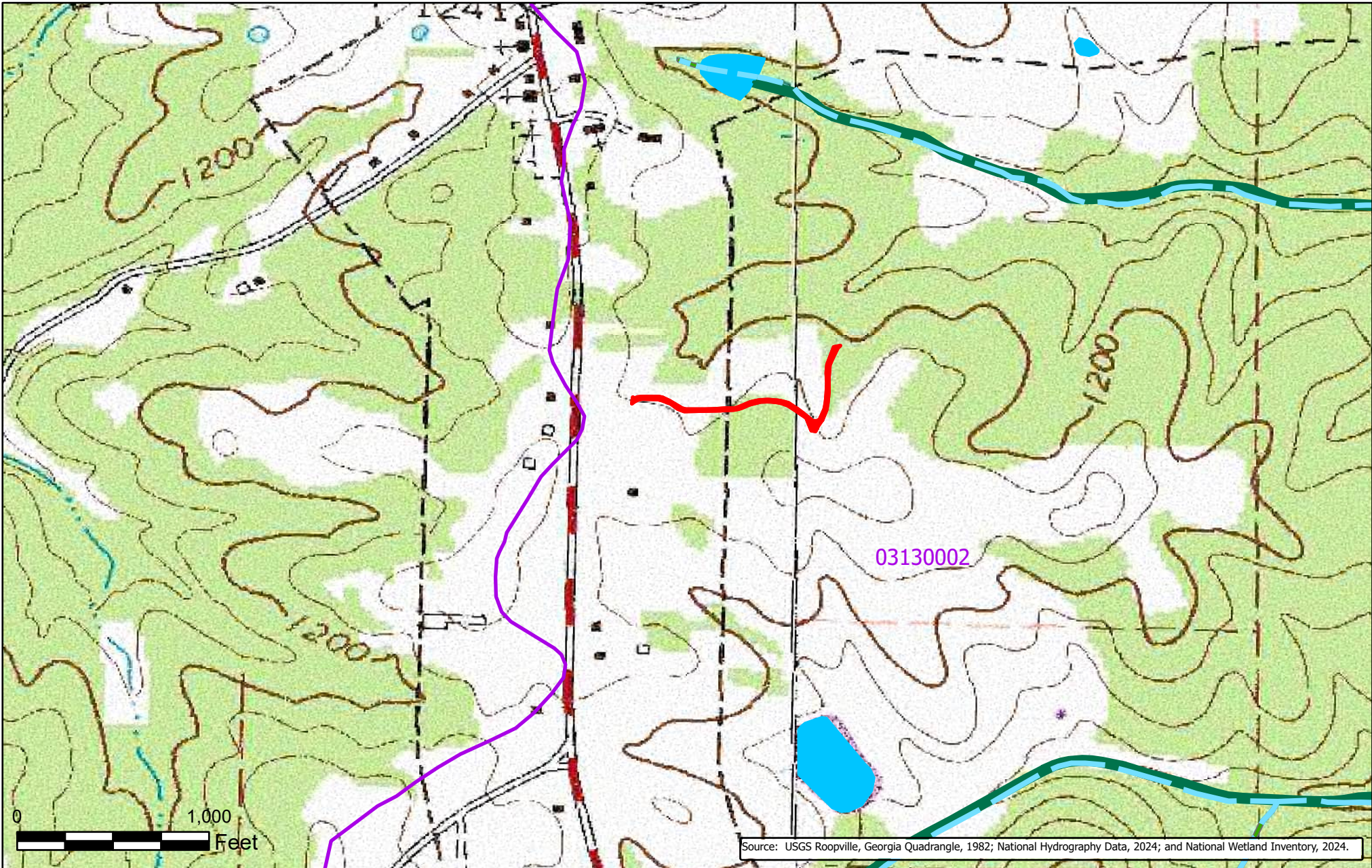
App'vd By: JMF

Date: 01/16/2024

Date: 01/19/2024

Date: 03/01/2024





Legend Site HUC8 Watershed NHD Intermittent Stream NWI Forested/Shrub Wetland NWI Pond	N 		FIGURE 2. TOPOGRAPHIC, NATIONAL WETLAND INVENTORY, AND NATIONAL HYDROGRAPHY MAP.		
	CITY OF EPHESUS, PROPOSED WELL NO. 4 AND WATER PIPELINE EPHESUS, GEORGIA		Project Number: J044651.01		
	Drawn by: JMF Date: 01/16/2024	Ch'd By: MNL Date: 01/22/2024	App'vd By: RGH Date: 03/01/2024		

Source: USGS Roopville, Georgia Quadrangle, 1982.



Legend

- █ Site
- FEMA 100 Year (1%) Floodplain

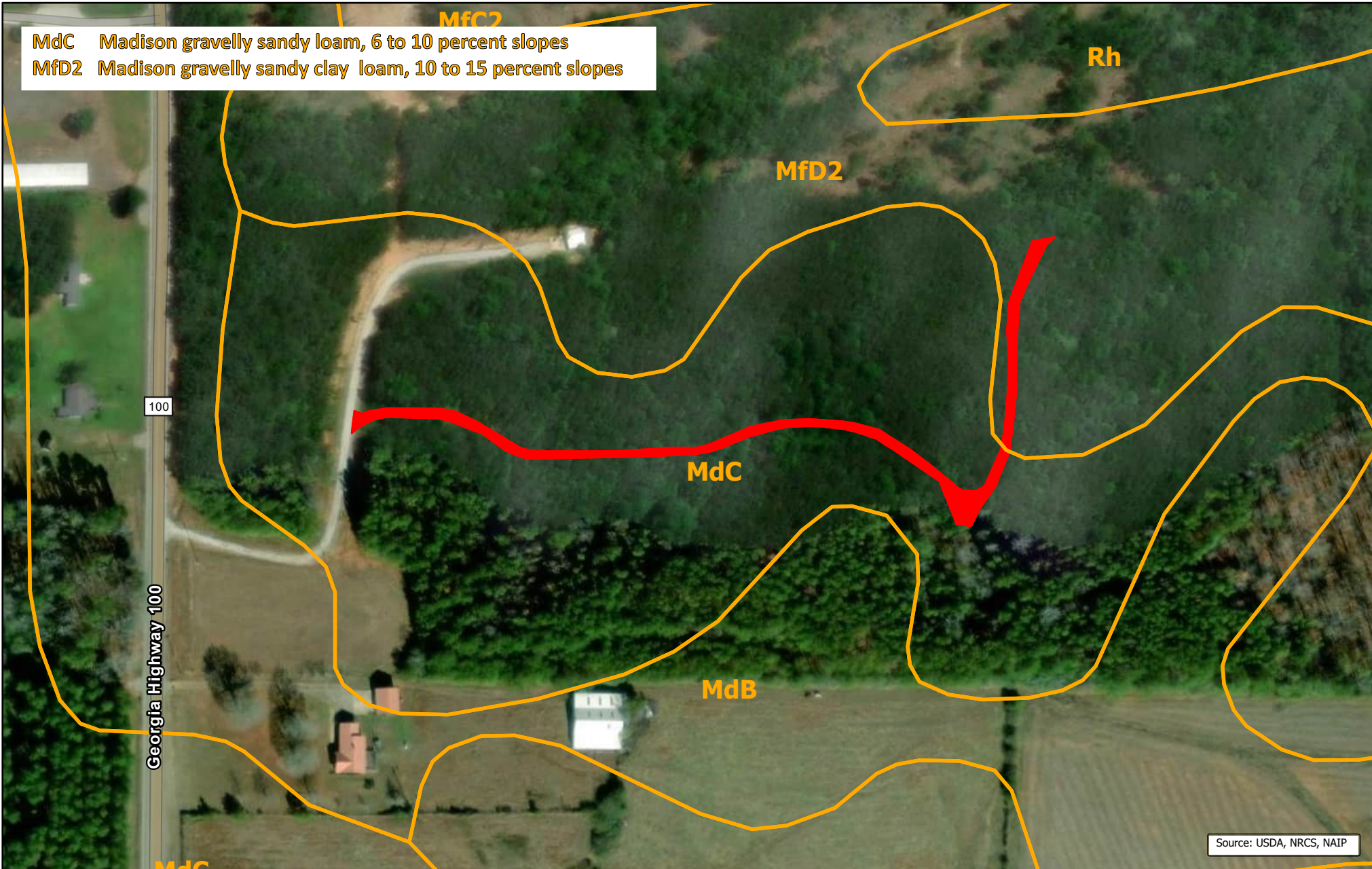
0 2,000
 Feet

N

FIGURE 3. FEMA NATIONAL FLOOD HAZARD LAYER		
CITY OF EPHEBUS, PROPOSED WELL NO.4 AND WATER PIPELINE EPHEBUS, GEORGIA		
Project Number: J044651.01		
Drawn by: JMF	Ch'd By: MNL	App'vd By: JMF
Date: 01/16/2024	Date: 01/22/2024	Date: 3/1/2024



MdC Madison gravelly sandy loam, 6 to 10 percent slopes
MfD2 Madison gravelly sandy clay loam, 10 to 15 percent slopes



Source: USDA, NRCS, NAIP

Legend

NRCS SOILS



0 500 Feet

FIGURE 4. NRCS SOILS

CITY OF EPHEBUS, PROPOSED WELL NO. 4 AND WATER PIPELINE
 EPHEBUS, GEORGIA



Project Number: J044651.01

Drawn by: JMF	Ch'd By: MNL	App'vd By: RGH
Date: 01/16/2024	Date: 01/22/2024	Date: 03/01/2024



Source: NAIP

Legend

- █ Site
- Photo Points

0 300

Feet

N

FIGURE 5. PHOTO POINT LOCATIONS.

CITY OF EPHEBUS, PROPOSED WELL NO. 4 AND WATER PIPELINE
EPHEBUS, GEORGIA

Project Number: J044651.01

Drawn by: JMF	Ch'd By: MNL	App'vd By: JMF
Date: 01/16/2024	Date: 01/22/2024	Date: 03/01/2024



SITE PHOTOGRAPHS

Project Name:
Proposed Well No. 4 and Water
Pipeline

Site Location:
Ephesus, Georgia

Project Number
J044651.01



Photo Point #1. View looking south at the location of the well #4



Photo Point #2. View looking north.



Photo Point #2. View looking west.



Photo Point #3. View looking east.

Project Name:
Proposed Well No. 4 and Water
Pipeline

Site Location:
Ephesus, Georgia

Project Number
J044651.01



Photo Point #3. View looking west.



Photo Point #4. View looking east.



Photo Point #4. View looking west.



Photo Point #5. At the intersection with the road for the existing well. View looking north.

Project Name:
Proposed Well No. 4 and Water Pipeline

Site Location:
Ephesus, Georgia

Project Number
J044651.01



Photo Point #5. At the intersection with the road for the existing well. View looking east of the access road for the proposed well.



Photo Point #5. At the intersection with the road for the existing well. View looking south.



Location south of the intersection of the main well road (improved with gravel) and the access road for the proposed new well (#4).



View of the main well road where it intersects with Highway 100, looking west.



APPENDIX D

**COMMENT REQUEST LETTER FOR THE U.S. FISH & WILDLIFE SERVICE
GEORGIA ECOLOGICAL SERVICES FIELD OFFICE**

March 4, 2024

Mark Lunsford
UES
5055 Antioch Road
Overland Park, Kansas 66204

On Behalf of
Tim Grizzard
City of Ephesus
24500 Highway 100
Ephesus, GA 30217

Peter D. Maholland
Field Supervisor
Georgia Ecological Services Field Office
U.S. Fish and Wildlife Service
RG Stephens, Jr. Federal Building
355 East Hancock Avenue
Athens, GA 30601

Dear Mr. Maholland:

The City of Ephesus is required to submit an Environmental Information Document (EID) to the Georgia Environmental Protection Division (EPD) for projects that are to be funded under the federal Drinking Water State Revolving Fund (DWSRF). As part of the review process, EPD requires that the EID undergo an interdisciplinary review process. This process involves review and consultation with the State Clearinghouse and all applicable Crosscutter Authorities and Agencies. The City of Ephesus is required to submit the EID to your agency, under the State Environmental Review Procedures (SERP) agreed to by the USEPA. Before approval of a project, EPD requires a comment letter from your agency.

Please review and comment on the attached EID within 30 days (no later than April 8th) and send your response to me at mlunsford@teamues.com. UES prepared the EID and is assisting the City of Ephesus in complying with the SERP. Your comment letter will be included as part of the EID to be submitted to EPD for review. To enable the project to move forward, please issue your comment letter even if you have no comments. If you choose, and if you have no comments, you may just check the "no comments" box below, and then either stamp this letter with your agency's stamp or sign and date it at the space provided and return this letter to the address below. Do not hesitate to contact me at 406-468-5872 if you have any questions about this request.

Specific project information is outlined below:

Project Information

Project Name: Ephesus Proposed Well No. 4 and Water Pipeline Project
Applicant: City of Ephesus, GA

County: Heard
Project Description: The proposed water supply Well No. 4 would be constructed and draw water from the crystalline bedrock aquifer. The proposed water pipeline would consist of a 6-inch diameter 1,500-foot long pipeline between new City of Ephesus Well #4 and the existing City of Ephesus water distribution system. The proposed pipeline would be installed at a four foot depth beneath existing access roads off of Highway 100 that lead eastward, then north to the new well location. A well house approximately 20 x 20 feet in size would be constructed around the wellhead to house a back-up generator, chlorine container and mix tanks, and polyphosphate and sodium injections pumps.

UES Contact Information

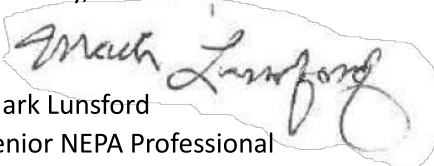
Mark Lunsford
5055 Antioch Road
Overland Park, Kansas 66204
Phone: 406-468-5872
E-mail: mlunsford@teamues.com

Applicant Contact Information

Tim Grizzard
City of Ephesus
24100 Highway 100
Ephesus, GA 30217
Phone: 706-302-1576
E-mail: tcgrizz@aol.com

Thank you for your consideration,

Sincerely,


Mark Lunsford
Senior NEPA Professional

Enclosure: EID
Cc: Drinking Water Permitting & Engineering Program, EPD

NO COMMENTS

Name of Person Representing the Agency:

Signature: PETER MAHOLLAND
Date: MAHOLLAND

Digitally signed by
PETER MAHOLLAND
Date: 2024.03.22
07:21:23 -04'00'