STAFF REPORT

APPLICATION SUMMARY:

Applicant:	Chaney Enterprises
Location:	The project would be adjacent to the County line between Sussex and Dinwiddie which is approximately 0.4 mile south from the intersection of McKenney Hwy (Route 40) and Winfield Road (Route 630).
Parcel ID:	64-A-1
Proposal:	To construct and operate a Granite Quarry

APPLICATION:

The application of Chaney Enterprises for a Conditional Use Permit (CUP) to construct and operate a Granite Quarry on Tax Map Parcel 64-A-1 consisting of 239 acres to supply high quality construction aggregate.

ELECTION DISTRICT:

Stony Creek

LOCATION:

The proposal would be located within the Rural Planning Area. The project would be adjacent to the County line between Sussex and Dinwiddie which is approximately 0.4 mile south from the intersection of McKenney Hwy (Route 40) and Winfield Road (Route 630). The property sits along Little Mill Road (Route 630) in Sussex County.

The property is surrounded on all sides by forest and farmland, and is bounded by Sappony Creek to the east, Rocky Branch Creek to the south, Little Mill Road to the west, and the Dinwiddie-Sussex county line to the north.

DESCRIPTION:

The applicant is proposing to construct and operate a Granite Quarry on 239 acres. The quarry will be operated via two (2) distinct hard-rock quarries. The proposed quarry areas total 176 acres, known as the North and South Pit.

The 36-acre North Pit currently consists of agricultural land with some forest and will contain the processing facility and a 12.03 acre pit that will be mined as Phase 1. The North Pit is proposed to yield approximately 16,000,000 tons.

The South pit will be Phase II of the operation and contains the larger proposed excavation pit with a proposed 96.72 acres. The South pit contains mostly agricultural pine stands with some mixed hardwood forest. A small agricultural field is located within the southeast extent of the South Pit. The South Pit is proposed to yield approximately 60,000,000 tons.

Both pits will included unimproved access roads, staging areas, and driveways originating from Little Mill Road.

A minimum 12' berm is proposed to be constructed around entirety of operation.

The operation proposes 300 outbound loads per day, maximum with access via Little Mill Road. Trucks will make a right out of the site and head north to continue east or west on Route 40. Little Mill Road is currently a 2-lane substandard 20' right-of-way. The applicant proposes to improve Little Mill from the primary site entrance to Route 40 to a minimum of 25' of width and install appropriate striping and speed limit signs. Route 40 is a primary route classified as a minor arterial, with a two-lane roadway and one lane in each direction. See attached Traffic Impact Analysis dated March 2024.

The hours of operation are proposed as follows:

Shipping Hours:
6:00 a.m. to 4:00 p.m. Monday thru Friday
7:00 a.m. to 3:00 p.m. on Saturdays and no shipping on Sundays
(24-hour shipping is allowed for DOT jobs, state, or local emergencies)

Plant Operation Hours:
6:00 a.m. to 6:00 p.m. Monday thru Friday
7:00 a.m. to 3:00 p.m. on Saturdays and no Plant Operations on Sundays
No blasting on weekends.
(As needed maintenance for plant or equipment will be allowed on Sundays but only if needed.)

The applicant proposes a 50' setback off all wetlands and 30' from all archeological findings from the top of the mine. All tree removal and ground clearing shall adhere to a time of year restriction (TOYR) protective of resident and migratory songbird nesting from March 15 through August 15 of any year as recommended by state oversight agencies, including the Department of Conservation and Recreation and the Department of Wildlife Resources.

All disturbed acreage will be bonded with the Virginia Department of Energy (formerly the Division Mineral Mines and Energy).

Upon completion of mining and de-mobilization of all equipment, any areas that are not associated with the open pit will be converted back into agricultural uses. The applicant also proposes to develop a post mining plan with the support of Virginia Tech Mining and Reclamation Department to ensure fields are put back to a productive tillable status.
Upon reclamation, the applicant proposes to convert the pit quarry areas to permanent ponds that will support surrounding irrigation needs of the surrounding agricultural uses.

COMPREHENSIVE LAND USE PLAN:

The parcel is located within the Rural Planning Area and is designated as Rural Preserve. The rural preserve classification includes agricultural, forested, and remote rural residential uses. This category is most similar to the Agricultural, Forested, and Open Space classification in other planning areas and considers where agricultural zoning is in effect. Agricultural production and services as well as forest and timber land are predominant and are encouraged to expand. Limited, very low density residential and institutional uses are present along rural roads and arterial rural highways.

Agricultural, forestal, recreational, and remote rural residential areas should be protected and preserved. Mining and extraction operations that locate according to the availability of natural resources should have strict limitations to avoid harmful effects on housing, farming, and conservation areas.

ORDINANCE REVIEW:

The current zoning designation for this property is General Agricultural (A-1). The A-1 district covers portions of the county now devoted predominately to farms and forests in which public utilities are not generally available or anticipated in the near future. This district is established to protect land and property values, groundwater and surface water quality and other natural resources. It is also the intent of this district to provide for the continued security of the county's agricultural sector by encouraging the orderly and responsible growth of its livestock, dairy and poultry industry. Limited residential and nonresidential development is anticipated in these areas.

Extraction of natural resources and storage of salt, sand and minerals is allowed in the A-1 zoning district with a Conditional Use Permit (CUP).

The planning commission and board of supervisors should consider the following criteria before the granting of a conditional use permit:

1. That the establishment, maintenance, and operation of the conditional use will not be detrimental to or endanger the public health, safety, and general welfare;

2. That the conditional use will not be injurious to the use and enjoyment of other property in the immediate vicinity for the purposes already permitted, nor substantially impair the use of other property within the immediate proximity;

3. That adequate utilities, water, sewer or septic system, access roads, storm drainage and/or other necessary public facilities and improvements have been or will be provided;

4. That adequate measures have been or will be taken to provide ingress and egress so designed as to minimize traffic congestion on the public streets;

5. That the proposed conditional use is not contrary to the goals and objectives of the Sussex County Comprehensive Plan;

6. That the conditional use shall, in all other respects, conform to the applicable regulations of the zoning district classification in which it is located and to the special requirements established for the specific use; and

7. That the use(s) at the location proposed will not result in a multiplicity or saturation of similar uses in the same general neighborhood of the proposed use.

In addition to the standards and other guidelines described in the Zoning Ordinance, the Board may impose conditions or limitations on any approval, including the posting of performance guarantees. Such conditions may include, but are not necessarily limited to:

1. The number of persons living or working in the immediate area and the proposed hours of operation, as may applicable;

2. Traffic conditions, including facilities for pedestrians, such as sidewalks and parking facilities; the access of vehicles to roads; peak periods of traffic; and proposed roads, but only if construction of such roads will commence within the reasonably foreseeable future;

3. The orderly growth of the neighborhood and community and the fiscal impact on the County;

4. The effect of odors, dust, gas, smoke, fumes, vibration, glare, and noise upon the use of surrounding properties;

5. Facilities for police, fire protection, sewerage, water, trash and garbage collection and disposal, and the ability of the County or persons to supply such services;

6. The degree to which the development is consistent with generally accepted engineering and planning principles and practices;

7. The structures in the vicinity such as schools, houses of worship, theaters, hospitals, and similar places of public use;

8. The purposes set forth in this ordinance, the County's Comprehensive Plan, and related studies for land use, roads, parks, schools, sewers, water, population, recreation, and the like;

9. The environmental impact, the effect on sensitive natural features, and opportunities for recreation and open space; and

10. The preservation of cultural and historic resource landmarks.

Next Steps, if the CUP is approved, a preliminary and final site plan will be required in order to determine compliance with other County ordinances.

AGENCY REVIEW:

The application was sent to the following departments and agencies for review and comment. Comments received are attached.

Virginia Department of Transportation
Virginia Department of Conservation and Recreation
Virginia Department of Wildlife Resources
Virginia Department of Historic Resources
Virginia Department of Energy

Sussex County Chief of Fire and Rescue
Sussex County Sheriff
Sussex County Department of Economic Development
Dinwiddie County Administration and Community Development

STAFF CONCLUSIONS:

Strengths:

1. The operation will supply high quality construction aggregate necessary for development projects and building construction.
2. The application is consistent with the Comprehensive Plan.
3. The application proposes a granite quarry and processing facility that will be provide an additional revenue source for the County with materials dispatched via the site.
4. The applicant proposes to make substantial road improvements to Route 630.
5. The operation proposes to avoid impacts to environmentally sensitive areas, including identified wetlands, archeological and architectural sites.

Weaknesses:

1. Granite mining has the potential to create noise via blasting and equipment operations. (See attached noise study.)

STAFF RECOMMENDATION:

Based on the strengths noted, staff recommends approval of the Conditional Use Permit with the following recommended conditions.

1. The Applicant shall develop, construct, operate, and maintain the site in substantial conformance with the application documents dated May 17, 2024, the operations plan dated June 2024, and the revised conceptual plan dated June 28, 2024, as determined by the Zoning Administrator. Substantial conformance will be determined by the Zoning Administrator based on his/her review of the record. Deviations determined not to be in substantial conformance with the application documents and conceptual plan shall require review and approval as an amendment to the conditional use permit, following the process for the granting of a conditional use permit. As used in these conditions, the term "Applicant" shall include the terms "Applicant, Owner, Developer, or Operator," and the successors and assigns thereof, the term "Zoning Administrator" shall include the designee of the Zoning

Administrator, and the terms "Project" and "Solar Facility" shall include the facility in its entirety, including the battery energy storage facility unless the context clearly dictates otherwise.

2. The applicant shall dedicate 25' from the centerline of Route 630 for future road widening.
3. The applicant shall upgrade Route 630 to a minimum standard as may be required by the Virginia Department of Transportation prior to operation of the quarry.
4. All federal, state and local laws, regulations, permit requirements and ordinances will be adhered to including but not limited to:
    a. Virginia Department of Energy- Mineral Mining Permit
    b. Virginia Department of Environmental Quality and Department of Energy– Well Impact Study and Remediation Plan
    c. US Army Corps of Engineers- Wetland Jurisdictional Determination
    d. Virginia Department of Historic Resources- Archeological Study
    e. Virginia Department of Transportation- Traffic Impact Study
    f. The site shall fully comply with all applicable provisions of the Sussex County Code of Ordinances throughout the life of this CUP.

ATTACHMENTS:

Application and supporting documents
Agency Comments

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CHANEY ENTERPRISES

Chaney Enterprises – Stony Creek Quarry

Chaney Enterprises is requesting approval for a Conditional Use Permit to construct and operate a Granite Quarry, located off Route 630 in Sussex County, Virginia. Chaney is family-owned and has been in operation since 1962 in the sand and gravel industry. We have a growing local demand for high-quality construction aggregate, and this facility would support our surrounding operations for many years to come.

Quarries and the granite products they produce are not only a vital part of our modern life but have been essential to civilizations for thousands of years. Without quarries, we would not have stone, gravel, or sand that is essential to the construction industry. Concrete is one of the most important building materials, and it serves as the crucial building block for many of the things we use each day including our homes, hospitals, interstates, shopping malls, schools, etc. One of the major components of concrete is coarse aggregate produced from quarries.

The benefits of granite extend beyond simply providing construction materials. The mining industry also provides numerous economic benefits to the local and regional communities. It creates quality, high paying jobs, and our company has an excellent track record of being an outstanding community partner. Many employees find long-lasting employment with the Chaney family. Many of these employees will live in the local community to remain as close as possible to their work. Their wages return to the local economy, including supporting local business.

The aggregate industry has over 150 businesses that have operated across the Commonwealth for multiple decades, distributing most products within an average of 30 miles from where they produced.

The aggregate industry generates over $132 million in tax revenues for both the state and local communities. This money is used for schools, healthcare systems, emergency services, water treatment facilities, and other necessary infrastructure. This quarry is a significant investment for Chaney and will bring substantial revenue to the county for many years.

We understand the potential concerns that come from sharing space with a quarry. For this reason, there are substantial regulations in effect, and we will put in place site specific conditions to protect the operation and the community at large. While we do require infrequent blasting, we take every step to minimize any impacts to residents, both socially and economically.

We at Chaney sincerely appreciate the opportunity to grow our partnership with Sussex County in the development of this quarry.

2410 Evergreen Road | Suite 201 | Gambrills, Maryland 21054
WEB ChaneyEnterprises.com PHONE 888-424-2639

Dewberry

Dewberry Design-Builders Inc.
4805 Lake Brook Drive, Suite 200
Glen Allen, VA 23060-9278
804.290.7957
804.290.7928 fax
www.dewberry.com

June 28, 2024

Sussex County Planning & Zoning Department
Attn: Michael Poarch, County Planner
20135 Princeton Road
Sussex, VA 23884

RE: Project Freedom - Additional Information Request Response

Dear Mr. Poarch,

Mr. Michael Poarch, the Planner for Sussex County Virginia, evaluated Project Freedom, a planned quarry to be located within that County. On June 21, 2024, Mr. Poarch issued a request for additional information to aid in his assessment. Chaney Enterprises submits the following responses to the County's request.

1. **Please provide an operations plan to include a narrative of the proposed overall site operation (plant and conveyor operations), proposed hours of operation, primary truck routes on- and off-site, project phasing plan (acreage and tonnage) and schedule, measures to avoid impacts to wetlands and identified potentially significant archeological sites and threatened and endangered species as recommended by DCR and DWR, proposed lifetime of the operation, and reclamation use.**

    a. Please see Operations Plan in **Attachment A** of this response document.

2. **The noise study does not include a blasting scenario. Please include an analysis of the impacts of noise and vibrations from blasting activities and their frequency. Since you have advised that there was no model study for blasting, you may base your analysis on activities of a similar operation.**

    a. The study is underway, and the findings are forthcoming.

3. **The TIA recommends widening the Route 40 and Route 635 intersection limits, as necessary, to accommodate heavy vehicle maneuvers, installing intersection and/or truck warning signs along Route 40, and incorporating passing restrictions. However, staff is concerned with the substandard width of Route 630 consisting of a 20' prescriptive easement and does not meet the current 50' VDOT secondary width requirement. Staff recommends widening Route 630 from the site entrance to the Route 40 intersection, including providing an adequate base and shoulders to accommodate heavy truck traffic. Staff also requests that the perimeter berms be setback to include a 25' right-of-way dedication to public use from the centerline of Rt. 630 on the quarry site to accommodate the anticipated improvements to bring Route 630 to VDOT standards prior to operation of the mining site.**

a. Chaney Enterprises will improve Little Mill Road/630 from our entrance to Route 40 to a minimum width of 25' and install appropriate striping and signs.

b. Chaney Enterprises will install VDOT Approved Commercial Entrance into the facility.

c. Chaney Enterprises agrees that the perimeter berms be setback to include a 25' right-of-way dedication to public use from the centerline of Rt. 630 on the quarry site to accommodate the anticipated improvements to bring Route 630 to VDOT standards prior to operation of the mining site.

4. **Please include the flood zone designation on the concept and clearly delineate the limits of the floodplain on the property. If improvements (including the installation of berms) are proposed in the floodplain, hydrologic and hydrologic analysis shall be provided. Otherwise, all improvements shall be located outside the limits of the floodplain.**

    a. Based on updated preliminary site plan, the project will have no encroachments into 100-year floodplain.

5. **Please provide legend on the concept plan and/or include the following:**

    (1) Label the limits of wetlands and proposed wetland buffers.

    a. An updated figure/preliminary site plan has been provided with this response document as **Attachment B**.

    (2) Include the proposed berm height.

    a. An updated figure/preliminary site plan has been provided with this response document as **Attachment B**.

    (3) Clearly label and outline the limits of areas to be mined, the acreage included in each.

    a. An updated figure/preliminary site plan has been provided with this response document as **Attachment B**.

6. **Attach the comments from DCR, DWR and VDOT.**

    a. **DCR Comments:**

    i. **To minimize adverse impacts to the aquatic ecosystems as a result of the proposed activities, DCR recommends the implementation and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations, establishment/enhancement of riparian**

buffers with native plant species and maintaining natural stream flow.

- Chaney Enterprises agrees to implementation and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations, establishment/enhancement of riparian buffers with native plant species and maintaining natural stream flow.

ii. **DCR also recommends maintain forested riparian buffers along the river (Sappony) and any streams on the property. These buffers should be at least 100 ft wide on both sides of the waterways. If slopes are 11-25% the buffers should be at least 150 ft wide, and if the slopes are greater than 25% the buffers should be at least 200 ft wide.**

- Chaney Enterprises agrees to a minimum 100 ft wide buffer of Sappony Creek and based on additional guidance have further increased the buffer to 150-200 ft where applicable and allowable based on percent slope of adjacent land. An updated preliminary site plan showing setbacks has been provided with this response document.

b. **DWR Comments:**

i. **It is unclear from the information provided, whether the extraction process for the granite will be purely physical or involve a chemical component. If there is a chemical component involving potential leachate into the adjacent water bodies and/or aquifer, DWR requests a plan, assurance, and bond to ensure no chemicals leave the site. Further coordination with DWR is recommended should chemical extraction processes become necessary.**

- The mining process proposed for Project Freedom does not utilize any chemical components during onsite processing of materials.

ii. **If in-stream work is proposed, we recommend conducting any in-stream activities during low or no-flow conditions, using non-erodible cofferdams or turbidity curtains to isolate the construction area, blocking no more than 50% of the streamflow at any given time (minimal overlap of construction footprint notwithstanding), stockpiling excavated material in a manner that prevents reentry into the stream, restoring original streambed and streambank contours, revegetating barren areas**

with native vegetation, and implementing strict erosion and sediment control measures.

- No in-stream work is proposed with this project.

iii. **To minimize overall impacts to wildlife and our natural resources, we offer the following comments about development activities: we recommend that the applicant avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable.**

- The project has avoided and minimized impacts to these resources to the greatest extent practicable. Please see operation plan (**Attachment A)** for further details.

iv. **We recommend that the stormwater controls for this project be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales.**

- Chaney Enterprises agrees to implementation and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations as regulated by the Virginia Department of Mines, Minerals, and energy (DMME).
- Chaney Enterprises will review inclusion of DMME recommended stormwater management controls during the design phase of the project.

v. **We recommend protecting from impacts a naturally vegetated buffer of at least 300 ft on both sides of waters known to support listed aquatic species (including Sappony Creek).**

- Chaney Enterprises intends to follow DCR recommendations for buffers to be a minimum 100 ft wide along Sappony Creek and based on additional guidance have further increased the buffer to 150-200 ft where applicable and allowable based on percent slope of adjacent land. An updated preliminary site plan has been provided with this response document. Additionally, the impoundment of Sappony Creek downstream of the project is likely the limits of suitable habitat for listed aquatic species.

vi. **We recommend protecting from impacts a naturally vegetated buffer of at least 100 ft on all sides of any wetland.**

- Chaney Enterprises has increased wetland buffers from 25' to 50' in the provided site plan to accommodate this request to the greatest extent practicable.

c. **VDOT Comments:**

i. **Route 630 from the site is a low-volume, narrow, surface treated secondary road. We recommend the applicant analyze the geometry and pavement section of the existing road and determine if widening the road and/or increasing the asphalt thickness of the road to its inter section with Route 40 may be warranted to accommodate the significant volume addition of heavily loaded truck traffic.**

- Chaney Enterprises will improve Little Mill Road/630 from our entrance to Route 40 to a minimum width of 25' and install appropriate striping and signs.
- Chaney Enterprises agrees to address Route 630 and Route 40 improvements during design phase of the project.

ii. **A moderate volume commercial entrance shall be required in accordance with Appendix F of the VDOT Road Design Manual.**

- Chaney Enterprises will install VDOT Approved Commercial Entrance into the facility.

iii. **The commercial entrance shall be formed concrete to minimize damage to the road. Dimensions shall be determined during the site plan/permitting phase, in accordance with Appendix F. A minimum 15" drainage pipe will be required in the roadside ditch.**

- Chaney Enterprises agrees that dimensions shall be determined during the site plan/permitting phase, in accordance with Appendix F of the VDOT Road Design Manual.

iv. **Intersection sight distance in accordance with Appendix F of the VDOT Road Design Manual shall be provided at the entrance.**

- Chaney Enterprises agrees that dimensions shall be determined during the site plan/permitting phase, in accordance with Appendix F of the VDOT Road Design Manual.

v. **The applicant shall install fixed post "Trucks Entering Highway" signs in both directions to alert motorists to the entrance.**

- Chaney Enterprises agrees to address all applicable and appropriate roadway signage during the site plan/permitting phase, in accordance with Appendix F of the VDOT Road Design Manual.

Thank you for your review and consideration of our response. If you have any further questions, please contact Thad Loucks directly at 840-823-6983 or TLoucks@Dewberry.com.

Sincerely,

Clay Robertson
Senior Environmental Scientist

Thaddeus Loucks
Department Manager

<u>Attachments:</u>
Attachment A: Project Freedom Operation Plan
Attachment B: Project Freedom Preliminary Site Plan

ATTACHMENT A

PROJECT FREEDOM OPERATION PLAN

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CHANEY ENTERPRISES

Chaney Enteprises – Project Freedom Quarry – Sussex County, VA

Operations Plan:

I. Hours of Operation:
   a. Shipping Hours - 6:00 AM to 4:00 PM M-F / 7:00 AM to 3:00 PM on Saturdays and no shipping on Sundays
      i. 24-hour shipping is allowed for DOT jobs, state, or local emergencies
   b. Plant Operation Hours – 6:00 AM to 6:00 PM M-F / 7:00 AM to 3:00 PM on Saturdays and no Plant Operations on Sundays
   c. As needed maintenance for plant or equipment will be allowed on Sundays but only if needed
   d. NO BLASTING ON WEEKENDS

II. Truck Counts/Routes:
   a. 300 outbound loads per day, maximum.
   b. Trucks will make a right out of our site entrance, head towards Route 40 and then head east or west on Route 40 depending on delivery location.

III. Road Improvements:
   a. VDOT Approved Commercial Entrance into our facility.
   b. Improve Little Mill Road/630 from our entrance to Route 40 to a minimum width of 25' and install appropriate striping and speed limit signs.

IV. Blasting:
   a. All blasting is done by a Licensed Third-Party Blasting company
      i. No explosives to be stored on site
      ii. All explosives managed under blasting company ATF license
      iii. All blasting will be monitored for vibration and "air over pressure"
   b. Production Blasting will take place 1-4 times per month and conform to DMME standards.
      i. The frequency will be 1-2 times per month for the immediate future, 3-4 times per month would be many years down the road at full plant capacity.
   c. Pre Blast Notifications will be sent to all surrounding neighbors that would like notifications
      i. Notifications can be sent via phone call, email, or text message
   d. Pre Blast / Facility Opening Inspections – we will offer pre blast home surveys/inspections to establish baseline home conditions to ensure we have no impacts on home foundations, walls, etc.
      i. If issues arise from blasting and are identified as new impacts post blasting, we will make appropriate repairs to home.

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CHANEY ENTERPRISES

V. Operations:

a. Facility will be broken down into two pit phases, Phase 2 will not start until reserves in Phase 1 are nearing exhaustion. Clearing will be done on an as needed basis.
   i. Phase 1: Quary Limits – 12.03 AC and approximately 16,000,000 Tons
      1. Plant
      2. Wash Ponds
      3. Scales
      4. Scalehouse
      5. VDOT Entrance
      6. Employee Parking
      7. First Phase of Active Quarry
   ii. Phase 2: Quarry Limits - 96.4 AC and approximately 60,000,000 Tons
      1. Second Phase of Active Quarry
      2. Crushing/Conveying Equipment to move aggregate from Phase 2 into Phase 1 to be processed at the plant
      3. Only heavy equipment will be active in this phase 2, no on road haul trucks, all on road haul trucks will use the infrastructure built in Phase 1 for the life of the facility.
      4. Maintenance Entrance will be gated and locked, this will only be used for employee access, maintenance vehicles, equipment delivery, and emergency access for use within Phase 2 of the Quarry.
   iii. Reclamation:
      1. Reclamation plan will be approved by DMME as part of our mining plans
      2. Open pit quarry areas will be converted to permanent ponds that will support surrounding the irrigation needs of the surrounding agricultural uses
      3. All topsoil will be stripped and preserved in the construction of the berms.
      4. Upon completion of mining and de-mobilization of all equipment, any areas that are not associated with the open pit will be converted back into agricultural uses.
         a. Will develop a post mining plan with the support of Virginia Tech Mining and Reclamation Department to ensure fields are put back to a productive tillable status.
      5. All disturbed AC will be bonded with VA Division of Mineral Mines and Energy for reclamation.
   iv. Berms:
      1. Minimum 12' berm to be constructed around entirety of operation, both Phases 1 and 2.
   v. On-Site Equipment:
      1. All on-site equipment will have "White Noise" backup alarms.

vi. Site Lighting:
 1. All site lighting will be "Dark Skies" to prevent light pollution
 2. During off hours, all lights will be turned off at the plant with the exception of security lighting

vii. Security:
 1. Entire property to surrounded by berms
 2. All vehicular entrances will be gated and secured with locks
 3. Knox boxes will be installed at all gates for fire and rescue services
 4. Access to all existing water sources will be provided for emergency services.
 5. Entrance will have all proper signage and visible identification.
 6. Site is controlled by both MSHA for safety requirements and DMME for mining and environmental requirements.

viii. Dust Control:
 1. Plant will be equipped with newest dust control measures, spray bars, etc.
 2. Permanent water truck will be dedicated to this site for dust control on all roads
 3. Permanent sweeper truck will be dedicated to the site so that entrance, roads, and intersections can be kept free of all debris.

VI. <u>Additional Permits/Plans/Studies:</u>

a. VA DMME Mining Permit
b. VA DEQ/DMME Well Impact Study and Remediation Plan
 i. 4 monitoring wells have been installed across the site to establish a baseline and will be monitored throughout the project
  1. If any surrounding wells are impacted and deemed our responsibility, we will repair/replace in accordance with the DMME plan.
c. USACOE Wetland Jurisdictional Determination
d. State Approved Archeological Study
e. VDOT Approved Traffic Impact Study
f. ALL PERMITS MUST BE IN HAND BEFORE ANY OPERATIONS CAN BEGIN

VII. <u>Buffers and Setbacks:</u>

a. 50' setback off all wetlands
b. 30' setback off all archeological findings from top of mine
c. Avoid all floodplain limits
d. All tree removal and ground clearing adhere to a time of year restriction (TOYR) protective of resident and migratory songbird nesting from March 15 through August 15 of any year.

2410 Evergreen Road | Suite 201 | Gambrills, Maryland 21054
WEB ChaneyEnterprises.com PHONE 888-424-2639

ATTACHMENT B

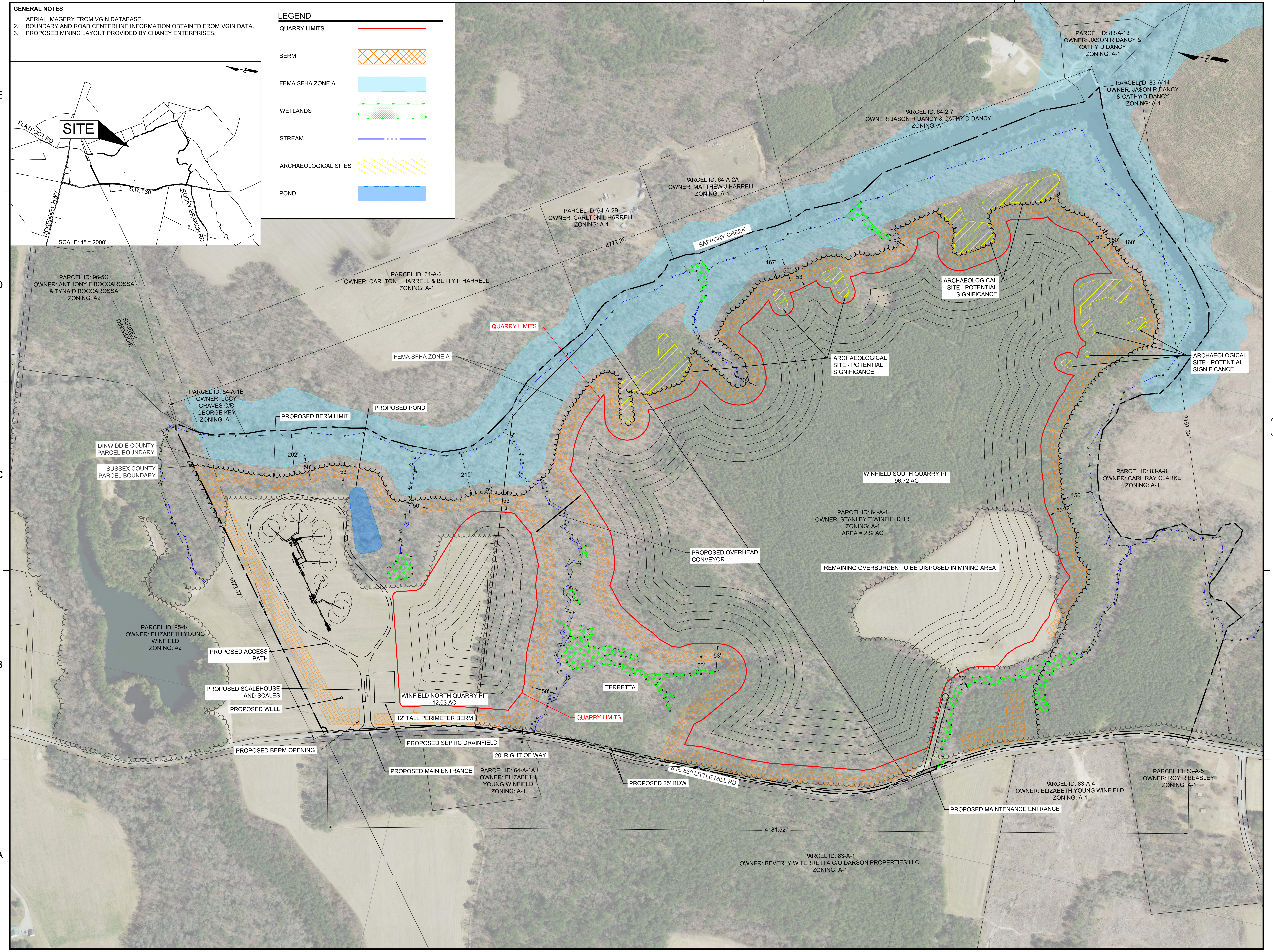
PRELIMINARY SITE PLAN

GENERAL NOTES

1. AERIAL IMAGERY FROM VGIN DATABASE.
2. BOUNDARY AND ROAD CENTERLINE INFORMATION OBTAINED FROM VGIN DATA.
3. PROPOSED MINING LAYOUT PROVIDED BY CHANEY ENTERPRISES.

LEGEND

- QUARRY LIMITS
- BERM
- FEMA SFHA ZONE A
- WETLANDS
- STREAM
- ARCHAEOLOGICAL SITES
- POND



Dewberry

Dewberry Engineers Inc.
4805 Lake Brook Drive
Suite 200
Glen Allen, VA 23060
804.290.7957

PROJECT FREEDOM

SUSSEX COUNTY, VA

CONCEPT DESIGN

SEAL

PRELIMINARY DOCUMENTS
NOT FOR CONSTRUCTION

KEY PLAN

SCALE

0' 100' 200' 400'
SCALE: 1" = 200'

REVISIONS

NO.	DESCRIPTION	DATE

DRAWN BY RAY
APPROVED BY KAP
CHECKED BY KAP
DATE 06/28/2024

TITLE

CONCEPT PLAN

PROJECT NO. 50164971

SHEET NO. OF

COMMONWEALTH of VIRGINIA
DEPARTMENT OF TRANSPORTATION
23116 Meherrin Road
COURTLAND, VIRGINIA 23837

June 10, 2024

Michael Poarch
Community Development
Sussex County
P. O. Box 1397
Sussex, VA 23884

RE: Freedom Granite Quarry
TM #64-A-1
Little Mill Rd. (Rt. 630)
Sussex County

The Residency has completed its review of the submitted conditional use permit application dated April 19, 2024 and received by the VDOT Land Development Office May 17, 2024 for the proposed Freedom Granite Quarry. We offer the following comments:

1) We concur with the submitted TIA, with regards to turn lane warrants and safety measures.

2) Route 630 from the site is a low-volume, narrow, surface treated secondary road. We recommend the applicant analyze the geometry and pavement section of the existing road and determine if widening the road and/or increasing the asphalt thickness of the road to its intersection with Route 40 may be warranted to accommodate the significant volume addition of heavily loaded truck traffic

3) A moderate volume commercial entrance shall be required in accordance with Appendix F of the VDOT Road Design Manual.

4) The commercial entrance shall be formed concrete to minimize damage to the road. Dimensions shall be determined during the site plan/permitting phase, in accordance with Appendix F. A minimum 15" drainage pipe will be required in the roadside ditch.

5) Intersection sight distance in accordance with Appendix F of the VDOT Road Design Manual shall be provided at the entrance.

6) The applicant shall install fixed post "Trucks Entering Highway" signs in both direction to alert motorists to the entrance.

SUPPORTING DOCUMENTS

1) A detailed narrative which addresses each comment listed above must accompany your re-submittal package. Any revisions beyond those necessary to address the review comments listed above must be identified separately in the re-submittal narrative.

2) Please provide two (2) folded copies of the revised plans and two (2) copies of the detailed narrative with your re-submittal package.

ADVISORY

a) An electronic file of the approved plan in PDF format shall be provided for VDOT use.

If you have any questions, please contact me at (757) 346-3068 or Joshua.Norris@vdot.virginia.gov.

Sincerely,

Joshua R. Norris
Land Use Engineer
Virginia Department of Transportation
Franklin Residency

Travis A. Voyles
Secretary of Natural and Historic Resources

Matthew S. Wells
Director

Andrew W. Smith
Chief Deputy Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

Frank N. Stovall
Deputy Director for Operations

Darryl Glover
Deputy Director for Dam Safety, Floodplain Management and Soil and Water Conservation

Laura Ellis
Deputy Director for Administration and Finance

June 7, 2024

Michael Poarch
Sussex County
20135 Princeton Road
Sussex, VA 23884

Re: Project Freedom Quarry Conditional Use Permit

Dear Mr. Poarch:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to DCR's predicted suitable habitat modeling and review by a DCR biologist, there is a potential for the Roanoke Logperch (*Percina rex*, G1G2/S1S2/LE/LE) and the Atlantic Pigtoe (*Fusconaia masoni*, G1/S2/LT/LT) to occur in Sapphony Creek which borders the project area if suitable habitat exists on site.

The Roanoke Logperch is endemic to the Roanoke and Chowan River drainages in Virginia (Burkhead and Jenkins, 1991) and inhabits medium and large, warm and usually clear rivers with sandy to boulder spotted bottoms (NatureServe, 2009). Please note that this species is classified as endangered by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Wildlife Resources (VDWR).

The Roanoke logperch is threatened by channelization, siltation, impoundment, pollution, and de-watering activities (Burkhead & Jenkins, 1991).

The Atlantic Pigtoe is a medium-sized freshwater mussel which ranges from the Ogeeshee drainage in Georgia north to Virginia (NatureServe, 2009). In Virginia, this species is known from the James, Chowan and Roanoke River basins (NatureServe, 2009). The Atlantic pigtoe prefers clear, swift waters with gravel or sand and gravel substrates. Many populations from the main stem of larger rivers have disappeared and the species is becoming limited to the headwater areas of drainages in which it occurs. This could have implications for populations being able to reestablish after a localized, catastrophic event and for genetic exchange.

Threats to the Atlantic pigtoe include pollution, impoundments, clearcutting, and dredging (Gerberich, 1991). This species does not appear to be able to tolerate habitat changes and it appears to be very poor at recolonizing previously disturbed habitats (NatureServe, 2009). A recent study determined that the glochidia of the Atlantic pigtoe are extremely sensitive to pollution (Augspurger et al., 2003). Please note that this species is classified as threatened by the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Wildlife Resources (VDWR).

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations, establishment/enhancement of riparian buffers with native plant species and maintaining natural stream flow. DCR also recommends maintaining forested riparian buffers along the river and any streams on the property. These buffers should be at least 100 feet wide on both sides of the waterways. If slopes are 11-25 % the buffers should be 150 feet wide and if slopes are greater than 25% buffers should be at least 200 feet wide.

Sapphony Creek has also been designated by the VDWR as a "Threatened and Endangered Species Water" for the Atlantic pigtoe. Therefore, DCR recommends coordination with the US Fish and Wildlife Service (USFWS) and the VDWR, Virginia's regulatory authority for the management and protection of these species to ensure compliance with protected species legislation.

Please note, the Desktop Threatened and Endangered Species Assessment dated April 10, 2024 and prepared by Dewberry states that "no habitats of rare, threatened or endangered plant and animal species were located on or within 100 feet of the subjects property's boundaries.... DCR issued a 'no further correspondence letter'..". While this statement is correct, the project boundary submitted to DCR's Nature Hertiage Data Explorer was not the same as the project boundary displayed in the Concept Design dated April 15, 2024 and submitted to DCR.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed https://services.dwr.virginia.gov/fwis/ or contact Hannah Schul at Hannah.Schul@dwr.virginia.gov.

The U.S. Fish and Wildlife Service (USFWS) utilizes an online project review process (https://www.fws.gov/office/virginia-ecological-services/virginia-field-office-online-review-process) to facilitate compliance with the Endangered Species Act (16 U.S.C. 1531-1544, 87 Stat. 884) (ESA), as amended. The process enables users to 1) follow step-by-step guidance; 2) access information that will allow them to identify threatened and endangered species, designated critical habitat, and other Federal trust resources that may be affected by their project; and 3) accurately reach determinations regarding the potential effects of their project on these resources as required under the ESA. If you have questions regarding the online review process, please contact Rachel Case at rachel_case@fws.gov.

Should you have any questions or concerns, feel free to contact me at 804-625-3979. Thank you for the opportunity to comment on this project.

Sincerely,

Nicki Gustafson
Natural Heritage Project Review Assistant

Cc: Hannah Schul, VDWR

Literature Cited

Augspurger, T., A.E. Keller, M.C. Black, W.G. Cope, and F.J. Dwyer. 2003. Water quality guidance for protection of freshwater mussels (Unionidae) from ammonia exposure. Environmental Toxicology and Chemistry, 22: 2569-2575.

Burkhead, N.M. and R.E. Jenkins. 1991. Roanoke logperch. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia. p. 395-397.

Gerberich, Andy. 1991. Atlantic pigtoe. In Virginia's Endangered Species: Proceedings of a Symposium. K. Terwilliger ed. The McDonald and Woodward Publishing Company, Blacksburg, Virginia.

NatureServe. 2009. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. Available http://www.natureserve.org/explorer. (Accessed: April 27, 2010, June 21, 2010).

Michael Poarch

From: Doucette, Tamara (DWR) <Tamara.Doucette@dwr.virginia.gov>
Sent: Thursday, June 13, 2024 2:14 PM
To: Michael Poarch
Cc: Schul, Hannah (DWR); Strawderman, Nicole (DWR)
Subject: ESSLog #45246_Sussex Granite Mine_DWR_TMD20240613

Michael,

We have reviewed the CUP for the proposed granite mining quarry in Sussex County. Sappony Creek at the eastern border of the property is a designated Threatened and Endangered Water due to the presence of federally- and state-threatened Atlantic Pigtoe. It is unclear if any in-stream work or stream impacts will be involved with the proposed project. If in-stream work is proposed, we recommend an in-stream TOYR of May 15 through July 31st, protective of Atlantic Pigtoe. Further, we recommend adherence to our standard in-stream BMPs, as detailed further below.

Based on the information provided, and known occurrences and habitat requirements for the Red-cockaded Woodpecker, DWR does not believe suitable habitat for this species occurs within the proposed project location. Although the RCW occurs in Sussex County, in the commonwealth this species currently occurs only on actively managed lands owned or operated by DWR or TNC. As such, we do not believe impacts to this species will occur from the proposed activities, however, DWR supports coordination with USFWS concerning best management practices for conservation of the species.

It is unclear from the information provided, whether the extraction process for the granite will be purely physical, or involve a chemical component. If there is a chemical component involving potential leachate into the adjacent water bodies and/or aquifer, DWR requests a plan, assurance, and bond to ensure no chemicals leave the site. Further coordination with DWR is recommended should chemical extraction processes become necessary.

If in-stream work is proposed, we recommend conducting any in-stream activities during low or no-flow conditions, using non-erodible cofferdams or turbidity curtains to isolate the construction area, blocking no more than 50% of the streamflow at any given time (minimal overlap of construction footprint notwithstanding), stockpiling excavated material in a manner that prevents reentry into the stream, restoring original streambed and streambank contours, revegetating barren areas with native vegetation, and implementing strict erosion and sediment control measures. We recommend that instream work be designed and performed in a manner that minimizes impacts upon natural streamflow and movement of resident aquatic species. If a dam and pump-around must be used, we recommend it be used for as limited a time as possible and that water returned to the stream be free of sediment and excess turbidity. To minimize potential wildlife entanglements resulting from use of synthetic/plastic erosion and sediment control matting, we recommend use of matting made from natural/organic materials such as coir fiber, jute, and/or burlap. To minimize harm to the aquatic environment and its residents resulting from use of the Tremie method to install concrete, installation of grout bags, and traditional pouring of concrete, we recommend that such activities occur only in the dry, allowing all concrete to harden prior to contact with open water. Due to future maintenance costs associated with culverts, and the loss of riparian and aquatic habitat, we prefer stream crossings to be constructed via clear-span bridges. However, if this is not possible, we recommend countersinking any culverts below the streambed at least 6 inches, or the use of bottomless culverts, to allow passage of aquatic organisms. We also recommend the installation of floodplain culverts to carry bankfull discharges.

To minimize overall impacts to wildlife and our natural resources, we offer the following comments about development activities: we recommend that the applicant avoid and minimize impacts to undisturbed forest, wetlands, and streams to the fullest extent practicable. Avoidance and minimization of impact may include relocating stream channels as opposed to filling or channelizing as well as using, and incorporating into the development plan, a natural stream channel design and forested riparian buffers. We recommend maintaining wooded lots to the fullest extent possible. We generally do not support proposals to mitigate wetland impacts through the construction of stormwater management ponds, nor do we support the creation of in-stream stormwater management ponds.

We recommend that the stormwater controls for this project be designed to replicate and maintain the hydrographic condition of the site prior to the change in landscape. This should include, but not be limited to, utilizing bioretention areas, and minimizing the use of curb and gutter in favor of grassed swales. Bioretention areas (also called rain gardens) and grass swales are components of Low Impact Development (LID). They are designed to capture stormwater runoff as close to the source as possible and allow it to slowly infiltrate into the surrounding soil. They benefit natural resources by filtering pollutants and decreasing downstream runoff volumes.

We recommend that all tree removal and ground clearing adhere to a time of year restriction (TOYR) protective of resident and migratory songbird nesting from March 15 through August 15 of any year.

We recommend adherence to erosion and sediment controls during ground disturbance. To minimize potential wildlife entanglements resulting from use of synthetic/plastic erosion and sediment control matting, we recommend use of matting made from natural/organic materials such as coir fiber, jute, and/or burlap.

Stream buffers:

- We recommend protecting from impacts a naturally vegetated buffer of at least 300 ft on both sides of waters known to support listed aquatic species (including Sappony Creek).

Wetland buffers:

- We recommend protecting from impacts a naturally vegetated buffer of at least 100 ft on all sides of any wetland.

The U.S. Fish and Wildlife Service (in Virginia) utilizes an online project review process (https://www.fws.gov/office/virginia-ecological-services/virginia-field-office-online-review-process) to facilitate compliance with the Endangered Species Act (16 U.S.C. 1531-1544, 87 Stat. 884) (ESA), as amended. The process enables users to 1) follow step-by-step guidance; 2) access information that will allow them to identify threatened and endangered species, designated critical habitat, and other Federal trust resources that may be affected by their project; and 3) accurately reach determinations regarding the potential effects of their project on these resources as required under the ESA. If you have questions regarding the online review process, please contact Rachel Case at rachel_case@fws.gov.

In addition to the listed species and wildlife resources mentioned above, a number of species designated as Species of Greatest Conservation Need in Virginia's Wildlife Action Plan are likely to occur, if suitable habitat exists, in and around the project area. We recommend that the Virginia Wildlife Action Plan (available through www.bewildvirginia.gov) be reviewed to determine what threats are known to these species, what constitutes suitable habitat for these species, and how to best protect them and their habitats from harm.

Thank you,

Tamara

Tamara Doucette
Environmental Services Biologist
Wildlife Information and Environmental Services
P 804.367.8364
Department of Wildlife Resources
CONSERVE. CONNECT. PROTECT.
A 7870 Villa Park Drive, P.O. Box 90778, Henrico, VA 23228
www.VirginiaWildlife.gov

Michael Poarch

From: David Conmy <dconmy@sussexcountyva.gov>
Sent: Saturday, June 29, 2024 8:01 PM
To: Michael Poarch
Subject: Re: Project Freedom Quarry Conditional Use Permit Application Review

Michael,

Thank you for following up on this.

From an economic development perspective, the proposed use would generate additional local revenues for the County. Sussex County experiences elevated levels of local fiscal stress, so the additional revenue could help to alleviate this circumstance. The CUP application states the fair market value of site improvements to be $30,000,000. It would be helpful to understand if this is the applicant's estimate of the value of the granite deposit on the subject property or if this is related to something else. If the estimated fair market value provided IS related to the granite deposit; then, this would be taxed separately but at the same real estate tax rate for the County. Based on the County's recently adopted budget for FY2025, the real estate tax rate is $0.53 per $100 of assessed value. When applied to the estimated fair market value of the granite deposit (assuming this is what the CUP application is referring to), this would produce approximately $159,000 in annual real estate tax revenue for the County.

Best,
David

J. David Conmy
Deputy County Administrator & Economic Development Director
Sussex County
20135 Princeton Road
P.O. Box 1397
Sussex, Virginia 23884
office: (434) 246-4395
mobile: (434) 632-9766

"Rooted in the Past...Growing for the Future!"

From: Michael Poarch <mpoarch@sussexcountyva.gov>
Sent: Thursday, June 20, 2024 3:06 PM
To: Mark L. Bassett <mbassett@dinwiddieva.us>; kmassengill@dinwiddieva.us <kmassengill@dinwiddieva.us>
Cc: Beverly Walkup <bwalkup@sussexcountyva.gov>; Richard Douglas <rdouglas@sussexcountyva.gov>; David Conmy <dconmy@sussexcountyva.gov>
Subject: Fw: Project Freedom Quarry Conditional Use Permit Application Review

Good Afternoon,

I hope you are doing well. I just wanted to follow up to make sure that you are aware and have received the proposal for the granite quarry which is adjacent to the County line between Sussex and Dinwiddie. The application is still currently under review. If you have any questions, concerns, or comments, please let us know.

Sincerely,

M. Poarch
County Planner
Sussex County Planning & Zoning Department

From: Michael Poarch
Sent: Friday, May 17, 2024 12:19 PM
To: Fowler, Jason <jason.fowler@vdot.virginia.gov>; joshua.norris@vdot.virginia.gov <joshua.norris@vdot.virginia.gov>; vaenergy@energy.virginia.gov <vaenergy@energy.virginia.gov>; DmmInfo (Energy) <mineralmininginfo@energy.virginia.gov>; Jaime Bauer Robb <jaime.robb@deq.virginia.gov>; Hypes, Rene (DCR) <rene.hypes@dcr.virginia.gov>; Gwynn, Becky (DWR) <becky.gwynn@dwr.virginia.gov>; Nick Sheffield <nsheffield@sussexcountyva.gov>; Mark L. Bassett <mbassett@dinwiddieva.us>; kmassengill@dinwiddieva.us <kmassengill@dinwiddieva.us>; Ernest Giles <egiles@susova.us>
Cc: Beverly Walkup <bwalkup@sussexcountyva.gov>; Richard Douglas <rdouglas@sussexcountyva.gov>; David Conmy <dconmy@sussexcountyva.gov>
Subject: Project Freedom Quarry Conditional Use Permit Application Review

Good Afternoon,

I hope everyone is doing well. We have received a conditional use permit application for a proposed granite mining quarry. As part of the review, we wanted to gather initial feedback or comments from each respective agency and/or department.

Brief Description
The Conditional Use Permit application is for Project Freedom Quarry which intend to mine approximately 239 acres for granite. The project would be located off Little Mill Road (Route 630) in Sussex County bordering the county line beside Dinwiddie County.

Please see zip file link below to access the documents for your review and reference. We would appreciate all comments or feedbacks prior to June 7 if possible. If you have any issues accessing the link below, please let us know.

Project Freedom Quarry CUP application.zip

Sincerely,

M. Poarch
County Planner
Sussex County Planning & Zoning Department

"Good Things Are Happening in Sussex County!"
Sussex County, Virginia
Planning and Zoning Department

SUBMITTAL CHECKLIST FOR CONDITIONAL PERMITAPPLICATIONS

In conjunction with Article XV, *Administration and Enforcement* of the Sussex County Zoning Ordinance, as amended, the following information shall be submitted for a Conditional Use Permit Application. Please note that it is the applicant's responsibility to ensure that the application is in compliance with all Federal, State and County regulations.

No application for a Conditional Use shall be certified as complete unless the following information is provided, unless the Zoning Administrator reduces the number of required copies.

✔ 1. Fifteen (15) copies of the original, executed application and one (1) original executed application. Both the applicant(s) and the property owner(s) must have their signature(s) notarized on page No. 2 of the application.

✔ 2. The appropriate fees have been submitted with the application. Checks should be made payable to: Treasurer, Sussex County.

✔ 3. Fifteen (15) copies of a statement of the reasons for seeking such permit, and if applicable, astatement of conditions.

✔ 4. Fifteen (15) copies) of a narrative description of the property which shall include the Tax Parcel Identification Number.

✔ 5. One (1) copy of the most recent deed(s) for the property(s) associated with the application.

✔ 6. A concept plan of the property showing all existing and proposed physical improvements and such other information as is necessary to clearly indicate to the Planning Commission and Board of Supervisors that adequate provisions shall be made for compliance with all standards for that particular use and the extent of the property to be so used on a given parcel or parcels. Such document shall be drawn to scale and shall include the following information:
   1. A vicinity map at a scale of no less than one (1) inch equals two thousand (2,000) feet
   2. Title of drawing
   3. Date of drawing
   4. Existing wood line
   5. North arrow
   6. Scale bar
   7. Dimensions of property, location, size and elevation of existing buildings and proposed buildings, roadways, sidewalks, parking and loading spaces, and landscaping.
   8. Current zoning of parcel(s) to be rezoned, including tax map number(s) and owner(s)
   9. Current zoning of adjacent parcel(s), including tax map number(s) and owner(s)
   10. Street names including route number and width(s) of the right-of-way(s)
   11. Fifteen (15) full size copies, with one (1) reduced 11-inch X 17-inch copy shall be submitted
   12. Please note that additional information on the site layout may be requested by the Zoning Administrator during the review process in order to more effectively review the application and prepare the staff reports for the Planning Commission and Board of Supervisors.

☑ 7. Fifteen (15) copies of such supplemental material as may be necessitated by the proposal.

☑ 8. One (1) electronic copy of all application documents.

☑ 9. All real estate taxes must be paid and current at the time of submittal; otherwise, the submittal will be refused at the counter. Proof of the most recent tax payment to the County must accompany the application.

I, the undersigned, certify that this application is complete, accurate and contains all required and requested information, documents and other submittals, and that all statements made herein are, to the best of my knowledge, true and correct. I further certify that I have exercised due diligence to obtain the most recent, complete and correct information available. I understand that any section not completed in its entirety may delay processing of this application and the date of the Planning Commission public hearing and that the submittal of a complete application does not guarantee the application will be placed on the next available Planning Commission agenda.

Kyle Murray
Printed or Typed Name

Signature

4/19/24
Date

"Good Things Are Happening in Sussex County!"
Sussex County, Virginia
Planning and Zoning Department

APPLICATION FOR CONDITIONAL USE PERMIT

This application should be used to petition for a permit for certain uses which, because of their unique characteristics or potential impacts on adjacent land uses, are not generally permitted in certain zoning districts as a matter of right, but which may, under the right set of circumstances and conditions be acceptable in certain specific locations. The following application requirements are consistent with the procedures set forth in Section 16-274, *Public hearing on Conditional Use Permit*, of the Sussex County Zoning Ordinance, as amended.

Conditions to be discussed with staff.

A. APPLICATION:

Conditional Use Permit (Are applicant proposed conditions attached?): ☐ Yes ☑ No

The proposed use or activity is listed as a conditional use in the A-1 zoning district as per Section 2 in Article III of the Sussex County Zoning Ordinance.

Proposed Use, Activity, or Type of Improvement: Hard Rock Quarry

Fair Market Value of Improvements? $ 30,000,000

B. PROJECT DESCRIPTION:

Project Name: Project Freedom Quarry

Property Address (if any): 23906 Winfield Road Stony Creek, VA 23882

Election District: Stony Creek

Comprehensive Plan Designation: Stony Creek Planning Area

The use permit will apply to 239 acres out of 239 total acres

Tax Parcel Identification # 64-A-1 Number of acres to be effected: 239

Tax Parcel Identification # ___ Number of acres to be effected: ___

Tax Parcel Identification # ___ Number of acres to be effected: ___

Proposed Utilities (check all that apply): Public Water ☐ Private Well ☑
Public Sewer ☐ Private Septic ☑

Are there any deed restrictions on the property? ☐ Yes ☑ No
(If yes, please attach a copy of the deed restrictions.)

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Sussex County, Virginia
Planning and Zoning Department

COUNTY OF SUSSEX

DISCLOSURE OF REAL ESTATE HOLDINGS

Applicant Bedrock Materials, LLC an affiliate of Chaney Enterprises

Address 2410 Evergreen Road, Suite 201
Street

Gambrills | MD | 21054
City | State | Zip

REAL ESTATE HOLDINGS TO BE AFFECTED

Location or Address	Description
Parcel #: 64-A-1	

OTHER OWNERS OF AFFECTED REAL ESTATE

(Not Required for Corporation whose stock is traded on a national or local stock exchange or having more than 500 shareholders.)

Name of Individuals Corporation/Partnership Business Association	Address
N/A	

Does any member of the Sussex County Planning Commission or governing body have any interest in such property, either individually, by ownership of stock in a corporation owning such land, partnership, as the beneficiary of a trust, or the settlor of a revocable trust, or whether a member of the immediate household of any member of the Planning Commission or governing body has any such interest? ☐ Yes ☑ No

If yes, names of members:

I do solemnly swear that the foregoing statement(s) and attachments(s), if any, are complete, correct and true.

Applicant: Kyle Murray Applicant: [signature] Date: 4/19/24
Printed or Typed Name Signature

Commonwealth of Virginia
County of Sussex

Subscribed and sworn to before me Melody R. Patrick,
A Notary Public in and for the County of Sussex, Commonwealth of Virginia, this 19 day of April, 20 24.

[signature]
Notary Public

MELODY R. PATRICK NOTARY PUBLIC Reg. No. 7241176 COMMONWEALTH OF VIRGINIA

My Commission Expires January 31, 2025 Registration 7241176

"Good Things Are Happening in Sussex County!"
Sussex County, Virginia
Planning and Zoning Department

C. APPLICATION INFORMATION:

Applicant(s) Name(s): Bedrock Materials, LLC an affiliate of Chaney Enterprises

Address: 2410 Evergreen Road, Suite 201

City, State, Zip Code: Gambrills, MD 21054

Phone No.: 301-932-5000 Email: kmurray@chaneyenterprises.com Fax No.:

Property Owner(s) Name(s): Winfield Elizabeth Young Life Estate

Address: 23906 Winfield Road

City, State, Zip Code: Stony Creek Va. 23882

Phone No.: (804) 892-2195 Email: fudd4x4@msn.com Fax No.:

Applicants/Owners Affidavit (including compliance with all deed restrictions and covenants)

This application must be signed by the owner(s) of the subject property or must have attached written evidence of the owner's consent, which may be in the form of a binding contract of sale with the owner's signature or a letter signed by the owner(s), containing written authorization to act with full authority on the owner(s) behalf in filing this use permit application. Signing this application shall certify the owner's compliance with all deed restrictions and covenants, and shall constitute the granting of authority of the County to enter onto the property for the purpose of conducting site analyses and compliance with Federal, State and County regulations.

Applicant: Kyle Murray
Printed or Typed Name

Applicant: [signature]
Signature
Date: 4/19/24

County of Sussex, Commonwealth of Virginia

Subscribed and sworn to before me Melody R. Patrick, A Notary Public in and for the County of Sussex, Commonwealth of Virginia, this 19 day of April, 20

[signature]
Notary Public

My Commission Expires January 31, 20
Registration 7241176

MELODY R. PATRICK
NOTARY PUBLIC
Reg. No. 7241176
COMMONWEALTH OF VIRGINIA

Owner: Stanley T. Winfield III
Printed or Typed Name

Owner: [signature]
Signature
Date: 4/14/24

County of Sussex, Commonwealth of Virginia

Subscribed and sworn to before me Shaneka Shell-Lee, A Notary Public in and for the County of Sussex, Commonwealth of Virginia, this 14th day of April, 20 24

[signature]
Notary Public

My Commission Expires 11/30/2026

"Good Things Are Happening in Sussex County!"
Sussex County, Virginia
Planning and Zoning Department

C. APPLICATION INFORMATION:

Applicant(s) Name(s): Bedrock Materials, LLC an affiliate of Chaney Enterprises

Address: 2410 Evergreen Rd, Suite 201

City, State, Zip Code: Gambrills, MD 21054

Phone No.: 301.932.5000 Email: kmurray@chaneyenterprises.com Fax No.:

Property Owner(s) Name(s): Beverly W. Terretta/Darson Properties, LLC

Address: 2909 Oaklawn Boulevard

City, State, Zip Code: Hopewell, VA 23860

Phone No.: Email: Fax No.:

Applicants/Owners Affidavit (including compliance with all deed restrictions and covenants)

This application must be signed by the owner(s) of the subject property or must have attached written evidence of the owner's consent, which may be in the form of a binding contract of sale with the owner's signature or a letter signed by the owner(s), containing written authorization to act with full authority on the owner(s) behalf in filing this use permit application. Signing this application shall certify the owner's compliance with all deed restrictions and covenants, and shall constitute the granting of authority of the County to enter onto the property for the purpose of conducting site analyses and compliance with Federal, State and County regulations.

Applicant: Kyle Murray
Printed or Typed Name

Applicant: [signature] Date: 4/19/24
Signature

County of Sussex, Commonwealth of Virginia

Subscribed and sworn to before me Melody R. Patrick, A Notary Public in and for the County of Sussex, Commonwealth of Virginia this 19 day of April

MELODY R. PATRICK NOTARY PUBLIC Reg. No. 7241176 COMMONWEALTH OF VIRGINIA

[signature]
Notary Public

My Commission Expires January 31, 2025
Registration 7241176

Owner: BEVERLY W TERRETTA
Printed or Typed Name

Owner: Beverly W Terretta Date: 04.19.2024
Signature

County of Sussex, Commonwealth of Virginia

Subscribed and sworn to before me Melody R. Patrick, A Notary Public in and for the County of Sussex, Commonwealth of Virginia this 19 day of April, 20

MELODY R. PATRICK NOTARY PUBLIC Reg. No. 7241176 COMMONWEALTH OF VIRGINIA

[signature]
Notary Public

My Commission Expires January 31, 2025
Registration 7241176

"Good Things Are Happening in Sussex County!"

Sussex County, Virginia

Planning and Zoning Department

NOTICE: THE ATTACHED CHECKLIST MUST BE COMPLETED, CERTIFIED, AND SUBMITTED OR THE APPLICATION WILL BE CONSIDERED INCOMPLETE.

Remit Application to: Sussex County Planning Department, 20135 Princeton Road, P. O. Box 1397, Sussex, Virginia 23884

FOR OFFICE USE ONLY:

Complete Application Received On:______________________ Fees Paid: ______________

Tax Query: [ ] Current [ ] Delinquent Distribution Date: ______________

Posted/Date to Post: ______________

AGENCIES REFERRALS:

______Department of Environmental Quality
______Finance
______Industrial Development Authority
______County Administration
______Public Safety
______Health Department
______VDOT
______Commissioner of the Revenue
______Sussex Service Authority

______Building Inspections
______Sheriff's Office
______Town of Jarratt
______Town of Waverly
______Town of Stony Creek
______Town of Wakefield
______Schools
______County Attorney
______Other______________

Verified By:______________________________ Date: ______________

PHASE I ARCHAEOLOGICAL SURVEY

Project Freedom Site
Sussex County, Virginia

MARCH 2024

Dewberry

SUBMITTED BY
Dewberry Engineers Inc.
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Phase I Archaeological Survey

Project Freedom Site

Sussex County, Virginia

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Prepared For:
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Submitted By:
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March 2024

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ABSTRACT

Chaney Enterprises (Chaney) proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the town of Stoney Creek in Sussex County, Virginia (the Project). This report consists of a Phase I Archaeological Survey prepared by Dewberry Engineers Inc. (Dewberry) on behalf of Chaney consistent with the Virginia Department of Historic Resources (DHR) *Guidelines for Conducting Historic Resources Survey in Virginia* (2011, rev. 2017). This Phase I Archaeological Survey was conducted as part of a Sussex County Planning and Zoning Department re-zoning application. This Phase I Archaeological Survey was prepared on behalf of Chaney for due diligence purposes. This study consists of a Phase I Archaeological Survey and evaluates the Project area for the presence or absence of archaeological resources in areas of proposed Project-related ground disturbance.

The Phase I Archaeological Survey consisted of background research, archaeological sensitivity modeling, a pedestrian reconnaissance and photo-recordation of the APE, and a systematic surface and subsurface survey of the discontinuous APE. Evaluating the research material identified portions of the APE with high, moderate, and low sensitivity for pre-contact archaeological resources and high and low sensitivity for historic archaeological resources. Phase IB archaeological survey identified a total of 10 new archaeological sites, including one historic site and nine pre-contact sites. In addition, five isolated finds were identified within the APE. As isolated finds do not qualify as archaeological sites per DHR standards (DHR 2011, rev. 2017), no further archaeological investigations are recommended for the isolated find locations.

Site 44SX0484, located in the North Pit APE, consists of an approximately three-acre historic artifact scatter identified through systematic surface survey and judgmental shovel testing. Site 44SX0484 corresponds to a map documented structure at the location from 1919 through 1976 and includes both a low-density artifact scatter within an agricultural field and two historic/recent bottle dumps nearby. Given a high level of disturbance due to demolition and plowing, and as the bottle dumps will not yield significant new information about the site, the research potential of Site 44SX0484 has been exhausted following Dewberry's Phase IB survey. Site 44SX0484 is recommended not eligible for listing in the National Register at the Phase I level; no further archaeological work is recommended at the site.

Nine sites in total, Site 44SX0485 through Site 44SX0493, located in the southeastern, eastern, and northeastern extents of the South Pit APE, are isolated pre-contact lithic scatters identified through shovel and radial testing. Site 44SX0485 and Site 44SX0492 are dated to the latter parts of the Middle Archaic Period (c. 6,200-5,000 BP) and Late Woodland Period (c. 1400-1500 BP), respectively. The remaining seven sites are not temporally diagnostic within the pre-contact period. Each site was identified within intact soil stratigraphy corresponding with the known pedon for the South Pit APE; therefore, Site 44SX0485 through Site 44SX0493 are assumed to be intact and potentially contain multiple cultural horizons spanning the pre-contact period. In addition, the preponderance of lithic scatter sites on upland terraces close to the confluence of Sappony Creek and Rocky Branch Creek indicate a clear preference for the landform. Artifact analysis suggest primary reduction of local quartzite sources, potentially sourced within or near the sites. Site 44SX0485 through Site 44SX0493 have potential significance but are unevaluated for inclusion in the National Register at the Phase I level.

Following field identification of Site 44SX0484 through Site 44SX0493 and discussion with the Dewberry archaeology team, Chaney has revised project designs to avoid impacts to Site 44SX0485 through Site 44SX0493. Chaney will proceed carefully during quarry excavation and clearly delineate the sites with physical barriers erected along the site boundary to prevent accidental disturbance. Chaney will establish a 25-foot boundary away from the defined limits of the archaeological sites to avoid potential disturbance to artifact bearing soils during construction of the Project. Given the establishment of avoidance areas and

redesign of the project to avoid the identified archaeological sites and Site 44SX0484's recommendation as not eligible for inclusion in the National Register, the Project as designed will have no effect on historic properties eligible for listing in the National Register. No further archaeological work is recommended for the Project.

Summary of Historic Resources

Site No.	Type	Potential Sig.	Potential Effect	Recommend.
44SX0484	Historic Artifact Scatter	No	Yes	Not Eligible
44SX0485	Middle Archaic Lithic Scatter	Yes (D)	No	Further Survey
44SX0486	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0487	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0488	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0489	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0490	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0491	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0492	Late Woodland Lithic Scatter	Yes (D)	No	Further Survey
44SX0493	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey

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1.0 INTRODUCTION

1.1 Project Purpose

Chaney Enterprises (Chaney) proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia (the Project). The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95 (I-95) (**Figure 1**). This report consists of a Phase I Archaeological Survey prepared by Dewberry Engineers Inc. (Dewberry).

This Phase I Archaeological Survey was conducted as part of a Sussex County Planning and Zoning Department re-zoning application. This Phase I Archaeological Survey was prepared on behalf of Chaney for due diligence purposes. This study consists of a Phase I Archaeological Survey, including an archaeological sensitivity assessment, pedestrian reconnaissance, and Phase IB surface and subsurface survey, and evaluates the Project area for the presence or absence of archaeological resources in areas of proposed Project-related ground disturbance.

This Phase I Archaeological Survey was conducted in accordance with the Secretary of the Interior's *Standards and Guidelines for Archeology and Historic Preservation* (48 FR 44716; NPS 1983) and the Virginia Department of Historic Resource's (DHR) *Guidelines for Conducting Historic Resources Survey in Virginia* (2011, rev. 2017).

1.2 Project Description and Area of Potential Effects

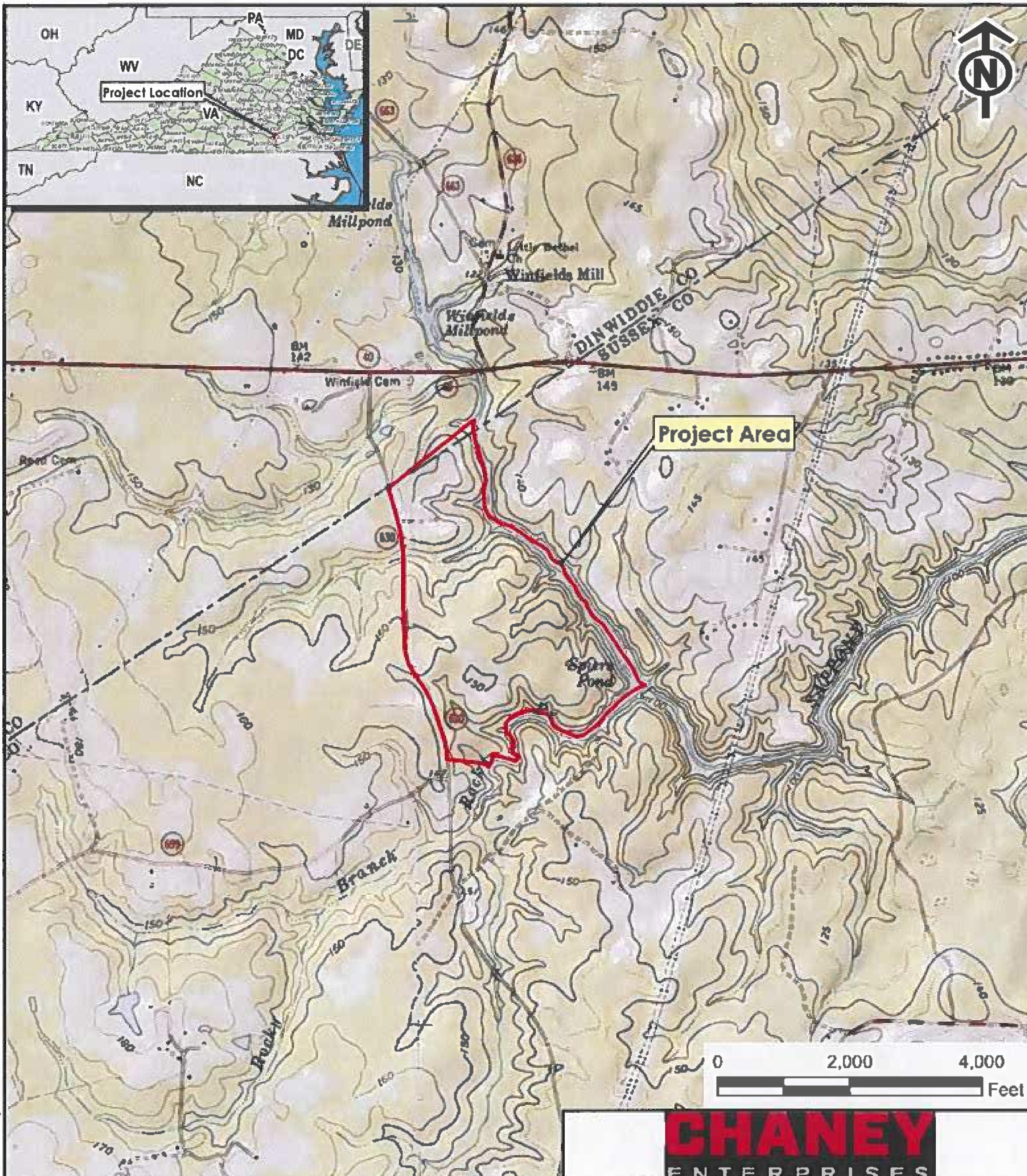
The Project will consist of the excavation of two discontinuous quarry pits, known as the North Pit and South Pit, within one parcel east of Little Mill Road (SR 630) south of its intersection with McKenney Highway (SR 40). In addition, a quarry processing facility will be constructed immediately north of the North Pit and east of Little Mill Road (SR 630).

1.2.1 Area of Potential Effects

The Area of Potential Effects (APE) is defined in 36 CFR Part 800.16[d] as:

> The geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.

The APE was established in consultation with Chaney following DHR *Guidelines for Conducting Historic Resources Survey in Virginia* (2011, rev. 2017).



CHANEY ENTERPRISES

PROJECT LOCATION

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1 " = 2,000 '

DATE: March 2024

Dewberry

FIGURE 1

LEGEND

Project Area

Source: USGS 7.5' Quad, Cherry Hill and Stony Creek, VA, 2013

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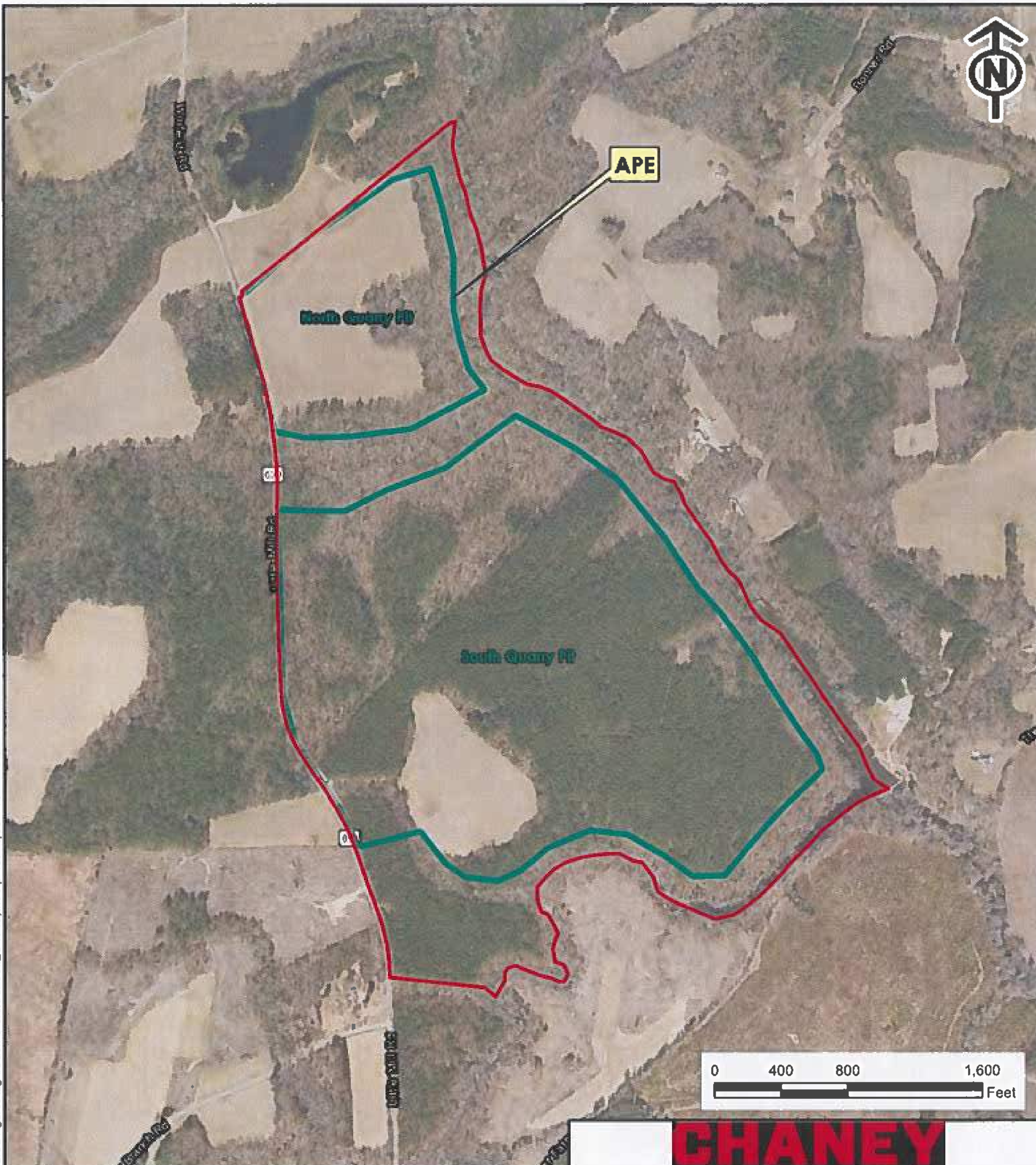
1.2.2 Archaeological APE

The Archaeological APE is defined as the limits of potential ground disturbance. The APE consists of two, discontinuous areas known as the North Pit and South Pit. The 36-acre North Pit APE contains the proposed North Pit excavation area and quarry processing facility. The North Pit APE contains primarily agricultural land with some forest. The South Pit APE contains the larger proposed excavation pit and measures approximately 140 acres. The South Pit APE contains mostly agricultural pine stands with some mixed hardwood forest. A small agricultural field is located within the southeast extent of the South Pit APE. Both APE areas also include unimproved access roads, staging areas, and driveways originating from Little Mill Road (SR 630). The APE is bounded by Sappony Creek to the east, Rocky Branch Creek to the south, Little Mill Road (SR 630) to the west, and the Dinwiddie-Sussex county line to the north (**Figure 2**).

1.3 Project Personnel and Schedule

Background research, research design, archaeological sensitivity analysis, and report preparation for the project was performed by Michael Navarro, RPA. Pedestrian reconnaissance of the project area was performed by Mr. Navarro on June 14, 2023. Archaeological fieldwork beginning February 19, 2024 was led by Mr. Navarro and completed by William Miller, Danielle Smith, Ido Kadouri, Joseph Farenski, David Villa, Amelia Potetz, Julia Drozdowski, and John Robinson. Report graphics were completed by Ashton Mook, GIS Professional; technical editing and formatting were provided by Dewberry Technical Writer Samantha Condo. Dewberry's Cultural Resources Discipline Lead Zachary Davis, RPA served as Project Manager and completed the project's Quality Assurance review.



CHANEY ENTERPRISES

AREA OF POTENTIAL EFFECT (APE)

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 800'

DATE: March 2024

Dewberry

FIGURE 2

LEGEND

Project Area

APE

Source: Virginia Geographic Information Network (VGIN). 2022

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2.0 METHODOLOGY

This Phase I Archaeological Survey is designed to identify the presence or absence of Pre-European Contact (pre-contact) and/or historic cultural resources within the APE. If archaeological resources are identified, the study would then evaluate the size and boundaries of identified archaeological sites and assess the need for further investigations in the form of a Phase II survey/site identification. This archaeological survey consists of background research, photo-documentation, an archaeological sensitivity analysis, and a surface and subsurface survey. The purpose of the background research was to develop a site-specific land-use history of the property in which identified materials or sites could be interpreted. Photo-documentation recorded the present conditions of the project site. The sensitivity assessment utilized ESRI ArcView GIS software to model environmental variables to identify areas of high, moderate, and low archaeological sensitivity within the APE and contributed to the testing strategy. The surface and subsurface survey was designed to identify the presence or absence of pre-contact or historic-period archaeological resources and estimate the size and boundaries of the resources, if found.

2.1 Archaeological Survey

2.1.1 Background Research

Background research conducted in May and June 2023 began with a review of archaeological site files, known historic property, and cultural resource report research using the DHR's online Cultural Resource Information System (V-CRIS). V-CRIS was consulted to identify known archaeological sites within one mile of the APE to characterize what archaeological resources may be expected within the area. This research included a review of state-sponsored surveys and site records available through V-CRIS. Prior historic period land-use was also researched through a review of historic maps, local histories, and primary and secondary sources. Additional research was undertaken online and in-person through the Library of Congress, the Library of Virginia, the Sussex County Historical Society, genealogical resources such as Ancestry.com, and local deeds and plat maps. Online historic aerial photography from the United States Geological Survey (USGS) and National Environmental Title Research (NETR) was reviewed.

Past archaeological studies have identified a certain degree of correlation between specific environmental elements and the location of human activities across a landscape (Greenhorne & O'Mara 2008; Thunderbird 2018; Dutton 2019; TRC 2021). As a result, a comprehensive analysis of the environmental elements can be used to predict locations more likely to preserve pre-contact and historic archaeological remains. Prediction of pre-contact site potential is based upon the geographic setting, pre-contact settlement models within the Middle Atlantic region, and general knowledge derived from previous archaeological research. The background research contributed to the GIS Model to create areas of high, moderate, and low archaeological sensitivity within the APE. The GIS Model and sensitivity assessment are presented in Chapter 7.

2.1.2 GIS Model

A GIS Model was developed to identify areas of high, moderate, and low archaeological sensitivity within the APE. The model utilized ESRI ArcView GIS software to display a shapefile of the APE. Recent aerial imagery derived from the Virginia Geographic Information Network (VGIN) Online GIS Clearinghouse was used as a basemap. The model evaluated the APE with respect to archaeological sensitivity variables including distance to water, distance to known archaeological sites, slope, level of disturbance, soil drainage, and mapped historic structures.

To ascertain proximity to water sources and known archaeological sites, the GIS Model reviewed USGS 7.5-minute series quadrangle maps Stony Creek and Cherry Hill (USGS 2019a, 2019b) and V-CRIS Online GIS feature data. The model also included soil data from the Natural Resources Conservation Service's (NRCS) Websoil Survey and estimated level of past disturbance through historic aerial imagery. LiDAR (Light Detection and Ranging) LASer (LAS) data derived from the publicly accessible National Oceanic and Atmospheric Administration's (NOAA) 2014 USGS Coastal and Marine Geology Program (CMGP) Post-

Hurricane Sandy flyover were reviewed for data on elevation, slope, unmapped drainages or access roads, and landscape features (OCM Partners 2014). The model also evaluated potential historic development through a review of georeferenced historic maps of the area.

The predictive model identified areas of high, moderate, and low pre-contact or historic archaeological sensitivity within the APE. Ultimately, areas assessed with high or moderate archaeological sensitivity for pre-contact or historic resources were isolated for archaeological testing. Low archaeological sensitivity areas were isolated for systematic pedestrian reconnaissance. The sensitivity areas were then used to inform the Phase IB testing plan. The GIS Model, sensitivity assessment, and Phase IB testing plan are presented in Chapter 7.

2.1.3 Pedestrian Reconnaissance

Dewberry personnel conducted pedestrian reconnaissance of the APE in June 2023. The reconnaissance documented existing conditions including current vegetation, areas of evident disturbance, slope, standing water, and/or surface features. This information further refined the subsurface survey by eliminating testing areas due to standing water, high slope, or clear ground disturbance. Chapter 6 presents a brief summary of the site visit. Photo-recordation of the APE was also conducted during pedestrian reconnaissance.

2.1.4 Phase IB Archaeological Investigation

Phase IB archaeological testing was conducted in February and March 2024. Field methods were based on conventional archaeological methods used throughout the Middle Atlantic region and the general requirements of the DHR. The Phase IB archaeological field methodology and sampling strategy were designed to identify the presence and/or absence of archaeological resources within the APE. In doing so, the methodology set out to identify and describe previously unknown archaeological resources; delineate vertical and horizontal disturbances; and obtain sufficient information regarding the stratigraphic and overall archaeological integrity of identified archaeological resources.

Phase IB archaeological field methods consisted of:

- visual inspection (via walkover survey) of the APE and its vicinity;
- review of one-call utility mark-outs;
- shovel testing consisting of linear transects of 15-inch diameter holes plotted within a 50-foot, or exactly 15-meter, interval grid, where possible, across the APE;
- recording of exposed soil profiles;
- systematic surface survey of recently plowed agricultural fields at 15-meter (50-foot) interval transects; and,
- complete mapping and recording of excavations and transects (conducted on-site at the time of survey). Mapping activities were conducted using a mapping grade Trimble Global Positioning Satellite (GPS) device, a Trimble Geo7X. The GPS device provided sub-meter real-time accuracy while postprocessing the field data provided sub-foot accuracy of the field collected survey data.

Excavations (shovel tests) were completed by hand and extended into subsoil; a rock, root, or compact impasse; or within at least 10 centimeters (four inches) of sterile soil. The excavated soil from each shovel test was passed through ¼-inch mesh screening to ensure uniform recovery of cultural material.

Shovel tests were placed within the APE at 15-meter (approximately 50-foot) spacing. The profiles of the excavated shovel tests are presented in **Appendix B**. Radial tests were conducted around shovel tests containing pre-contact material and/or significant historic deposits without adjacent positive shovel tests. Radial tests were placed along cardinal directions where possible at about 7.5 meters (25 feet) from the positive test. Radial tests were assigned labels referencing the label of the original positive test and reflecting the distance in meters and cardinal direction of the radial test. Radial testing was conducted to determine the potential isolation and/or vertical and horizontal extent of exposed cultural deposits.

2.1.5 Laboratory Analysis

Curation and laboratory procedures followed DHR guidelines set forth in the *Guidelines for Conducting Historic Resources Survey in Virginia* (DHR 2011, rev. 2017). Artifacts recovered from the Phase IB were washed, inventoried, cataloged, and labeled (**Appendix C**).

Artifact analysis and interpretation consisted of basic identification of morphological type, temporal types, and basic functional classification and interpretation. Artifacts were identified and inventoried by raw material (glass, plastic, ceramic, etc.), functional group (domestic, architectural/landscape, funerary, etc.), general class (brick, fastener, hardware, etc.), type (wire nail, beer/soda bottle, etc.), description, and chronology. The chronology of historic artifacts was determined from previous material studies and standardization texts such as Jones and Sullivan 1989, Horn 2005, Lindsey 2024, the Florida Museum 2024, and the Maryland Archaeological Conservation Lab 2010. Where applicable, chronological dates for pre-contact lithics would be derived from previous material studies, including but not limited to Coe (1964), Adams (2013), and Custer (1990).

3.0 ENVIRONMENTAL SETTING

3.1 Physiography

The APE is located at the western limit of the Inner Coastal Plain Physiographic Province (VDCR 2021). The Inner Coastal Plain consists of a broad, sandy upland bounded on the west by the Outer Piedmont, and on the east by the Outer Coastal Plain. The APE falls within the 20-mile (32-kilometer) wide Fall Zone, where the hard bedrock of the Piedmont transitions to the younger, sandy sediments of the Coastal Plain. The dominant topography of the Inner Coastal Plain is flat with gentle to rugged ravines cut by streams and rivers. Coastal Plain relief is low with average elevations ranging from 200 feet above sea level (asl) (about 61 meters asl) down to sea level. Relief within the APE is low; elevations generally range from 100-160 feet asl (30.5-48.8 meters asl). Elevations are generally highest at the central-western limit of the proposed South Pit portion of the APE along Little Mill Road (SR 630) and lowest on the eastern and southern APE limits near Sappony Creek and Rocky Branch Creek, respectively.

3.2 Hydrology

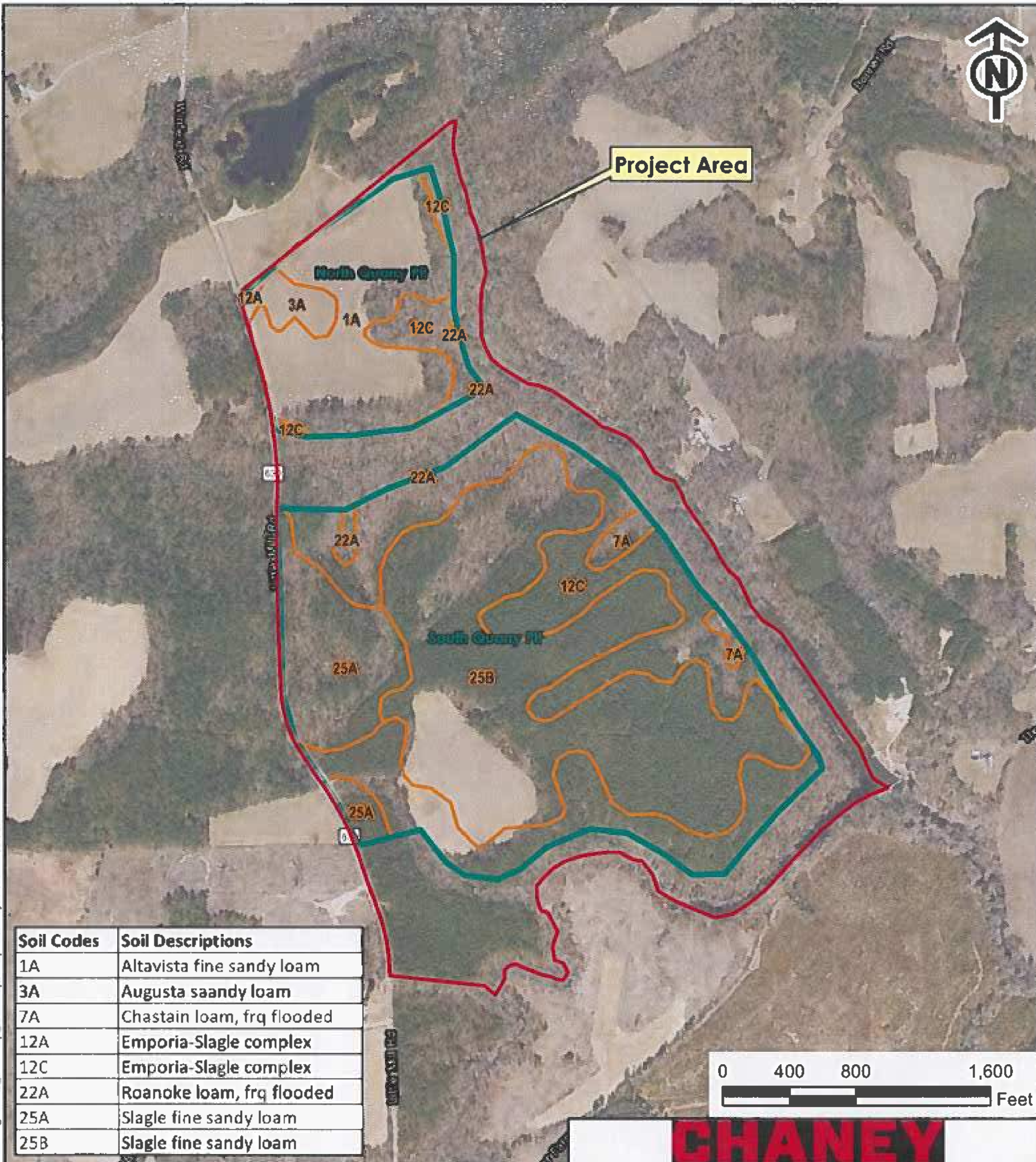
The APE is located in the Chowan Watershed and is drained by Sappony Creek and Rocky Branch Creek (VDCR n.d.). Sappony Creek forms the eastern border of the APE, while Rocky Branch Creek forms the southern border. Rocky Branch Creek drains from west to east into Sappony Creek southeast of the APE. Sappony Creek is dammed approximately 438 feet (133.5 meters) southeast of the APE limit; the resulting pond borders the southeast corner of the APE and is known as Spier's Pond. No water bodies are located within the APE. Downstream of the dam, Sappony Creek proceeds in a westerly direction to merge with Stony Creek near the Town of Stony Creek. West of the Town of Stony Creek, Stony Creek drains into the Nottoway River. The Nottoway River then winds southeast to drain into the Chowan River near the North Carolina-Virginia state line. The Chowan continues south to empty into the Albemarle Sound and Atlantic Ocean.

3.3 Geology

Uniquely for the Coastal Plain, the APE is entirely underlain by Petersburg Granite bedrock. A finger of Petersburg Granite extends from the Piedmont into the Coastal Plain below the APE; the APE is surrounded by Coastal Plain sandy soils to the north and south. Petersburg Granite dates to the Mississippian Geologic Period and consists of gray to pink, fine to coarse-grained granite and granodiorite. Inclusions consist of smokey-gray quartz, plagioclase, and potassium feldspar. Bedrock is encountered around 30-40 feet (9.1-12.2 meters) below ground surface (bgs) within the APE (Weems, Schindler, and Lewis 2010; Virginia Energy 1993). Surficial geology of the APE includes Bacon's Castle Formation extending to about 25 feet bgs (7.6 meters bgs) above a layer of Yorktown Formation from about 25-30 feet bgs (7.6-9.1 meters bgs). Bacon's Castle Formation dates to the Pleistocene and consists of upward-fining quartz/quartzite gravel and fine sand. Basal gravel consists of pebbles, cobbles, and boulders. Yorktown Formation dates to the Pliocene and consists of an upward-fining sequence of gravel, sand, and silt. Basal gravel is composed of rounded to sub-rounded pebbles of smokey-gray and orange quartz and ironstone resting on bedrock (Weems, Schindler, and Lewis 2010; Carter et al 2022).

3.4 Soils

According to the NRCS Websoil Survey, there are six soil types within the APE (**Figure 3**; **Table 1**). Most of the APE (48.6%) contains variants of Slagle Fine Sandy Loam (25A, 25B). These soils are well drained and generally have slopes from zero to two percent in the 25A variant and two to six percent in the 25B variant. The 25B variant is the most common within the APE. Variants of Emporia-Slagle Complex (12A, 12C) are also found within the APE (32.4%). These soils are well drained and feature slopes of zero to two percent (12A) and six to 10 percent (12C). The 12C variant was the most common of these soils in the APE. Altavista Fine Sandy Loam (1A) is the other major soil type within the APE (15.6%).



Soil Codes	Soil Descriptions
1A	Altavista fine sandy loam
3A	Augusta saandy loam
7A	Chastain loam, frq flooded
12A	Emporia-Slagle complex
12C	Emporia-Slagle complex
22A	Roanoke loam, frq flooded
25A	Slagle fine sandy loam
25B	Slagle fine sandy loam

LEGEND

- Project Area
- APE
- Soil Designations

Source: Virginia Geographic Information Network (VGIN), 2022
Soil data derived from Web Soil Survey, NRCS, USDA, 2023.

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SOILS WITHIN THE APE

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 800' DATE: March 2024

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FIGURE 3

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Table 1: Mapped Soil Types within the APE[1]

Soil Type	Horizon	Depth (inches)	Soil Color	Soil Texture	Slope (%)	Drainage
Slagle Fine Sandy Loam (25A, 25B)	Ap	0-9	Pale Brown	Fine Sandy Loam	0-2 (25A), 2-6 (25B)	Well Drained
	Bt1	9-14	Yellowish Brown	Loam		
	Bt2	14-20	Yellowish Brown	Clay Loam		
	Bt3	20-30	Yellowish Brown	Clay Loam		
	Bt4	30-55	Yellowish Brown	Sandy Clay Loam		
	C	55-66	Yellowish Brown	Sandy Clay Loam		
Emporia-Slagle Complex (12A, 12C)	Ap	0-6	Pale Brown	Loamy Fine Sand	0-2 (12A), 6-10 (12C)	Well Drained
	E	6-15	Pale Brown	Fine Sandy Loam		
	Bt1	15-32	Yellowish Brown	Sandy Clay Loam		
	Bt2	32-44	Yellowish Brown	Clay Loam		
	Bt3	44-57	Yellowish Brown	Sandy Clay Loam		
	C	57-70	Yellow and Red	Sandy Clay Loam		
Altavista Sandy Loam (1A)	Ap	0-8	Grayish Brown	Fine Sandy Loam	0-2	Well Drained
	E	8-12	Pale Brown	Fine Sandy Loam		
	BE	12-15	Brownish Yellow	Sandy Clay Loam		
	Bt1	15-20	Yellowish Brown	Clay Loam		
	Bt2	20-35	Yellowish Brown	Sandy Clay Loam		
	BC	35-42	Brownish Yellow	Sandy Loam		
	C	42-60	Motlled Yellowish Brown	Coarse Sandy Loam		
Augusta Sandy Loam (3A)	Ap	0-9	Brown	Loam	0-2	Poorly Drained
	Bt	9-19	Pale Brown	Sandy Clay Loam		
	Btg1	19-24	Light Brownish Gray	Clay Loam		
	Btg2	24-52	Light Brownish Gray	Clay Loam		
	Btg3	52-60	Gray	Sandy Clay Loam		
	Cg	60-70	Gray	Coarse Sandy Loam		
Chastain Loam (7A)	A	0-5	Dark Grayish Brown	Loam	0-2	Poorly Drained
	Bg1	5-10	Light Brownish Gray	Clay Loam		
	Bg2	10-30	Gray	Clay		
	Bg3	30-52	Gray	Clay		
	1Cg	52-72	Gray	Sand		
Roanoke Loam (22A)	Ap	0-7	Dark Grayish Brown	Silt Loam	0-2	Poorly Drained
	Btg1	7-12	Gray	Silty Clay Loam		
	Btg2	12-20	Gray	Clay		
	Btg3	20-40	Gray	Clay		
	BCg	40-50	Light Brownish Gray	Silty Clay Loam		
	2Cg	50-72	Gray	Sand to Clay		

[1]*NRCS, National Cooperative Soil Survey Soil Characterization Database.*

Altavista Fine Sandy Loam is well drained with zero to two percent slope. Less commonly mapped soils within the APE (3.4%) include equal parts Augusta Sandy Loam (3A), Chastain Loam (7A), and Roanoke Loam (22A). These soils are poorly drained and have slopes less than two percent.

3.5 Climate, Flora, and Fauna

Sussex County is located in the southeast part of Virginia; its climate is characterized as cold in the winter with hot summers. The highest average daily temperatures occur in July and August, the lowest average daily temperatures occur in January and February. Rainfall is generally greatest in July and August and lowest from October to November. Hurricanes pass inland occasionally between June and November and bring extremely heavy rains and flooding. The length of the growing season is about 193 days (NOAA n.d.; Hessler 2019).

At the time of European Contact with indigenous peoples, the Coastal Plain of Virginia was characterized by predominantly oak-pine forests dominated by longleaf pine, scrub oak, pond pine, cypress, and some white cedar (Braun 1959:259). The Inner Coastal Plain south of the James River generally contained pine-oak sandhills, pine woodlands, and cypress-tupelo swamps, and peatland (VDCR 2021). At the time of European Contact, the principal animal species in the Coastal Plain of Virginia included white-tailed deer, bobcat, black bear, beaver, cottontail rabbit, gray squirrel, opossum, woodchuck, muskrat, raccoon, mink, and red and gray fox. There were also bird species including wild turkey, woodcock, ruffled grouse, and mourning dove, along with a wide variety of fish and freshwater shellfish available in the local waterways (Thunderbird 2021).

4.0 CULTURAL CONTEXTS

4.1 Pre-Contact Overview

Archaeologists typically organize the pre-contact occupation of Virginia into three broad time periods: the Paleo-Indian, the Archaic, and the Woodland (Egghart 2020a; Egloff and Woodward 2006). These periods establish a heuristic framework within which to frame the human occupation of the area prior to European colonization. There is debate regarding the timing of the earliest human populations within North and South America. Most contemporary scholars believe that Paleo-Indian groups began slowly expanding into the area during a period from 21,700 to 34,000 years ago. Sites consistent with this interpretation, with components dating to over 12,000 years ago, have been found on both American Continents. The Archaic and Woodland periods are generally further divided into Early, Middle, and Late sub-periods. The pre-contact chronology in Virginia ends around 1607 CE with the earliest records of European contact with indigenous peoples.

4.1.1 Paleo-Indian Period (17,000-10,000 BP)

The Paleo-Indian Period is often differentiated into two phases—Pre-Clovis and Clovis. The Pre-Clovis phase occurs before 13,000 BP[1] and is associated with the earliest human occupations in the Western Hemisphere. During this period, glaciers covered the Northern U.S., while Virginia was characterized by expanding oak-hickory forests south of Richmond, and cooler boreal forests and grassy environments to the north. The Appalachian Mountains contained open, tundra-like environments; the Shenandoah Valley may have supported grasslands, conifer forests, and occasional deciduous trees. Unlike today, the continental shelf was exposed for much of the Paleo-Indian, creating a wide, sandy plan dotted with tidal pools and waterways. The Chesapeake Bay likely resembled a deep river valley prior to sea level rise around 10,000 BP. Animal populations consisted of megafauna species including wooly mammoths, mastodons, horses, camelids, bison, musk ox, elk, ground sloth, moose, deer, caribou, short-face bear, and dire wolves. The environment also supported smaller mammals and a variety of nuts and berries (Boyd 2020; Edwards and Merrill 1977; Turner 1989; Egloff and Woodward 2006).

The Clovis Phase of the Paleo-Indian Period is defined by the appearance of a distinctive stone tool technology circa 13,100 BP. The tool consisted of a long, fluted point, which is found at sites throughout North America. These points were generally constructed of high-quality crypto-crystalline materials suggesting that Clovis populations deliberately exploited particular lithic sources. Stone tools other than Clovis points associated with this time include simple flake knives and scrapers, long narrow blades, and leaf-shaped tools (Turner 1989; Egloff and Woodward 2006). Higher relative concentrations of Paleo-Indian points in the southern Virginia counties of Mecklenburg and Dinwiddie mark the rough northern boundary of the warmer oak-hickory forest, indicating possible Paleo-Indian reliance on this ecotone. A total of 24 Paleo-Indian sites are registered in Sussex County within V-CRIS (V-CRIS 2023; Turner 1989:79).

Possibly reflecting low population levels, Paleo-Indian peoples in Virginia organized into macro-bands numbering 175 to 475 individuals that moved to exploit natural resources. Turner suggests at least three macro-bands were operating in Virginia during the Clovis Phase (1989:79). Studies have documented recurring use of high-quality lithic sources and wide-range foraging from a central "base camp" location. Several examples of Paleo-Indian short-term occupation sites are found in Sussex County, including Cactus Hill, Nottoway Archaeological Site, and Blueberry Hill. The Cactus Hill site, located in Sussex County about 10 miles northeast of the APE within a sand dune on the Nottoway River, contains highly significant pre-Clovis and Clovis components. Major excavations beginning in 1993 have produced the first securely dated Clovis feature in Virginia. In addition, more recent work has identified intact pre-Clovis occupation levels at Cactus Hill and provided the earliest Paleo-Indian absolute dates circa 17,650 BP (Boyd 2020). Sussex

[1] Before the present, with the present defined as 1950 A.D. given most archaeological dates are established by radiocarbon dating and 1950 represents the beginning of the Atomic Era and the prolific release of radioactive material into the atmosphere.

County continues to host the majority of current Paleo-Indian research in Virginia with a particular focus on sites along the Nottoway River (Boyd 2020).

4.1.2 Archaic Period

By 10,000 BP, the climate had warmed, and regional vegetation was slowly changing. The open forest or tundra of the Paleo-Indian Period was gradually replaced by oak-hickory forest. Deciduous trees, including pine, oak, and hickory species migrated from the south. Human population sizes increased throughout the Archaic Period. The technology and culture of the Archaic period groups appear to have evolved in response to increasing population density and environmental changes (Egloff and Woodward 2006).

4.1.2.1 Early Archaic Period (10000-8500 BP)

Early Archaic period peoples appeared to follow a mobile seasonal round similar to that of Paleo-Indian populations until around 9000 BP. An increasingly productive oak-hickory forest coupled with rising sea levels created vibrant marshlands and coastlines. These new environments influenced subsistence strategies which incorporated smaller mammals, birds, fish, and abundant fruit, acorns, and hickory nuts. Population density began to increase. Fluted point-technology was replaced by a preference for side and corner-notched bifaces, along with bifurcated notched-stem points. Typical points of the period include Palmer, Amos, Kirk, Warren, Big Sandy, Kessell, and Kirk Stemmed. Tools were more frequently constructed of lower quality local stone such as quartzite, suggesting that lithic sources were not as important in settlement patterns as in the Paleo-Indian (Barber 2020; Custer 1990; Hunter and Higgins 1985; Egloff and Woodward 2006).

Early Archaic populations are believed to have been mobile hunter-gatherers organized into egalitarian bands of 25 to 50 people with a strong economic and social emphasis on hunting and lithic reduction. These smaller bands may have gathered into macro-bands on a seasonal or ceremonial basis. Archaeological sites from this period are generally small ephemeral assemblages with chipped stone tools reflecting temporary campsites. In addition to projectile points, such lithic deposits include bifacial knives, end scrapers, and spokeshaves for working bone. Sites dating to this period are often dispersed and small. The few Early Archaic large sites are typically associated with specific resource locations including rivers, terraces, streams, and lithic sources. These sites have been interpreted as multiple sequential short-term occupations as opposed to a single long-term occupation (Barber 2020; Custer 1985).

The Fall Zone was a critical travelway for Early Archaic mobile bands. Concentrations of Early Archaic sites in Sussex County are significantly higher than in counties to the east or west. Traversing the Fall Zone would allow access to a variety of seasonal resources spread across several major drainages. The Cactus Hill site in Sussex County contains important Early Archaic components (Barber 2020).

4.1.2.2 Middle Archaic Period (8500-4500 BP)

The Middle Archaic is associated with an increase in base and temporary campsites as well as more efficient exploitation of the eastern woodland environment. The oak-hickory forest provided exploitable resources including walnuts, hickory nuts, acorns, berries, and seeds and supported a variety of bird and small mammal species. The Middle Archaic is marked by changes in material culture and technology reflective of environmental changes. A wider variety of lower-quality lithic materials and a broader tool kit are associated with this time. Distinct tool types identified with the Middle Archaic include the atlatl, bifurcated-base spear points, stemmed points, corner-notched, and side-notched points. LeCroy, Stanley, Neville, Guilford, Merrimack, Morrow Mountain, Halifax, and Brewerton-type points are associated with the Middle Archaic. Other lithic tools often recovered from Middle Archaic sites in Virginia include mortars and pestles, chipped stone axes, net sinkers, and other spear points (Custer 1990:26, 34-36; Egloff and Woodward 2006).

In general, the Middle Archaic is poorly understood as relatively few sites dating to this period have been identified within Virginia. Nevertheless, based on available site data, Custer has suggested that there were three major site types within the Middle Archaic settlement system in the Mid-Atlantic. These sites included large macro-band base camps where multi-family groups gathered for periods of time, smaller micro-band camps associated with fissioned family units, and resource procurement sites where specific resources were exploited and obtained (Custer 1985:34; Egghart 2020b).

Cactus Hill in Sussex County was intensively occupied during the Middle Archaic. Ongoing aeolian sand deposition created several intact Middle Archaic floors where slab mortars, hammerstones, pitted cobble tools, and carbonized plant remains have been found alongside LeCroy, Kirk Serrated, Morrow Mountain, Guilford, and Halifax points. Additional surveys along the Nottoway River in Sussex County have documented an intensive use of the Fall Zone similar to the Early Archaic. Settlement pattern studies from Cactus Hill affirm the highly mobile nature of small, hunter-gatherer bands and suggest a preference for riverine settlements (Egghart 2020b).

4.1.2.3 Late Archaic Period (4500-3200 BP)

The Late Archaic Period is defined by an increase sedentism, long distance trade networks, intensification of resource exploitation, and general rapid cultural change at varying rates across space and time. Much of this change is thought to be related to stabilizing environmental factors; interior river valleys and the Chesapeake Bay fully developed during the Late Archaic. Evidence for fire-cracked rock and shell middens near estuaries and drainages indicates increased coastal populations. Larger, semi-sedentary camps appear along waterways throughout Virginia's lowlands and indicate increased sedentism. Long-distance trade networks and more intensive food resource exploitation also appear. A marked increase in site frequency suggests population growth and exploitation of new environments. This activity may include intentional manipulation of the local environment through fire. Several projectile point types associated with the latter part of the Middle Archaic persist into the Late Archaic such as Savannah River and Bare Island stemmed points. Additional diagnostic point types include the Fishtail, Piscataway, Perkiomen, Small Savannah River, Savannah River Narrow, Poplar Island, Lamoka, and Halifax (Egghard 2020c).

Late Archaic period sites reflect an intensified exploitation of a more localized territory. However, settlement was not uniform across Virginia. Riverine settlement was preferred, while Savannah River components are intensely concentrated along the Fall Zone. Late Archaic sites indicate that a greater variety of resources were used and that new technologies were developed to increase the efficiency of food gathering and processing. Broader forms of ground stone tools including axes, adzes, manos, and metates appear, potentially reflecting an early cultivation of sunflowers, gourds, sumpweed/marsh elder, maygrass, lamsquarter/goosefoot, and amaranth. Steatite vessel appear, indicating a preference for this material in long-distance trade. Net sinkers and other fishing tools also appear during this time. Food processing tools have been found in pit features at base campsites indicating the increasing importance of these sites and the growing reliance on plant food within the diet. Again, Nottoway River sites such as Cactus Hill provide extensive Late Archaic occupation levels (Klein and Klatka 1991; Egloff and Woodward 2006; Egghart 2020c).

4.1.3 Woodland Period

The Woodland Period is generally associated with two major developments—the widespread use of ceramic technology and the adoption of cultivating agricultural practices. Each of these developments is associated with increasing sedentism and the growing importance of base camps and defined territorial boundaries. The period terminates with the onset of European settlement in the Mid-Atlantic.

4.1.3.1 Early Woodland Period (3200-2500 BP)

Widespread early use of pottery is associated with the Early Woodland Period. The adoption of ceramic technology, which is heavy and would pose limitations for mobility, is associated with the increasing importance of base camps. Ceramic technology seems to have been imported into Virginia from peoples along the coast of Georgia and South Carolina. In these areas, the earliest pottery dates to at least 4500 BP. Early pottery vessels imitated earlier soapstone vessels (Egloff and Woodward 2006).

Ceramics in this period were tempered by steatite, grog, or more rarely fabric/grog-and-sand. Diagnostic ceramics from this period include Bushnell Ware, consisting of coiled pottery with a smooth surface crafted of compacted paste and tempered with schist, rog, fiber, steatite, shell, and bone. Bushnell Ware is roughly dated to 2950 BP. Marcey Creek Ware, a coil-constructed ceramic tempered with steatite, is also distinctive of the Early Woodland, dating to between 3200 and 2800 BP. Marcey Creek-type vessels generally consist of rectangular or oval shallow bowls with flat bases and protruding basal heels, lug handles, and straight sides. Croaker Landing Ware, dating between 3200 and 2800 BP, was first identified in York County, and consists of both plain and cord-marked types tempered with subangular clay particles. Vessels are reminiscent of carved soapstone vessels (Egloff and Potter 1982).

The Early Woodland saw a reduction in biface production when compared to the Late Archaic. In addition, Early Woodland sites demonstrate a shift towards locally sourced toolstone. Cutting lithics were produced more expediently without the use of bifacial sharpening. Some Broadspear-derived bifaces continue to appear, along with a host of ground stone tools first developed in the Late Archaic. Calvert, Piscataway, Small Stemmed, Badin, Small Savannah River, Fishtail and Susquehanna points are among the diagnostic lithics of the Early Woodland (Dent 1995:229; Egghart 2020d).

Settlement pattern studies suggest a continued preference for riverine settings and increased preference for floodplains. The Fall Zone appears to have been an important travelway, as well as the Potomac, James, and Roanoke Rivers. Following this pattern, data available from the Ogle collection, recovered along the Nottoway River Fall Zone in Sussex County, has demonstrated unique Early Woodland concentrations in floodplains, swamp, and wetland settings (Egghart 2020d).

4.1.3.2 Middle Woodland Period (1500 BP – 1100 BP)

Until recently, the Middle Woodland Period in Virginia was poorly understood. Populations appear to have increased by the beginning of the period. A reliance on semi-sedentary camps within a foraging buffer-zone located on waterways also became more common. However, sedentism was not fully adopted, and seasonal migration was likely emphasized. The first smoking pipes, possibly suggesting the use of tobacco, date to the Middle Woodland. Stone weights for spear throwers, some ornamentally carved, and a variety of axes and adzes have also been recovered from sites dating to this period. The bow and arrow slowly replaced the spear by the end of the Middle Woodland. Typical projectile points associated with the Middle Woodland include Potts, Rossville, Teardrop, Vernon, Piscataway, Yadkin, Madison, Levanna, Jacks Reef, and Fox Creek (Egloff and Woodward 2006; Nash 2020).

Within portions of the northern Shenandoah Valley, this period is associated with the Stone Mound Burial culture. Sites associated with this phenomenon have been found on bluffs overlooking the floodplain. These sites are defined by low stone mounds containing individuals buried with great ceremony. Cultures such as these indicate an increasing pattern of hierarchy and class structure. Specialized pendants have been found at Middle Woodland sites in Virginia, indicating an increasing awareness of status and identity within a group (Egloff and Woodward 2006).

A higher relative concentration of Middle Woodland sites is found in Sussex County when compared to counties to the east and west, indicating a continued preference for Fall Zone habitation. Overall, Outer Piedmont and Coastal Plain counties tend to contain more Middle Woodland components than upland settings (Nash 2020; V-CRIS 2023).

4.1.3.3 Late Woodland Period (1100 BP -350 BP)

The Late Woodland Period is the most known pre-contact period within Virginia as it terminated with the beginnings of European settlement, roughly 350 BP or 1600 CE. Circa 1100 BP, permanent villages that were occupied year-round began to replace the semi-sedentary base camps of the Middle Woodland Period. Settled village life was supported in part by the adoption of agriculture and a growing reliance on cultigens including maize and squash. Late Woodland groups also continued to rely on wild food resources to supplement agricultural products.

In southwestern Virginia, the imported Mississippian Culture appeared; the Mound Builder Culture in the Shenandoah continued to thrive, and the Coastal Plain developed into a unique culture. Rank and status became increasingly important, marked by cyclical fluctuations in mortuary ceremonialism and long-distance trade of exotic artifacts. Exotic items were associated with high-status individuals; increasingly elaborate burial patterns indicated both a social acceptance of status and a focus on the afterlife (Hantman and Gold 2002; Egloff and Woodward 2006).

Sites dating to the Late Woodland are generally found on slightly elevated fertile terraces along rivers and streams. At the onset of the period, settlements consisted of simple farmsteads. Over time, the farmsteads were replaced by stockaded village sites. These villages were often large and were sometimes surrounded by a wall of posts. When soil lost productivity or the supply of firewood had been depleted, the village sites were typically moved and re-established in the near vicinity (McCann 1983).

Prior to the sixteenth century, tribes throughout the Chesapeake region had established trade routes along the Occaneechi Trail, an important route through the Virginia Piedmont and Coastal Plain. The trail connected tidewater, Shenandoah Valley, and North Carolina polities to the Siouan-speaking Saponi, Tutelo, and Monacan tribes at the Fall Zone (Callaway 2015; Horning 2004:21; Myer 1925). The Occaneechi Trail would later be utilized by European colonizers as they moved inland claiming the former Native American village sites that had been emptied by warfare, disease, or abandonment. Sappony Creek, bounding the APE, bears the anglicized name of the Saponi tribe.

4.1.4 Contact Period

During the Contact Period, the area which is now Sussex County was inhabited by the Nottoway people. Nottoway territory prior to European contact included present-day Southampton, Nottoway, Dinwiddie, Sussex, Surry, and Isle of Wight counties and largely followed the Nottoway River. Nottoway people in the Contact Period were an Iroquoian-speaking culture living west of the Fall Zone, similar to the nearby Meherrin and Tuscarora. These groups were closely interconnected; the Nottoway were also culturally linked to the Algonquian-speaking Powhatan east of the Fall Zone. Early ethnographic accounts indicate the Nottoway inhabited dispersed villages along the Nottoway River linked by culture, language, and famlilal ties (Briceland 2020; VDOE n.d.; RK&K 2020).

In the summer of 1607, John Smith and Christopher Newport, who had piloted the first ships to the newly established Jamestown as part of the Virginia Company's commercial ventures, traveled up the James River as far as the Fall Zone. Despite this early incursion into what would become Virginia, the Nottoway were largely unaffected. Smith's later explorations of the Nottoway River failed to reach Nottoway settlements in the vicinity of the APE. The first known contact between the Nottoway and Europeans would come in 1650, when explorer Edward Bland encountered Nottoway people along the lower Nottoway and Meherrin river valleys. Bland was joined by Abraham Wood, who hoped to gain new trading opportunities southwest of England's first settlements in Virginia. Bland likely sought landholdings in the Piedmont of what is today North Carolina (Briceland 2020; RK&K 2020; VDOE n.d.; Virginia Writers Program 1942).

Bland and Wood, joined by an Appomattoc guide, departed Fort Henry near present-day Petersburg on August 27, 1650 and proceeded southeast towards the Blackwater River. From the Blackwater, the party turned south, crossing over the lower reaches of the Nottoway and Meherrin rivers before turning back near present-day Roanoke Rapids, North Carolina. Along the way, Bland encountered and documented Nottoway villages for the first time. Bland estimated the Nottoway population to be no more than 400 to 500 individuals. The return trip may have taken the party through the Stony Creek area (Briceland 1979, 2020).

European settlement southeast of the Blackwater River lagged behind the explosive growth seen in the James River valley. European settlement of the remote backwaters south of the Blackwater increased after 1700, despite the 1677 Treaty of Middle Plantation which afforded land rights to the Nottoway. Following European incursions, the Nottoway population was forced to repeatedly relocate due to rampant European diseases and conflict with hostile tribes and encroaching English settlers. In 1713, the remaining Nottoway were forced onto a 40,000-acre land reserve stretching across present-day Southhampton and Sussex counties. Gradually, this land too was sold or leased into European hands as Nottoway population continued to decline. By 1772, just 35 Nottoway people lived on what remained of their ancestral landholdings. Eventually, Nottoway landholdings were largely extinguished. Many remaining Nottoway people assimilated into nearby tribes such as the Weyanock or into Euro-American society on the same lands they once held (RK&K 2020; Roundtree 1987; VDOE n.d.).

4.2 Historic Overview

4.2.1 Sussex County

Sussex County was established in 1754 from portions of Surry County. Although it was formally established in the mid-eighteenth century, European occupation of the county dates to the early-seventeenth century. Sussex County is bounded by Dinwiddie County to the northwest, Prince George County to the north, Surry County to the northeast, Southampton County to the southeast, and Greensville County to the southwest. As of 2020, Sussex County has a population of 10,829, down from 12,087 in 2010 (U.S. Census Bureau 2010, 2020b).

4.2.1.1 Settlement to Society (1607-1750)

Following the success of Jamestown and the rapid spread of Europeans throughout the James River valley, Surry County was established in 1652 south of the James River to accommodate the growing population. Surry County was originally laid out from the south bank of the James River to include the Blackwater, Nottoway, and Meherrin rivers. At the time, the Nottoway people still inhabited much of the land. Settlement beyond the Blackwater would not occur in earnest until after 1700 (RK&K 2020; Virginia Writers Program 1942).

In 1676, the first major conflict between European settlers of North America, Bacon's Rebellion, broke out across southeastern Virginia and Jamestown. In this conflict, an alliance of European indentured servants and enslaved peoples revolted against the colonial upper class, particularly Colonial Governor William Berkeley. Rebels were spurred by recent attacks on European property by the Algonquin Doeg and Susquehanna tribes, as well as high taxes and the perceived soft approach the governor took to the Native attacks. Nathanial Bacon, the *de facto* leader of the rebellion, demanded punitive action be taken against the remaining Native tribes, including forced removal and land seizures. During a series of revenge killings, Bacon and his followers crossed the James River and attacked Nottoway and Meherrin people, setting off a cycle of intertribal violence in Virginia and neighboring regions. Bacon's supporters were numerous in Surry County, part of which is today Sussex County. Many of the landless or indentured men who rallied to his cause hoped to acquire Native land (Circa 2016; Tyler-McGraw 2005:15; Virginia Writers Program 1942).

In September 1676, Bacon rallied militia supporters, including a large number from Surry County, and marched on Jamestown, ultimately setting fire to the town. Following the rebellion, Governor Berkeley seized Baconian assets and executed Bacon's allies. Ultimately, these events led to the 1677 Treaty of Middle Plantation, which afforded the Nottoway protection from aggressive slave hunting groups and provided allotments of their traditional homelands. By 1680, the emphasis on trade with the Catawba and Cherokee grew as settlements pushed further towards the Appalachian mountain range (Tyler-McGraw 2005).

After 1700, European settlers increasingly pushed into the hinterland south of the Blackwater. Legislation enacted by the General Assembly in 1705 drastically weakened the 1677 treaty and led to further encroachments onto Nottoway land. The earliest settlements within present-day Sussex County were almost entirely centered on tobacco as a cash crop, but also grew corn, wheat, and vegetables. Tobacco was the currency of colonial Surry County and was carted by oxen through rough, sparsely populated terrain to wharves on the south bank of the James River. This economic incentive drove migrants from the James River to establish new farms and homes south of the Blackwater, moving further from the established rivers and tidal zones and increasing pressure for local government (Circa 2016; Williams n.d.).

4.2.1.2 Colony to Nation (1750-1789)

Sussex County was officially established in 1754 from the southern portion of Surry County. Sussex County's original boundaries differ little from its current boundaries. The new county's birth was set against a backdrop of political, religious, and military unrest. In the early 1750s, Governor Robert Dinwiddie had grown increasingly unpopular in the rural parts of the Virginia colony as he established new fees for claiming land patents in the distant parts of the colony. This resulted in numerous petitions sent from hinterland counties, like Sussex, to the Virginia House of Burgesses, or even the King of England. These petitions were largely unanswered. At the same time, religious fervor in Sussex County was reaching new heights. In the mid-eighteenth century, Sussex County was an Anglican parish. Taxes and attendance to the Anglican Church were compulsory. Baptist and Methodist preachers, favored by the more rural agriculturalists, were persecuted for failing to pay required permit fees to the Anglican Church. Dissent grew between rural settlers in Sussex County and the aristocratic Anglican gentry of the James River, especially as a Great Revival of Baptist and Methodist teachings swept hinterland counties. Early Sussex Baptist preachers like Reverend James Bell often had to resign their positions in high society, like in the Virginia House of Burgesses, to serve their congregations. Antioch Church near Yale in Sussex County is considered the oldest Baptist church in eastern Virginia, being established in the early 1770s as the Raccoon Swamp Meeting House. Sappony Church near Stony Creek soon followed (Virginia Writers Program 1942; Williams n.d.).

Militarily, Sussex County was under pressure soon after formation. In an attempt to strengthen the colony's defenses and keep French interests at bay, Governor Dinwiddie divided the Virginia Colony into four military districts in 1752. The southern district, including Sussex County, was commanded by a young George Washington. When the French and Indian War broke out in 1754, the 21-year old Washington led several men from Sussex County into battle in Pennsylvania and at Fort Duquesne (Virginia Writers Program 1942).

Tobacco remained the primary cash crop of early colonial Sussex, followed by wheat and corn. Vegetables were widely grown for subsistence rather than market sale. Grist milling along the Nottoway and Blackwater was also a major early industry. Livestock primarily included cattle, hogs, and sheep; apple and peach orchards were also commonly found. While the large, wealthy plantations which developed along the James River were mostly absent in Sussex County, slavery remained a staple of the local economy. The census of 1790 offers a glimpse into colonial life: 10,549 people lived in Sussex County that year. Of that number, 54.8% were of African descent. Nearly 90% of that African American population was enslaved. In the 1750s and 1760s, fear of slave revolts drove increasingly violent oppression (Sussex County n.d.; Virginia Writers Program 1942).

Sussex County took active steps toward independence from English rule in 1776, when delegate Colonel David Mason of Sussex County helped to draft the first Virginia state constitution. Sussex County remained staunchly pro-independence for the remainder of the Revolutionary War. By the time fighting broke out in Virginia between 1776 and 1777, militia from Sussex County were pivotal in defending Hampton, the York River, and Williamsburg from the Crown's fleet. Direct conflict within the county occurred in 1781 when British General Cornwallis instructed cavalry and mounted infantry to scout Sussex County and identify crossings over the Meherrin the Nottoway rivers. Homes and farms were raided along the way as British troops searched for patriot sympathizers. At the end of 1781, Cornwallis met with Benedict Arnold, British commander of Petersburg, on the banks of the Nottoway River near Stony Creek (Sussex History n.d.; Virginia Writers Program 1942; Williams n.d.).

4.2.1.3 Early National Period (1790-1829)

Immediately following the Revolutionary War, Sussex County returned to a rural, isolated economy. Tobacco retained its position as the chief cash crop, though cotton was gaining popularity. Cotton was the largest manufacturing enterprise in Petersburg by 1820 and was further fueled by the development of the cottonseed huller in 1829. The huller allowed the easy extraction of cottonseed oil; small mills and factories developed throughout the Commonwealth. Slavery remained an integral part of the county's economy, though religious freedom in the new nation brought early abolition to Sussex County (Green 1935; Lutz 1954; Sussex County n.d.; Williams n.d.).

Quakers, settling in growing numbers near Seacock Swamp in Sussex County following the Revolutionary War, led a new abolitionist movement in the Early National Period. Along with some Methodists, Quakers sought freedom for the county's enslaved population. Almost 400 enslaved black people were freed, either by will or deed, during the 30 years following the onset of the Revolutionary War. Several Quakers left with former slaves to northern soil. Even members of local government, like Quaker Michael Bailey, clerk of the Sussex County Clerk, freed his family's slaves (Sussex County n.d.; Williams n.d.)

4.2.1.4 Antebellum Period (1830-1860)

Elsewhere in the county, abolition was far less popular. By 1830, the population of Sussex County included 4,118 free white people, 7,888 enslaved black people, and 866 freedmen. This population imbalance created anxiety among the white landowners. Following the 1831 Nat Turner slave revolt in neighboring Southampton County, during which at least one white Sussex County resident was killed, newly enacted "Black Laws" further stripped what few rights enslaved and freed black people had in Sussex County. This fear of slave revolts coupled with the increasingly exhausted soils in the Virginia Tidewater brought slave trading to the forefront of the Sussex economy. As fertile cotton fields were expanding in the Deep South, enslaved people on depleted farms in Sussex County were bought, trained, and sold further south as a means of income for white landowners who could no longer effectively harvest. The barbarism of slavery in Virginia soon attracted the attention of northern abolitionists and the general public (Virginia Writers Program 1942).

In 1832, the nation's first interstate railway was constructed through Sussex County. Named the Petersburg and Weldon Railroad (Petersburg Railroad), it stretched from Petersburg to Weldon, North Carolina with stops at Stony Creek and Jarratt in Sussex County. These stops, including Stony Creek near the APE, soon grew into towns and spurred population growth near the rail depots. The railroad was enormously successful. By 1838, the Petersburg Railroad operated eleven engines, six coaches, 120 cars, and additional equipment to maintain 55 more wagons. Throughout the 1830s, Sussex County's population ballooned to over 12,000 (Bradford 1838; Broyhill 2011; Virginia Writers Program 1942; Williams n.d.).

Additional industrial development soon followed. By 1853, the Norfolk and Western Railroad (N&W) passed through the towns of Wakefield and Waverly. These four Sussex locations: Stony Creek; Jarratt; Wakefield; and Waverly, soon resembled proper towns as rail depots attracted business and housing. The telegraph followed along the rail lines in 1847. Steam navigation on the Nottoway River was available after 1850, along with improved plank roads. Despite this modernization, Sussex County remained a staunchly agricultural county heavily invested in cotton and slave trading (Broyhill 2011; Sussex County n.d.; Virginia Writers Program 1942).

4.2.1.5 Civil War (1861-1865)

Sussex County played a pivotal role in engagements between the Federal and Confederate Armies. As early as 1861, muster rolls in Sussex County called up men and trained soldiers for the war. The Sussex Light Dragoons, organized at Waverly in 1861, eventually became part of the 13th Virginia Cavalry. During the Overland Campaign of 1864, Union General Ulysses S. Grant aimed to capture Petersburg and cut off Richmond. This would be accomplished primarily by cutting rail lines, including the Petersburg Railroad, which linked Richmond with the critical Confederate port at Wilmington. On June 22, 1864, Grant and General George G. Meade dispatched cavalry divisions under Brigadier General James Wilson and Brigadier General August Kautz to assault and cut Confederate railroads south of Petersburg. This mission is known as the Wilson-Kautz raid. During the raid, Jarratt's Depot in Sussex County was almost completely destroyed. Union cavalry under Wilson's overall command continued to harass the Sussex County countryside and cut rail lines before turning back towards Petersburg (NPS n.d.; Searles 2020; Sussex County n.d.; Virginia Writers Program 1942; Williams n.d.).

While retreating towards Petersburg, Wilson crossed the Nottoway and continued north. As they neared Stony Creek Depot on June 28, 1864, Confederate General Wade Hampton's cavalry division intercepted the Federals at Sappony Church. After initial success from the Confederates, the battle reached a stalemate. By evening, the Confederates had taken the Union earthworks and pushed Wilson into a disorderly retreat. Under the cover of nightfall, Wilson fled with the outnumbered Union divisions. Upwards of 800 Union soldiers were captured the following morning; official casualty figures are unknown. Despite this defeat, the Wilson-Kautz raid was successful in cutting vital rail lines (NPS n.d.; Searles 2020; Virginia Writers Program 1942).

Early in the winter of 1864, Stony Creek was established as a Confederate forage depot, making it a focus of Union sorties into the county. On December 1, Union cavalry raided the Stony Creek Depot and captured guards and supplies before razing the depot. The following spring, Union soldiers attacked the Sussex Courthouse, destroying courthouse records and carrying off the Sussex County seal. Homes and farms in the courthouse area were razed during the raid (Virginia Writers Program 1942; Williams n.d.).

4.2.1.6 Reconstruction and Growth (1866-1916)

Reconstruction brought drastic political change to Sussex County. Following the Reconstruction Act of 1867, Virginia was occupied by federal troops overseeing reconstruction. A new Virginia constitution was drafted which guaranteed the right to vote for black men, provided public schooling, and increased executive power. In 1868, military occupation ended and Virginia was readmitted into the Union. The census of 1870 counted 7,885 people in the county, a decrease from 10,175 people counted in 1860. Population soon rebounded to 10,238 by 1880 (Virginia Writers Program 1947). The county population would reach an all-time high of 13,664 in 1910 (U.S. Census Burau 1910).

Black involvement in government essentially ceased after 1900. After a new Virginia constitution was written in 1902, new poll taxes and regulations severely limited the rights of black people in the state. Virginia passed a series of laws known as the "Black Codes." Black codes in Virginia made petty crime, such as vagrancy, a felony, ensuring continual imposed black labor through convict leasing. Additionally, federal agents in Virginia used the Freedmen's Bureau to enforce sharecropping contracts of formerly enslaved people through state sanctioned labor laws. Between 1901 and 1902, the Virginia Constitutional Convention resolved to segregate society and remove what little progress had been made towards racial integration (Breitzer 2021).

New churches were established in Sussex as a new religious wave swept the county. While mostly constructed by black congregations, a number of segregated white churches were also built. First Baptist Church at Little Mill was founded in 1868 and is recorded as the first black-owned Baptist Church in Sussex County. New crops took the place of cotton and tobacco. Peanuts proved successful, as well as pine lumber. Both crops helped to repopulate towns and rebuild economies. In the 1890s, Waverly was the only incorporated town in Sussex County. Population growth spurred newly incorporated towns, including Stony Creek, throughout the early twentieth century (Virginia Writers Program 1942; Williams n.d.).

Infrastructure repairs, especially railroad repairs, were paramount during reconstruction. The Petersburg Railroad repaired upwards of 10 miles of track. Mergers followed these costly repairs. The Atlantic, Mississippi, and Ohio Railroad (AM&O) was formed in 1870 from the Norfolk and Petersburg Railroad. The AM&O was then merged into the Norfolk and Western Railroad (N&W) in 1881. The Sussex County Railroad Company was formed in 1872 to run between Stony Creek and Waverly, but soon failed. The Petersburg Railroad was merged into the Atlantic Coast Line Railroad (ACL) by 1900 (Broyhill 2011; Virginia Writers Program 1942).

4.2.1.7 World War I to World War II (1917-1946)

During World War I, Sussex remained a rural, agricultural county. Men from Sussex enlisted in the Armed Forces during World War I; twenty were killed during the war. Nearby Fort Lee near Petersburg trained almost 50,000 soldiers for battle. Following the war, women in Sussex County voted for the first time in 1920 following ratification of the nineteenth amendment (Virginia Writers Program 1942; Williams n.d.).

The Great Depression was felt in Sussex County, where the majority of the black population already lived in poor conditions and often without plumbing. Despite the economic downturn, agricultural pursuits still employed most in the county. Peanut farming, hogs, lumber, cattle, poultry, corn, and potatoes were staples of the economy. Cotton made a resurgence with new industrial cotton gins. By 1937, 14 manufactories were based in Sussex employing around 500 workers each. Retail reached a new high in 1939 with total sales reaching $1,567,000. General stores, furniture, automobiles, gas stations, restaurants, and drug stores were most common throughout the county (Virginia Writers Program 1942). During World War II, twenty-five Sussex men died in combat, two during the D-Day invasions on June 6, 1944 (Sussex County n.d.; Williams n.d.).

4.2.1.8 The New Dominion (1946-Present)

Throughout the 1950s and early 1960s, Virginia experienced county protests and public-school closures in efforts to stop desegregation. With the passage of the Civil Rights Act in 1964, black parents gained federal assurance that their children would attend fully funded, desegregated public schools (Remmers 2018). Despite the relatively small recorded Native American population within Virginia, Virginia law in 1947 forbid Native American children from attending public school. The Civil Rights Act of 1964 overturned the 1947 law (Huff 2012).

New, integrated schools opened across Sussex County, including Central High School, Central Elementary School, Ellen Warren Chambliss Elementary School, Annie B. Jackson Elementary School, and Jefferson Elementary School. Private schools like Tidewater Academy in Wakefield soon followed and recruited primarily white students as families resisted integration. The first black members of the County Board of Supervisors were elected in 1975 (Williams n.d.).

Today, Sussex County still retains an extremely rural, agricultural setting. The 2020 county population of 10,829 is just 280 more than that of 1790. Public transportation routes and highway construction have transformed parts of the county. I-95, the major east coast north-south highway, passes through Sussex County near Jarratt and Stony Creek. Agriculture accounts for over half of the county's basic employment. Other major industries include manufacturing, peanut shelling, tourism, and government. Around one-quarter of the county's land is devoted to agriculture. Principal crops are peanuts, cotton, corn, tobacco, grain, and soy. A massive 80% of county land is involved in commercial forestry. Principal softwood species include loblolly pine; hardwood species include oak and hickory. Historic sites such as Sussex County Courthouse Historic District, Waverly Downtown Historic District, and private historic homes on the National Register of Historic Places (National Register) provide active tourist attractions and inform about Sussex's long indigenous and Euro-American history (Sussex County n.d.; U.S. Census Bureau 2020b).

4.2.2 Town of Stony Creek and the APE

Examination of the local history of the Town of Stony Creek and the land which comprises the APE reveals a historic narrative which fits within the general historic framework presented above. This section will discuss the local history of Stony Creek, especially within the APE, which can characterize what archaeological resources may exist in the APE.

The Town of Stony Creek takes its name from the waterway which passes from west to east through the town and empties into the Nottoway River just east of the town. The town has its origins as a railroad depot along the Petersburg Railroad established by 1838 (Bradford 1838). Prior to establishment of the railroad depot, the Stony Creek area may have been first visited by Europeans during the 1650 exploration party led by Edward Bland and Abraham Wood. Their departure left the area uninhabited by Europeans (Briceland 2020; RK&K 2020; Virginia Writers Program 1942).

Land along Sappony Creek in Dinwiddie and Sussex counties was first patented by Europeans as early as 1715. Land records from this period are sparse. In 1715, Jarvis Winfield of Charles City, Virginia may have claimed land on the southeast side of Sappony Creek surrounding the present-day Winfield's Millpond. Winfield's patent likely included the APE. Actual development of the patented land likely lagged behind early land claims. Jarvis Winfield died in 1756 and his land, including the APE, passed to his son William Winfield (Ancestry.com 1999; Richards 1984; Spann 1976).

Following establishment of Sussex County in 1754, settlement of the Stony Creek area increased. At this time, the Stony Creek area was sparsely populated by small farms and largely undeveloped. During the Revolutionary War, British forces visited the area several times during the 1781 campaign. There is no historic evidence for Revolutionary War conflict within Stony Creek or directly within the APE. Nearby early nineteenth century farmhouses Glenview and Rose Bower, located six miles southeast of the APE and two miles west of the APE, respectively, are representative of the middling plantations which dotted the area prior to the advent of the Petersburg Railroad. Sappony Church, located about 2.2 miles northeast of the APE, was founded in 1773. The current church building dates to the Civil War (Circa 2016; NPS 1990, 2008; V-CRIS 2023; Williams n.d.).

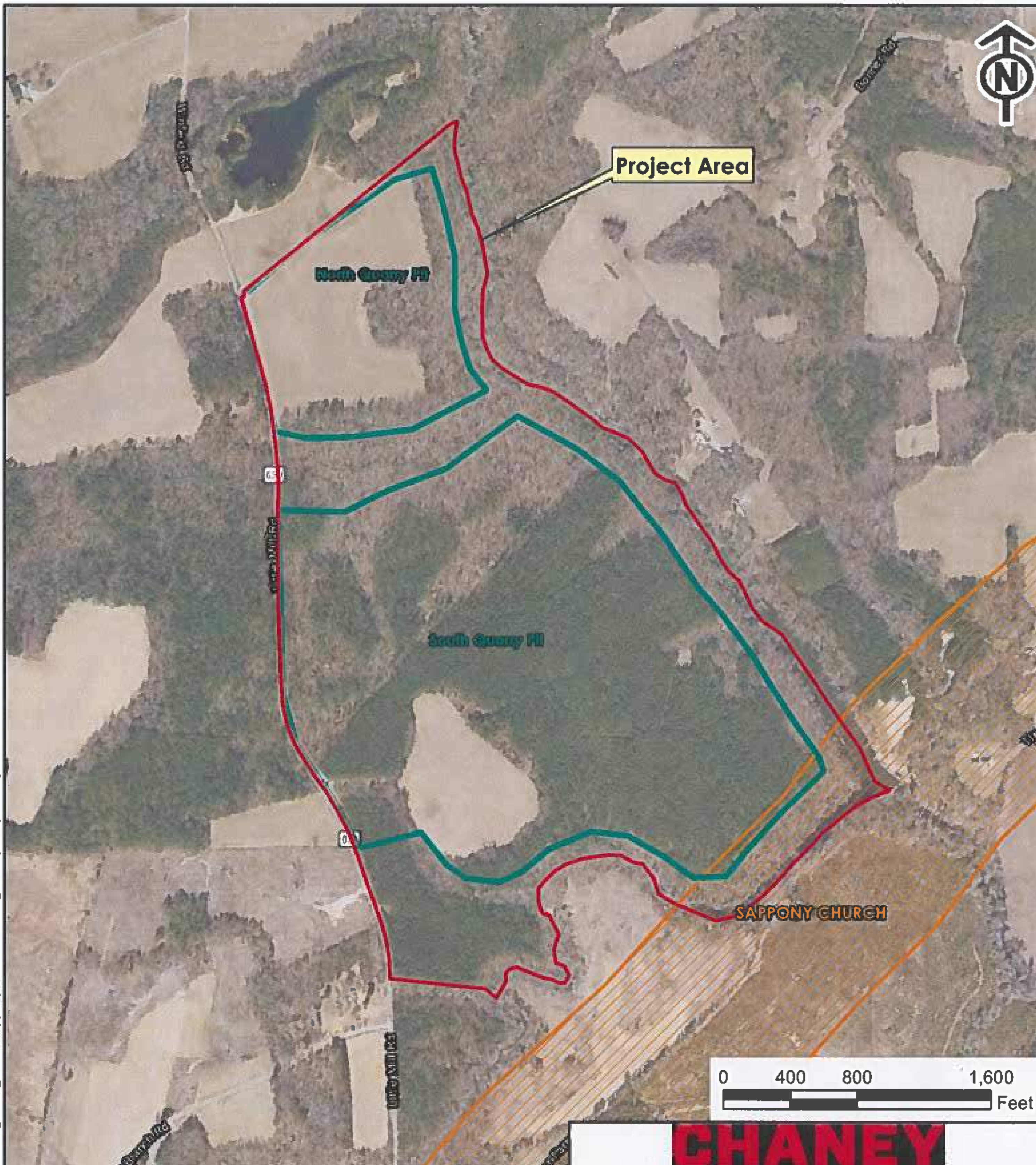
Construction of the Petersburg Railroad in 1838 drastically changed the Stony Creek area. The Stony Creek Depot was established where the rail line crossed the creek of the same name, or approximately near Main Street and Halifax Road in the present-day Town of Stony Creek. Quickly, the depot became a hub for the Petersburg Railroad. Farmers in the Stony Creek area could now ship their cotton, tobacco, and produce to market and fetch better prices. The community quickly began to grow as stores, warehouses, lodging, and banking services appeared around the depot. Despite the population growth, Stony Creek was not incorporated as a town and remained a crossroads railroad community (Circa 2016; Williams n.d.).

The area around the APE also grew during the mid- to late nineteenth century. A millpond and sawmill were established on the Winfield property just north of present-day McKenney Highway (SR 40) where Winfield's Millpond remains today. In addition, the Winfield Family Cemetery located at the corner of McKenney Highway (SR 40) and Little Mill Road (SR 63) was opened around this time; the earliest burial dates to 1863. The land which contains the APE likely remained within the Winfield family throughout the nineteenth century. Sappony Church also grew throughout the nineteenth century. At one point, nearly half the congregation were enslaved people (CSA 1863; HMDB.org 2009).

During the Civil War, the Stony Creek Depot was the backdrop for a clash between Union and Confederate forces. While the Union Army laid siege to Petersburg between June 15, 1864 and March 1865, residents within the city were desperate for supplies smuggled past the Union lines. The Stony Creek Depot served as an ideal location for trains traveling north on the Petersburg Railroad to stop and unload their goods onto wagons, which then made a back-road trek over plank roads to Petersburg, avoiding the Union lines. This clandestine activity directly led to the Battle of Sappony Church on June 28, 1864 (Page 2018).

Following successful raids along the South Side Railroad and Richmond & Danville Railroad, the Wilson-Kautz Raid of the Petersburg Campaign culminated in the Battle of Staunton River Bridge on June 25. After a failed attempt to capture the bridge, Wilson turned east to retreat back to Union positions. On June 28, Union cavalry crossed the Nottoway River at Double Bridge in Jarratt and continued north towards Stony Creek Depot. Their path generally followed present-day Walkers Mill Road (SR 619) before turning northeast along Concord Sappony Road (SR 681). Where present-day Concord Sappony Road turns east, Union forces continued their northeast path along present-day Osborne Road and Tuckers Farm Way across Sappony Creek to Shands Road (SR 781). This route passes through the southeast extent of the APE near parallel to Rocky Branch Creek (**Figure 4**) (Searles 2020; V-CRIS 2023).

After spending weeks in enemy territory, the Union position was well known. Confederate General Wade Hampton had been ordered to Stony Creek Depot the previous day in order to intercept Wilson. Hampton laid an ambush at Sappony Church and ordered General John R. Chambliss forward to meet Wilson. Chambliss had knowledge of the local terrain and had attended Sappony Church before the war. Shortly after reaching the church northeast of the APE, Union cavalry forces were engaged by Chambliss and driven back along present-day Sussex Drive/McKenney Highway (SR 40). From there, Union cavalry dismounted and checked the Confederate advance. The two lines then engaged around the church. Damage from the day of battle, including bullet and cannon holes in the church exterior, are preserved today. The church sanctuary was also used as a hospital during the fighting. The battle soon reached a stalemate as both artillery and small arms were deployed to no result. Towards the end of the day,



LEGEND

- Project Area
- APE
- Sappony Church Battlefield Boundary

Source: Virginia Geographic Information Network (VGIN), 2022.
American Battlefield Protection Program, National Park Service, Department of the Interior, 2014.

CHANEY ENTERPRISES

BATTLE OF SAPPONY CHURCH WITHIN THE APE

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 800'

DATE: March 2024

Dewberry

FIGURE 4

Path: Q:\50164971\GIS\Mxd\Phase I Updated Figures\4_BattleofSapponyChurchwithinAPE_ChaneyEnterprisesProjectFreedomSite.mxd

Confederate troopers under General W.H.F. Lee arrived in support of Hampton and Chambliss. Outnumbered, Wilson began a hasty retreat under the cover of nightfall towards Reams Railway Station to the north. While additional skirmishes followed the battle, Wilson returned most of the cavalry to Union lines and was successful in devastating railroads in the region. A total of 4,000 Union and 5,000 Confederate forces ultimately fought in the engagement; 800 Union were captured. Other casualty figures are unknown (Searles 2020; Hampton 1878; HMDB.org 2009).

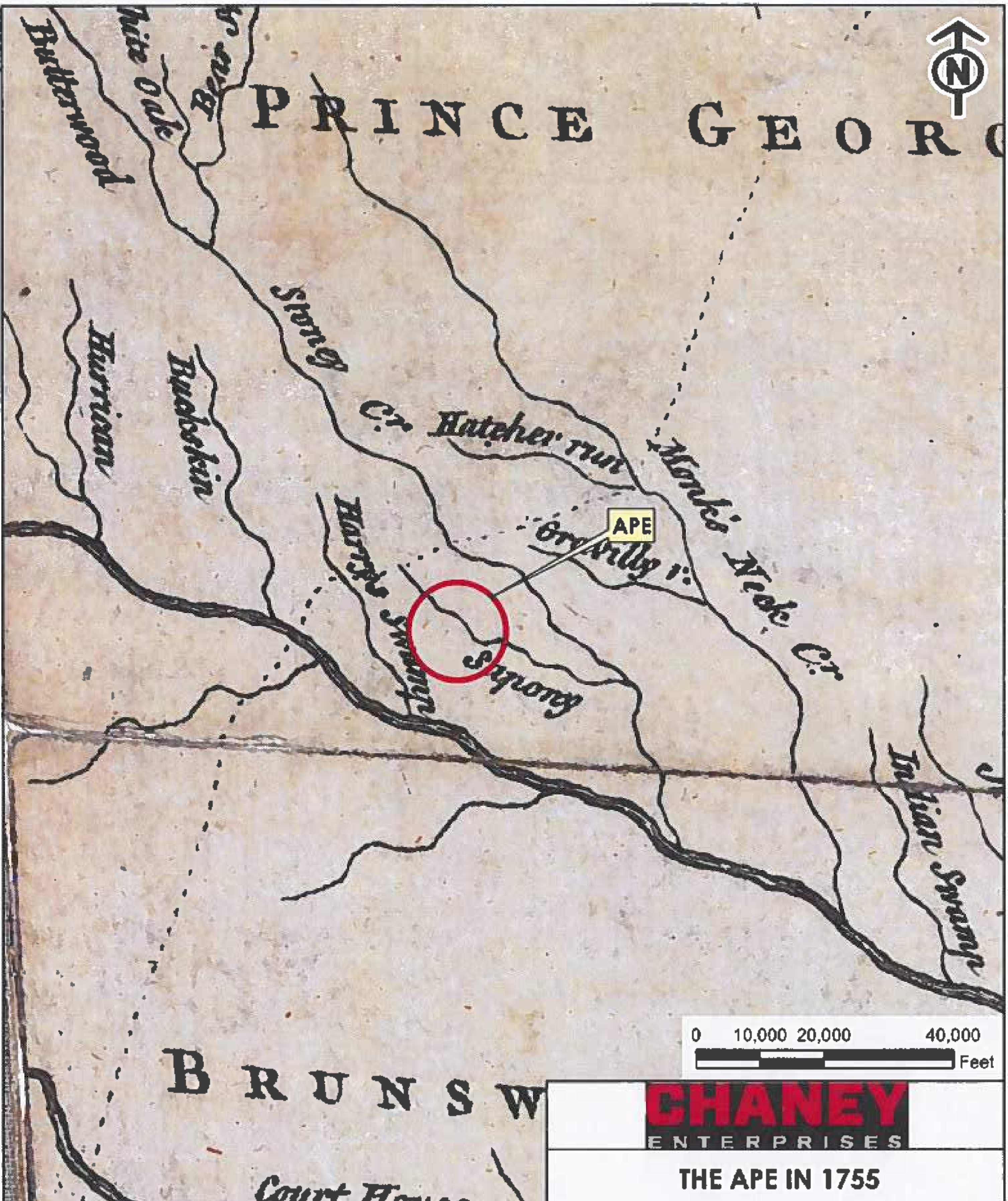
Immediately following the Civil War, the Stony Creek Depot focused on rebuilding the lost infrastructure and rails. Despite an initial drop in population, the area rebounded by the end of the nineteenth century. The Town of Stony Creek was officially incorporated in 1915 following rapid community growth (Williams n.d.). Throughout the twentieth century, the Town of Stony Creek changed little. The town's population in 1920 was 345; by 1940, population peaked at 493. The latter half of the twentieth century has seen a general decline in the town's population and economy. Today, just 198 people were counted in the 2010 census. The historic Petersburg Railroad still passes through the town, now operated by CSX. In 1957, I-95 was constructed just east of the town; the town is served by Exits 31 and 33. The present Town of Stony Creek is still defined by the railroad crossing and maintains a very rural, agricultural setting. Several buildings in the downtown area date to the Civil War. The surrounding area, including the APE, has changed little since that time. The APE remains a forested/agricultural plot and is still owned by the Winfield family (Williams n.d.; U.S. Census Bureau 1920, 1940, 2010a).

4.3 Mapped Historic Development in the APE

Historic cartographic research included a review of Fry and Jefferson's 1755 *A Map of the Most Inhabited Part of Virginia Containing the Whole Province of Maryland with Part of Pennsylvania, New Jersey, and North Carolina*, Carey and Lea's 1822 *Map of* Virginia, a Confederate States of America (CSA) map from 1863 entitled *Map of Surry, Sussex, and Southampton Counties, Virginia*, Bien, Campbell, and Patton's 1891 *Preliminary Map of Part of the South Side of James River , VA,* and USGS 15-minute topographic maps of the Jarratt and McKenney quads dating to 1919, 1921, 1943, and 1951. Historic aerial imagery beginning in 1951 was sourced from USGS single frame aerial photographs and the NETR online resource, historicaerials.com (NETR 2023). Historic maps prior to 1863 available for review generally showed a large-scale view of Virginia and lacked the necessary detail to identify structures or properties within the APE.

As part of the cartographic analysis, historic maps were georeferenced using ArcGIS software to situate the APE in context with mapped historic development. Historic maps generally reflect the surveying technology and methods of the time of recordation. Reconciling historic techniques, whose accuracy may not have been as advanced as present-day geospatial technology, with modern coordinates can result in ambiguity given the discrepancy between surveying methods. This locational uncertainty is particularly relevant when examining the earliest historic maps from the eighteenth and early-nineteenth centuries. The following cartographic analysis was conducted with an awareness and recognition of the potential ambiguity in georeferencing of the earliest maps.

The earliest map upon which the APE was georeferenced dates to 1755 (**Figure 5**). The map entitled *A Map of the Most Inhabited Parts of Virginia* from Fry and Jefferson was one of the first well-surveyed and scaled maps of the APE. However, details such as structures, property boundaries, or towns are not well shown. The general area of the APE appears on the map just north of the Nottoway River on the south side of Sappony Creek, west of the confluence of Sappony Creek and Stony Creek. No development is visible within the APE. The only nearby feature consists of a north-south oriented dotted line, labeled "The Trading Path leading to the Catawba & Cherokee Indians." This path likely represents the Occaneechi Trail and crosses the Nottoway River west of the APE before turning northeast to cross Harry's Swamp, Stony Creek, and Monks Neck Creek before continuing north. The trail passes relatively close to the APE and may have brought early travelers to the area (Fry and Jefferson 1755).



CHANEY ENTERPRISES

THE APE IN 1755

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 20000'

DATE: March 2024

Dewberry

FIGURE 5

LEGEND

APE

Source: Joshua Fry A map of the most inhabited part of Virginia containing the whole province of Maryland with part of Pensilvania, New Jersey and North Carolina 1755

Path: Q:\50164971\GIS\Mxd\Phase I Updated Figures\5_ArchaeologicalAPEin1755_ChaneyEnterprisesProjectFreedomSite.mxd

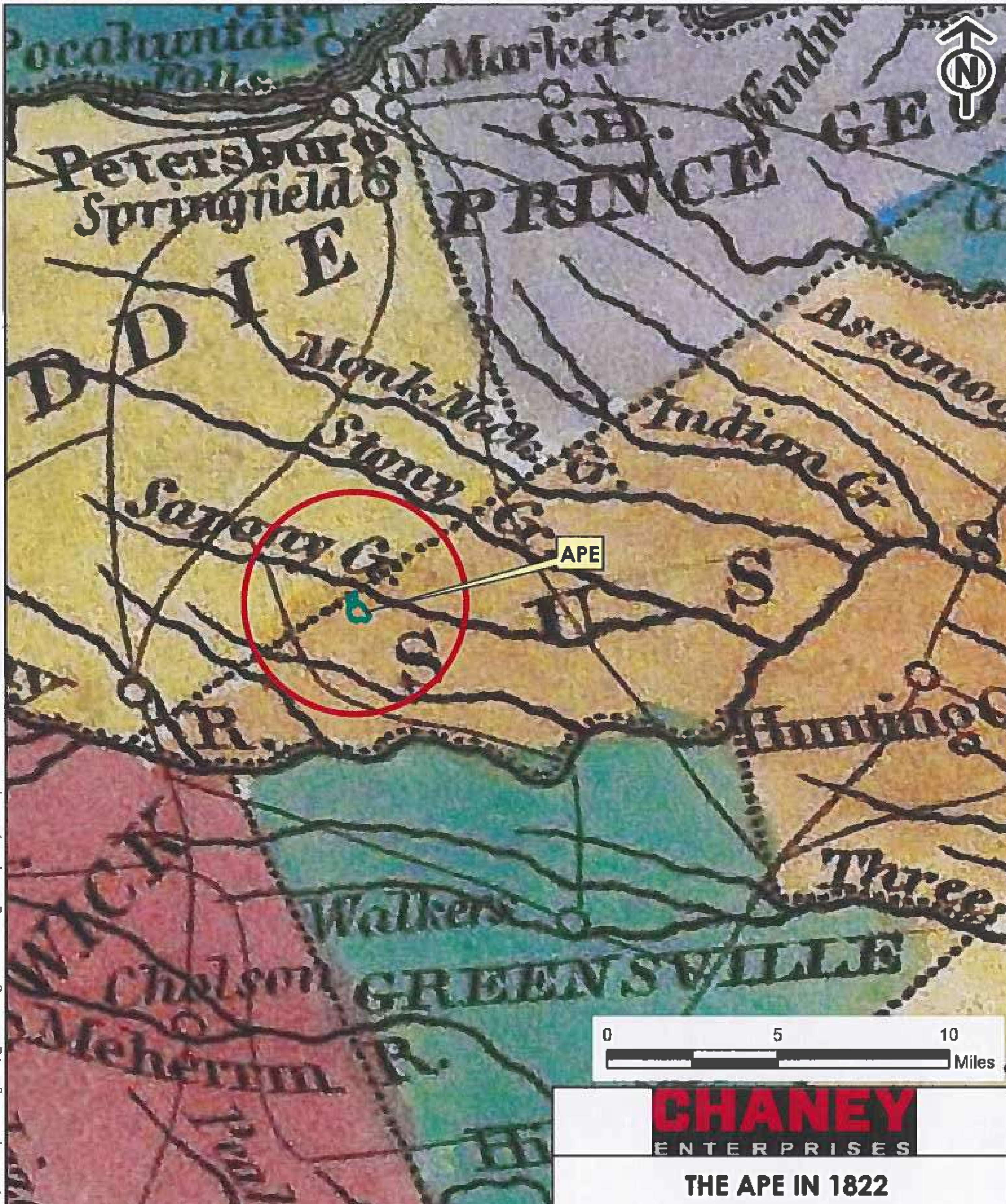
Carey and Lea's *Map of Virginia* from 1822 also presents a high scale map without clear structures or property boundaries. The general APE area is visible on the south side of Sappony Creek roughly near the Sussex-Dinwiddie county line (**Figure 6**). A town in the Stony Creek area is not visible, though the Town of Hunting Quarter does appear within Sussex County, indicating a lack of meaningful settlement in the Stony Creek area prior to the introduction of the Petersburg Railroad. Roads appear near the APE; a north-south oriented road east of the APE travels between Petersburg and Greensville County and roughly runs where I-95 passes today. West of the APE, a north-south oriented road travels between Dinwiddie County and the Nottoway River. No development is apparent within the APE (Carey and Lea 1822).

By 1863, a Confederate survey map entitled *Map of Surry, Sussex, and Southampton Counties, Virginia* shows the APE in greater detail (**Figure 7**). For the first time, the Stony Creek Depot appears where the Petersburg Railroad crosses Stony Creek (out of map view). Further to the west, Sappony Church is visible at a crossroads shared by a sawmill and a home belonging to Wheelwright. Continuing to the west, the APE is visible north of a road traveling from the southwest towards Sappony Church. This road roughly corresponds with the Union path of travel during the Battle of Sappony Creek (NPS 2009). Sappony Creek appears to cut through the APE; this likely represents a mapping error. A sawmill is shown southeast of the APE at the confluence of Sappony Creek and Rocky Branch Creek. Properties belonging to Wall, J. Winfield, and Robinson appear south of the APE. The land within the APE appears mostly forested and undeveloped. Overall, increased development in the surrounding area reflects the rapid growth of the Stony Creek Depot just prior to the Civil War (CSA 1863).

By 1891, a map by Julius Bien, Albert H. Campbell, and J.H. Patton entitled *Preliminary Map of a Part of the South Side of James River, VA* shows little change within the APE (**Figure 8**). The Stony Creek Depot appears within the present-day Town of Stony Creek, as well as Sappony Church to the west. The APE appears north of the same southwest-east oriented road. The Winfield sawmill south of the APE is again shown, along with an additional mill north of the APE in Dinwiddie County. This mill is also owned by the Winfield family and is in the location of the modern Winfield's Mill crossroads town. Wall's property appears east of the APE, as well as the Robinson property to the south. No development appears with the APE (Bien, Campbell, and Patton 1891).

USGS historic 15-minute quadrangle maps Jarratt and McKenney were reviewed. The APE is split between the Jarratt and McKenney 15-minute quads. Therefore, two maps from roughly the same time period were aligned and georeferenced to examine the full APE. The 1919 Jarratt quad was aligned with the 1921 McKenney quad (no 1919 McKenney quad was available) (**Figure 9**). As in previous maps, Sappony Church is visible west of the APE (out of frame), as well as Winfield's Mill to the north. Overall, additional structures and unimproved roads appear in the surrounding landscape. Predecessors to SR 40 and Little Mill Road (SR 630) appear roughly within their current alignment. Development also appears within the APE for the first time. Three structures are shown within the APE; one structure is visible near the center of the North Pit APE, while two structures appear within the South Pit APE. In addition, an unlabeled, unimproved road runs from present-day Little Mill Road east and through the South Pit portion of the APE before crossing Rocky Branch Creek (USGS 1919, 1921). USGS 15-minute quads Jarratt 1951 and McKenney 1943 were also aligned and examined (**Figure 10**). The landscape surrounding the APE is similar to that of 1919. Spiers Pond is now shown, indicating that Sappony Creek was dammed between the 1920s and 1950s. No structures or roads are now shown within the South Pit APE. In the North Pit APE, two structures now appear. One is the same structure that appeared in 1919, and the second likely represents an outbuilding. No further development is apparent within the APE (USGS 1943, 1951).

Beginning in 1951, single frame aerial photographs of the APE are available from the USGS. In 1951, the APE is generally composed of farmland or undeveloped woodland. The North Pit portion of the APE includes a domestic structure and several ancillary buildings within an agricultural field where a structure was shown on the USGS quad maps. The field roughly mirrors the agricultural field in this portion of the APE today. Within the South Pit APE, more land is cleared for agriculture than today. The low-resolution photograph may show some structures in the center of the South Pit APE. Overall, the South Pit portion of the APE is mostly wooded and undeveloped, while the North Pit portion is mostly agricultural.



CHANEY ENTERPRISES

THE APE IN 1822

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 4 Miles

DATE: March 2024

Dewberry

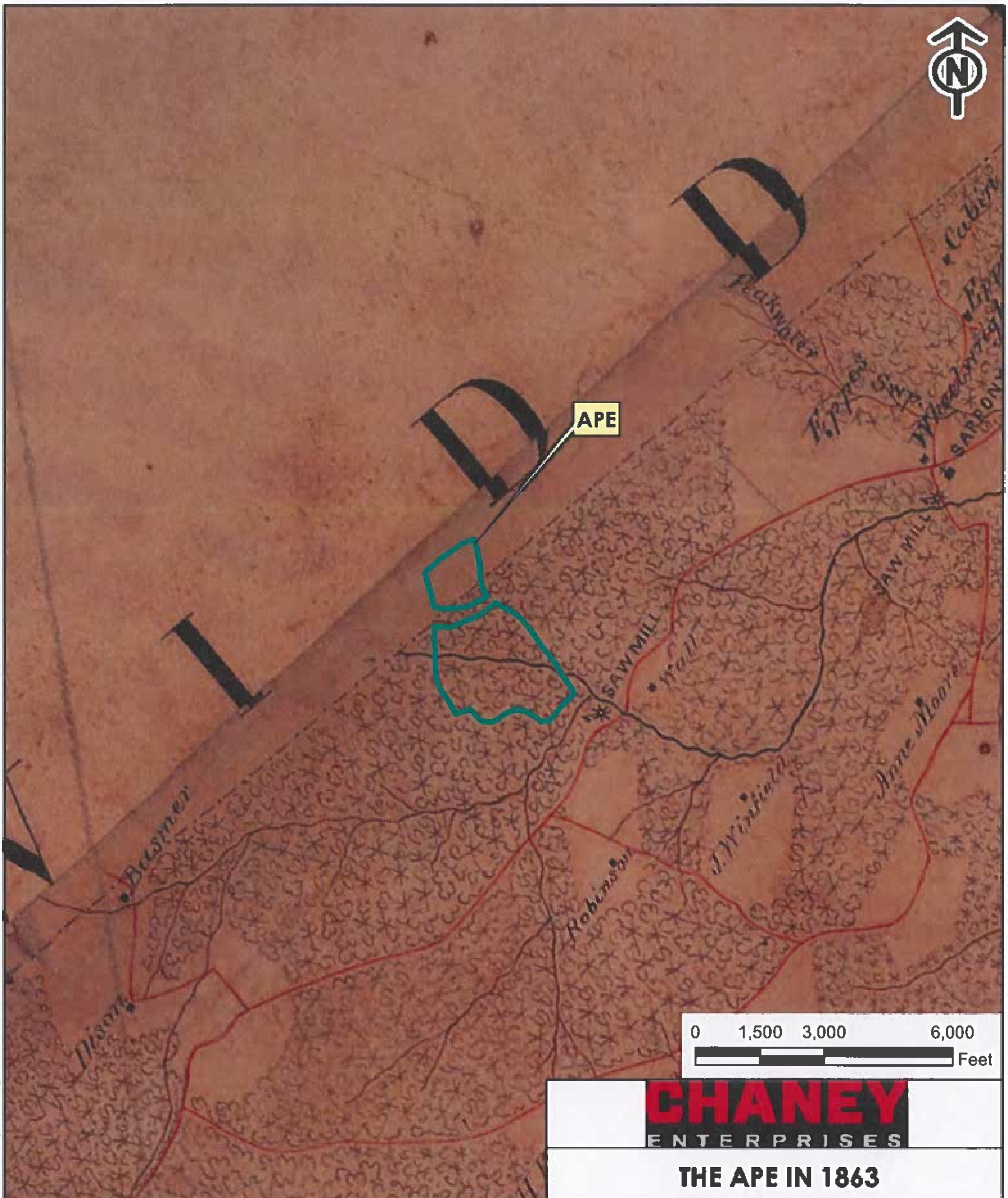
FIGURE 6

LEGEND

APE

Source: Carey Geographical, Historical, And Statistical Map Of Virginia, 1822

Path: Q:\50164971\GIS\Mxd\Phase I Updated Figures\6_ArchaeologicalAPEin1822_ChaneyEnterprisesProjectFreedomSite.mxd



LEGEND

APE

Source: Albert H Campbell Map of Surry, Sussex and Southampton counties, Virginia 1863

CHANEY ENTERPRISES

THE APE IN 1863

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

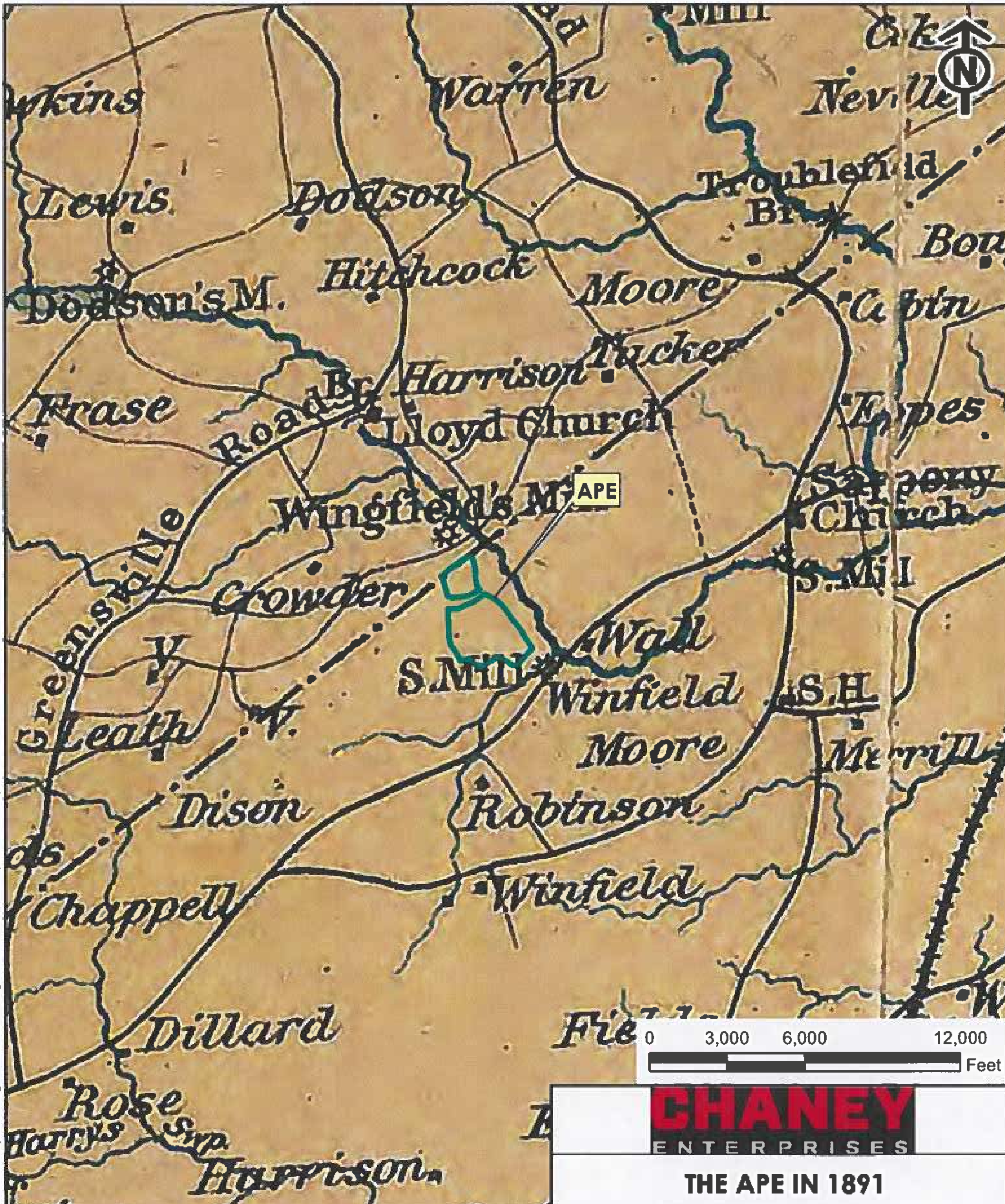
SCALE: 1 " = 3,000 '

DATE: March 2024

Dewberry

FIGURE 7

Path: Q:\50164971\GIS\Mxd\Phase I Updated Figures\7_ArchaeologicalAPEin1863_ChaneyEnterprisesProjectFreedomSite.mxd



CHANEY ENTERPRISES

THE APE IN 1891

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 5000'

DATE: March 2024

Dewberry

FIGURE 8

LEGEND

APE

Source: Julius Bien Preliminary map of a part of the south side of James River, Va 1891

Path: Q:\50164971\GIS\Mxd\Phase I Updated Figures\8_ArchaeologicalAPEin1891_ChaneyEnterprisesProjectFreedomSite.mxd

CHANEY ENTERPRISES

THE APE IN 1919

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 1668'

DATE: March 2024

Dewberry

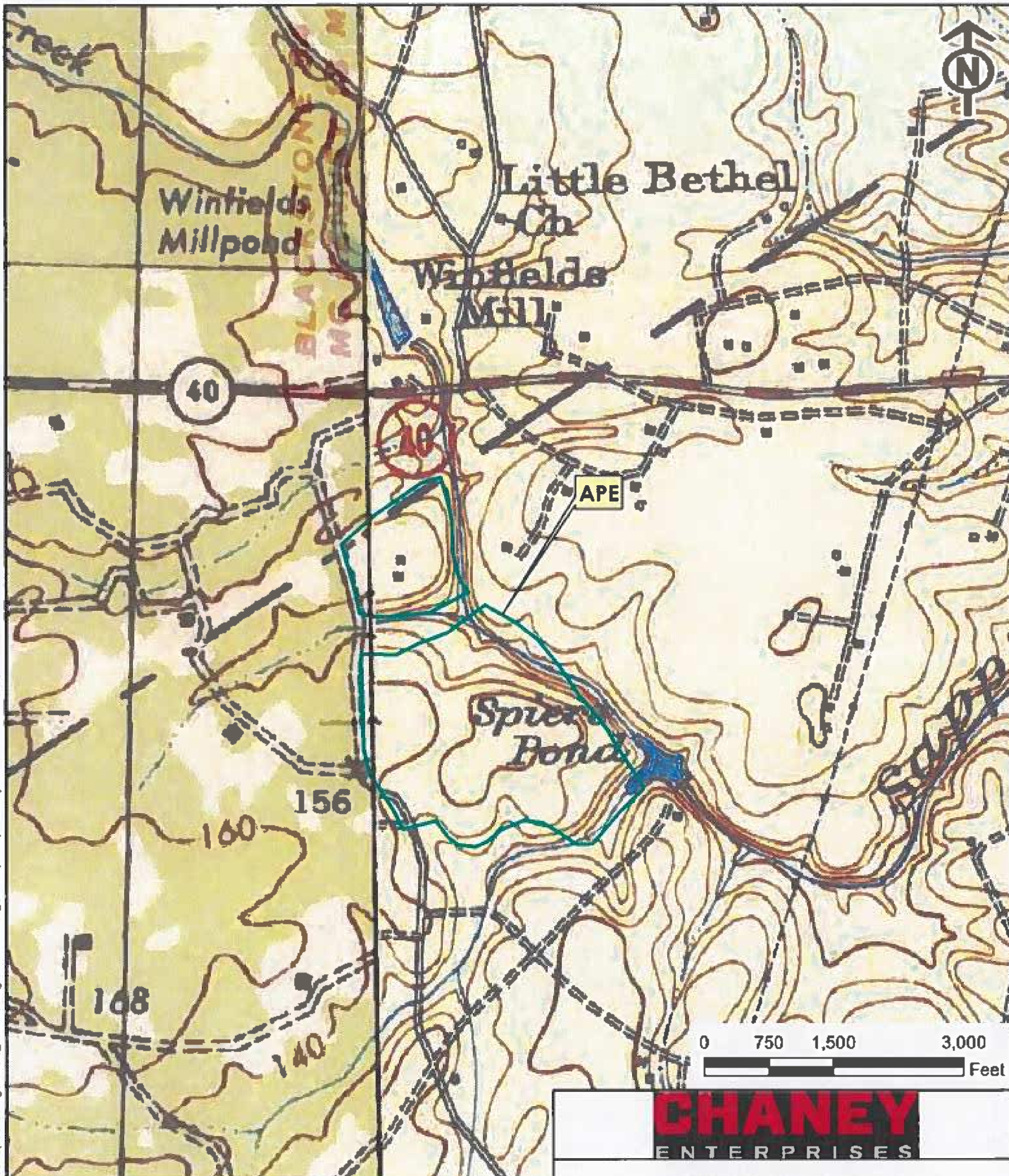
FIGURE 9

LEGEND

APE

Source: Source: Scale. Virginia Topographic Series, MC Kenney Quadrangle. Pittsburgh: Army Map Service, 1921. United States Geological Survey & Virginia Topographic Series, Jarrat Quadrangle. Pittsburgh: Army Map Service, 1919. United States Geological Survey

Path: G:\50164971\GIS\Mxd\Phase I Updated Figures\9_ArchaeologicalAPEin1919_ChaneyEnterprisesProjectFreedomSite.mxd



CHANEY ENTERPRISES

THE APE IN 1951

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 1500'

DATE: March 2024

Dewberry

FIGURE 10

LEGEND

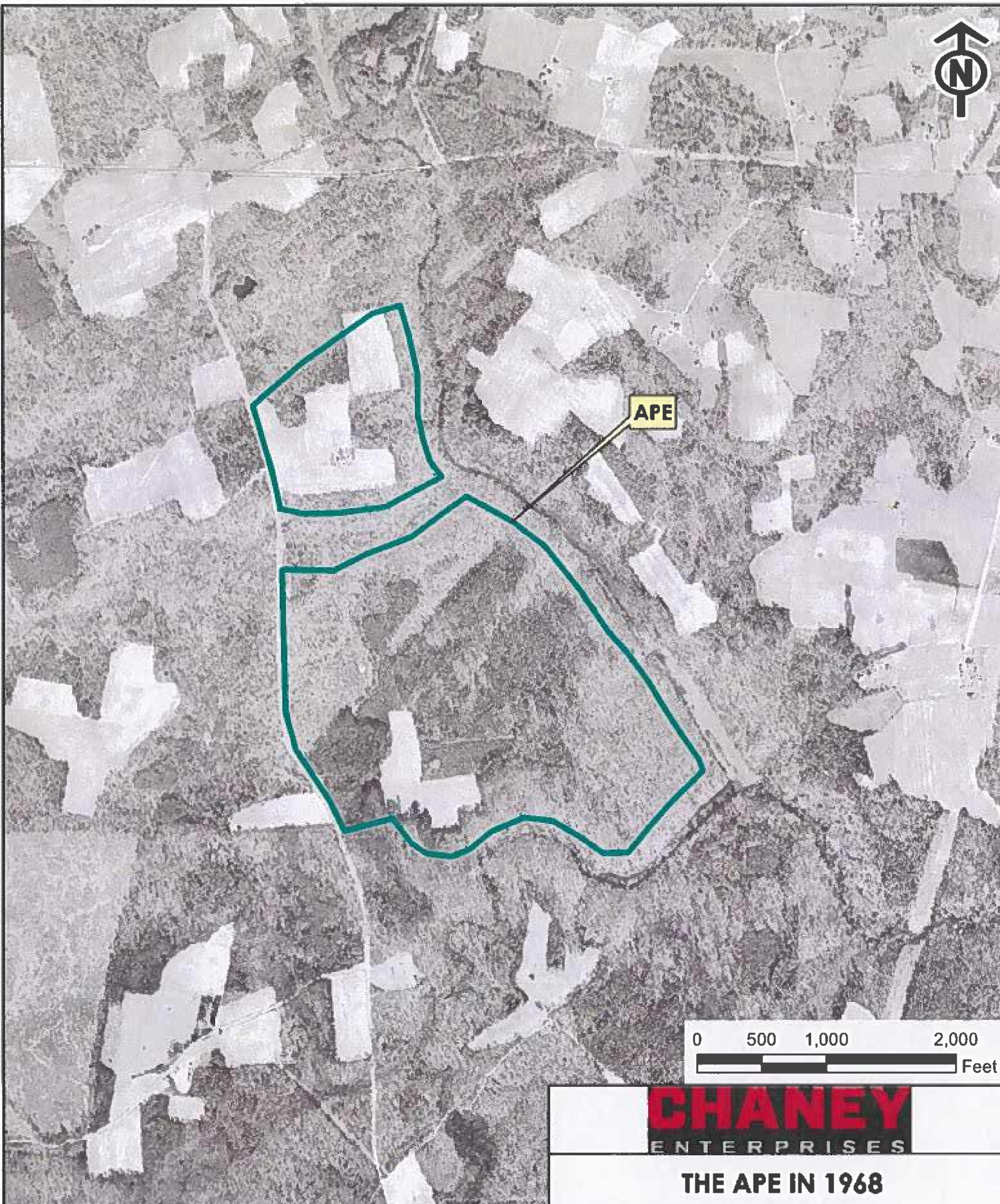
APE

Source: Scale. Virginial Topographic Series, MC Kenney Quadrangle. Pittsburgh: Army Map Service, 1943. United States Geological Survey &
Virginia Topographic Series. Jarrat Quadrangle. Pittsburgh: Army Map Service, 1951. United States Geological Survey

Path: Q:\50164971\GIS\Mxd\Phase I Updated Figures\10_ArchaeologicalAPEin1951_ChaneyEnterprisesProjectFreedomSite.mxd

Aerial imagery from 1968 shows little change within the APE (**Figure 11**). The domestic structure and dependencies within the North Pit portion of the APE are visible and seem to include a driveway and at least four structures surrounding the main home. No structures are seen in the South Pit portion of the APE, although some former agricultural fields have been replanted with agricultural pine stands. In 1973, no change is seen within the APE. By 1976, the domestic residence and dependencies within the North Pit portion of the APE have been demolished (**Figure 12**). No structures appear within the North Pit APE; the agricultural field within the APE is roughly the same shape as today. The South Pit portion of the APE appears identical to 1973 and is mostly dense forest (USGS 1950, 1968, 1973, 1976).

More recent historic aerial photography from the NETR was reviewed. By 1982, a strip mine quarry was opened just north of the APE and east of Little Mill Road. Water has been allowed to pool in the bottom of the mine. The South Pit portion of the APE appears been heavily logged; a small, rounded agricultural field appears in the center of the APE similar to the present. The North Pit portion of the APE is nearly identical to today. By the early 2000s, the APE appears as it does today. Logging activities continue within the South Pit portion of the APE; harvesting appears to have last occurred in 2002. Besides logging, there are no signs of recent disturbance in the APE (NETR 2023; Sussex County 2023).



LEGEND

APE

Source: USGS, Aerial Photo Single Frames, 1968

CHANEY ENTERPRISES

THE APE IN 1968

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 1000'

DATE: March 2024

Dewberry

FIGURE 11

Path: Q:\50164971\GIS\Mxd\Phase I Updated Figures\11_ArchaeologicalAPEin1968_ChaneyEnterprisesProjectFreedomSite.mxd

LEGEND

APE

CHANEY ENTERPRISES

THE APE IN 1976

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 1000'

DATE: March 2024

Dewberry

FIGURE 12

Source: USGS, Aerial Photo Single Frames, 1968

Path: Q:\50164971\GIS\Mxd\Phase I Updated Figures\12_ArchaeologicalAPEin1976_ChaneyEnterprisesProjectFreedomSite.mxd

5.0 PREVIOUS CULTURAL RESOURCE INVESTIGATIONS AND KNOWN CULTURAL RESOURCES

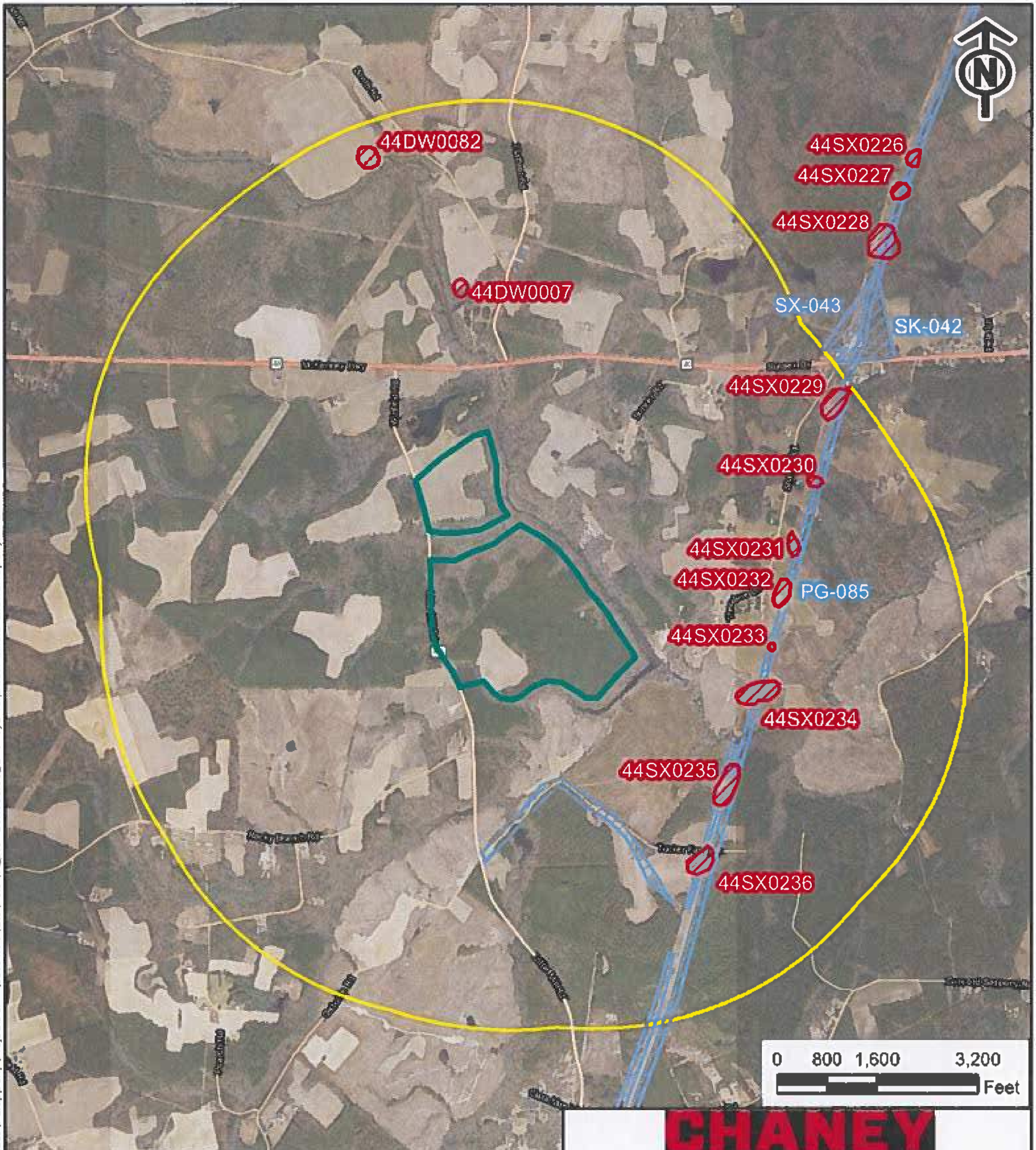
5.1 Previously Conducted Cultural Resource Investigations

A search of V-CRIS revealed two previously conducted cultural resource investigations within one mile of the APE (**Figure 13**). In 1999, Gray and Pape, Inc. completed the four-volume *Phase I Archaeological Survey of the Proposed Solo Pipeline, Virginia*. The report presents Phase I archaeological investigations of a 45-mile pipeline corridor stretching across Prince George, Dinwiddie, Sussex, and Greensville counties and the City of Petersburg in Virginia. The survey included a portion of the pipeline which crosses Sussex Drive (SR 40) east of the APE. Eight archaeological sites within one mile of the APE were established within this pipeline during the survey. These include four pre-contact sites and four multicomponent pre-contact/historic sites (Gray and Pape 1999).

In 2020, Circa conducted a Phase I archaeological survey of the 19-acre Shands Energy Center located north of the intersection of Shands Road (SR 713) and Sussex Drive (SR 40) east of the APE. Following submittal of the report, the DHR requested peer review by Rummel, Klepper, and Kahl, LLP (RK&K). By the time of peer review, the project area was reduced to a 6.2-acre site which was re-examined by RK&K. Following peer review of the revised 6.2-acre Shands Energy Center, RK&K concurred with Circa that the project would have no adverse effect on archaeological historic properties eligible for listing in the National Register. No archaeological sites were identified as a result of the initial Phase I survey or peer review (RK&K 2020).

5.2 Known Archaeological Sites

The review of V-CRIS identified 10 previously identified archaeological sites within one mile of the APE (**Figure 13, Table 2**). Eight of the 10 sites within one mile of the APE were established during Gray and Pape's 1999 Solo Pipeline survey. The remaining two sites are located north of the APE in Dinwiddie County. Of the 10 sites within one mile of the APE, six are pre-contact sites and four are multicomponent sites with both pre-contact and historic components. Each of the previously identified archaeological sites within one mile of the APE is unevaluated for inclusion in the National Register. No previously identified archaeological sites are located within or adjacent to the APE (V-CRIS 2023).



LEGEND

- Archaeological Resources
- Archaeology Phase 1 Survey
- APE
- 1 Mile Buffer

Source: Virginia Geographic Information Network (VGIN), 2022.
VDHR Feature Service Layer 2024.

CHANEY ENTERPRISES

PREVIOUSLY CONDUCTED CULTURAL RESOURCE INVESTIGATIONS AND KNOWN ARCHAEOLOGICAL SITES

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 2,100'

DATE: March 2024

Dewberry

FIGURE 13

Path: \\dewberry.dewberryroot.local\Offices\Parsippany\Projects-ENV\50164971\GIS\Mxd\13_PrevConducted_ChaneyEnterprisesWinfieldTerettaProperty.mxd

Table 2: Archaeological Sites within One Mile of the APE

DHR ID	Site Name	Distance/Direction (feet) from APE	Time Periods	Evaluation Status
44DW0007	--	2,213 / N	Pre-Contact: Woodland	Unevaluated
44DW0082	--	4,576 / NW	Pre-Contact: Woodland	Unevaluated
44SX0229	--	5,244 / E	Pre-Contact	Unevaluated
44SX0230	--	4,917 / E	Pre-Contact	Unevaluated
44SX0231	--	2,917 / NE	Pre-Contact: Paleo-Indian; Historic	Unevaluated
44SX0232	--	2,313 / NE	Pre-Contact: Middle Archaic	Unevaluated
44SX0233	--	2,067 / E	Pre-Contact; Historic: Antebellum – New Dominion	Unevaluated
44SX0234	--	1,635 / SE	Pre-contact	Unevaluated
44SX0235	--	2,142 / SE	Pre-Contact; Historic: Early National	Unevaluated
44SX0236	--	2,874 / SE	Pre-Contact: Early – Middle Archaic; Historic: Antebellum – New Dominion	Unevaluated

Site 44DW0007 consists of a pre-contact Woodland Period artifact scatter including ceramic, projectile points, and scrapers. The site was identified by surface survey conducted in 1969. There is little additional information about the site. Site 44DW0007 is located 2,213 feet (705 meters) north of the APE on a well-drained, flat terrace on the north bank of Sappony Creek. Part of the site extends over poorly drained soils directly adjacent to the creek. Site 44DW0007 is unevaluated for National Register eligibility (NRCS 2023; DHR n.d.).

Site 44DW0082 is pre-contact lithic scatter containing triangular projectile points and quartzite bifaces. No ceramics were recovered. The site was first identified by surface survey by the State Forest Service in 1984; subsequent reexamination of the site's lithics dated it to the Woodland Period. Little additional information about the site is known. Site 44DW0082 is located 4,576 feet (1,394.8 meters) northwest of the APE on a well-drained terrace on the north bank of Double Branch Creek. Site 44DW0082 is unevaluated for National Register eligibility (DHR n.d.).

Sites 44SX0229 and 44SX0230 were first identified by Gray and Pape in 1989 during initial fieldwork of the Solo Pipeline corridor. The sites each contain unknown pre-contact components identified by shovel testing and surface survey. Artifacts recovered were primarily quartzite flakes/shatter. Site 44SX0229 is located 5,244 feet (1,598.4 meters) east of the APE on an eroded bank overlooking a small tributary of Sappony Creek. Site 44SX0230 is nearby, located 4,917 feet (1,498.7 meters) east of the APE on an upland, well-drained terrace overlooking a minor tributary of Sappony Creek. Gray and Pape recommended both sites not eligible for listing in the National Register. Sites 44SX0229 and 44SX0230 are currently unevaluated for listing in the National Register (DHR n.d.).

Site 44SX0231 is a multicomponent pre-contact/historic site identified by Gray and Pape in 1989. Surface survey of an agricultural field identified a light pre-contact lithic scatter including unknown bifaces, quartzite flakes, shatter, Williamson chert scatter, and core fragments. Subsequent review of the site material by the William & Mary Center for Archaeological Research (W&MCAR) identified the pre-contact component as primarily Paleo-Indian. The historic component included brick, whiteware, ironstone, and glass fragments. Gray and Pape recommended Phase II testing for the Paleo-Indian component. Site 44SX0231 is located 2,917 feet (889.1 meters) northeast of the APE and is unevaluated for inclusion in the National Register (DHR n.d.).

Site 44SX0232 was identified by Gray and Pape in 1989 and consists of a Middle Archaic lithic scatter including a Morrow Mountain II projectile point. The site was identified by surface survey; subsequent shovel tests excavated at the site were negative. The site is located 2,313 feet (705 meters) northeast of the APE and is unevaluated for inclusion in the National Register (DHR n.d.).

Site 44SX0233 is a multicomponent pre-contact and historic site located 2,067 feet (630 meters) east of the APE within an oxbow of Sappony Creek. The site was first identified by Gray and Pape in 1990 during the Solo Pipeline Phase I survey. Surface examination within a plowed field revealed a moderately-dense lithic scatter that included quartzite cores, hammerstone, flakes, shatter, and other debris. Historic artifacts at the site included porcelain, whiteware, and bottle glass. Gray and Pape recommended the site for Phase II investigations; Site 44SX0233 remains unevaluated for inclusion in the National Register (DHR n.d.).

Site 44SX0234 consists of a pre-contact quarry site identified in 1990 by Gray and Pape during the Solo Pipeline Phase I survey. The site is located 1,635 feet (498.3 meters) southeast of the APE on a rise and two benches within the same oxbow of Sappony Creek. Visual inspection of a plowed area and excavation of 136 shovel tests revealed a biface preform, unspecified bifaces, cores, flakes, shatter, unworked cobble, and hammerstones. A total of 89 of the 136 excavated shovel tests were positive for pre-contact lithics. Gray and Pape recommended further Phase II/III study at the site. Site 44SX0234 is unevaluated for inclusion in the National Register (DHR n.d.).

Site 44SX0235 is a multicomponent pre-contact and historic site identified by Gray and Pape in 1990. The site is located 2,142 feet (652.9 meters) southeast of the APE on a steep rise just south of Sappony Creek. The site was identified by surface survey and shovel testing and contains a moderately-dense lithic scatter and historic architectural and domestic artifacts. Pre-contact lithics include quartzite flakes/shatter, an undiagnostic projectile point, medial fragment, and debris. Historic material found at the site includes glass, brick, stoneware, pearlware, and whiteware. Gray and Pape recommended the site for further archaeological testing. Site 44SX0235 is unevaluated for inclusion in the National Register (DHR n.d.).

The final site within one mile of the APE, Site 44SX0236 is a multicomponent pre-contact and historic site first identified in 1990 by Gray and Pape. The site includes Early and Middle Archaic pre-contact components, as well as a historic component. Site 44SX0236 is located 2,874 feet (876 meters) southeast of the APE on a slight rise south of Sappony Creek. Pre-contact material from the site includes LeCroy and Halifax projectile points, quartzite flakes, cores, shatter, and checked pebble, an unknown stemmed point, and one chipped stone axe. Historic artifacts include brick and whiteware. Artifacts were collected during surface survey; shovel testing at the site failed to reveal subsurface integrity. Therefore, Gray and Pape recommended no further archaeological work at Site 44SX0236. The site is unevaluated for inclusion in the National Register (DHR n.d.).

5.3 American Battlefield Protection Program (ABPP) Areas

The V-CRIS review also revealed that the southeast limit of the APE overlaps the Battle of Sappony Church (VA067) Study Area and Potentially National Register-eligible (PotNR) Area as defined by the National Park Service (NPS) American Battlefield Protection Program (ABPP) (V-CRIS 2023) (see **Figure 4**). The NPS ABPP is a federal program created in 1996 to promote the preservation of significant historic battles on American soil. The known limits of major historic battles are defined by the NPS ABPP and provided by the DHR within V-CRIS for reference. The dataset includes boundaries defined for principle battlefields of the Civil War as identified in *Civil War Sites Advisory Commission Report Update and Resurvey* (NPS 2009).

Three area types are defined by the NPS ABPP: Study Areas, Core Areas, and PotNR Areas. Study Areas are those areas with tactical context and visual settings and reflect the historic extents of battlefields as they are known through research and on-site investigations. Core Areas are defined as the areas of direct conflict as they are known through research and on-site investigations. Core Areas include critical land where fighting occurred and casualties were incurred and are made up of those places where combat engagements and key associated actions and features were located. Finally, PotNR Areas may include the battlefield Study Area or the battlefield Core Area(s). Lands within the PotNR boundaries should be considered worthy of further attention, although future evaluations may reveal more or less integrity than indicated by the NPS ABPP surveys (NPS 2009). Study, Core, and PotNR Areas are designed for reference and to inform upon eligibility determinations, but do not include additional historic protections.

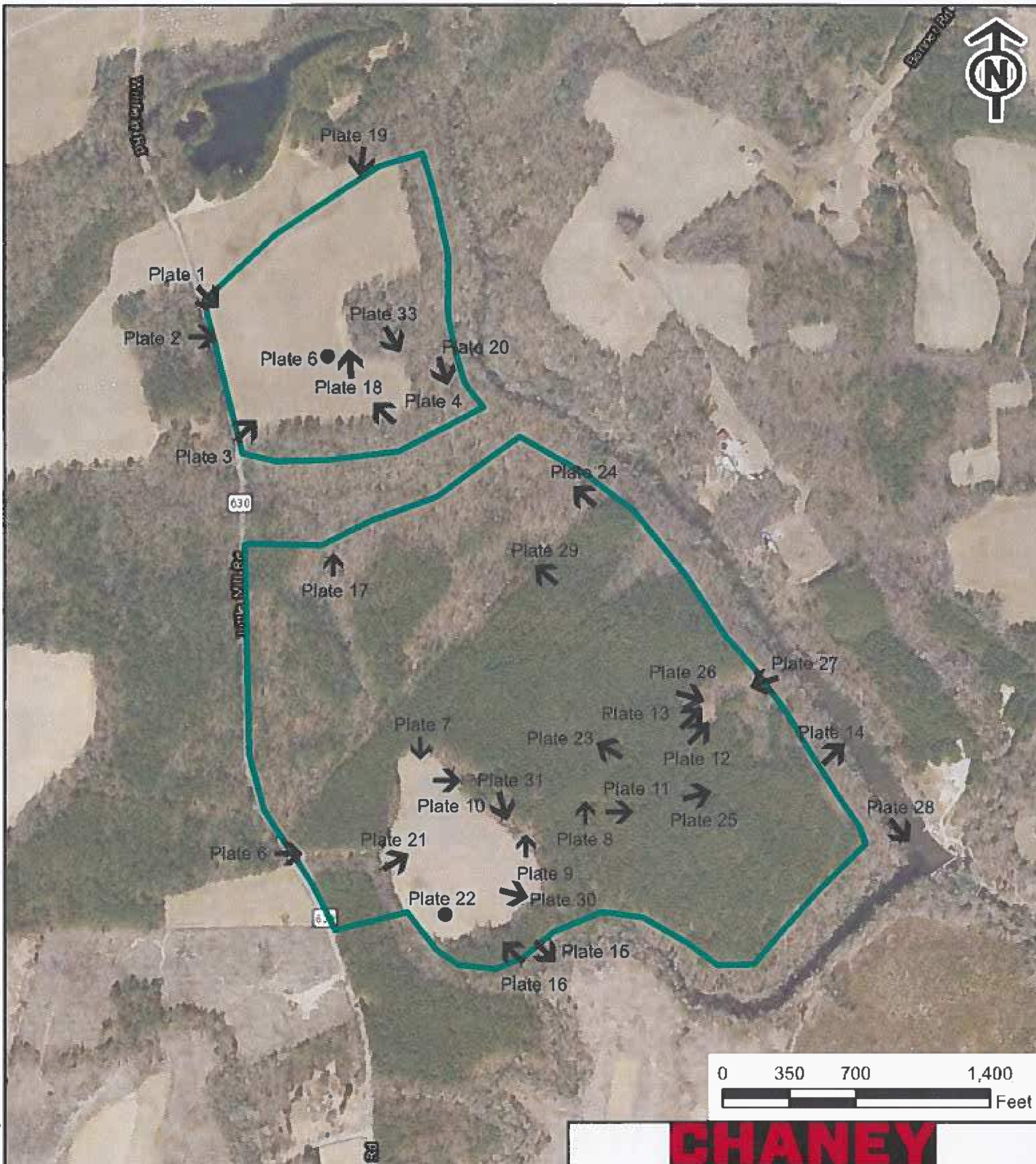
The southeast limit of the APE overlaps both the Study Area and PotNR Area associated with the 1864 Battle of Sappony Church (VA067). The APE does not overlap the battlefield's Core Area. The portion of the Study Area which overlaps the APE corresponds with the path of approach of Union cavalry under General Wilson just prior to encountering General Hampton's Confederate forces at Sappony Church. A detailed summary of the battle is presented in Section 4.2.2.

6.0 PEDESTRIAN RECONNAISSANCE

Dewberry's RPA-certified archaeologist conducted a site visit of the APE on June 13, 2023. The purpose of the reconnaissance was to document existing conditions within the APE, as well as to identify potential evidence of past ground disturbance, or possible archaeological resources. Photographs were taken during the site visit to document existing conditions (**Figure 14**). The APE consists of two, discontinuous areas on the east side of Little Mill Road (SR 630) south of its intersection with McKenney Highway (SR 40). These APE areas consist of two proposed quarry pits separated by a tributary of Sappony Creek flowing west to east and are known as the North Pit and South Pit.

The North Pit portion of the APE primarily contains a large, irregularly shaped agricultural field with forested areas east and south of the field (**Plate 1**). The west limit of the APE extents to Little Mill Road (SR 630). The agricultural field within the North Pit APE was recently tilled and planted with a young peanut crop at the time of site visit (**Plate 2**). Ground surface visibility within the field was between 50% and 75%. In general, the topography of the peanut field is flat. Elevations are slightly higher in the center of the field and gently slope down to the south and east (**Plate 3**). The forested portions of the North Pit APE east and south of the peanut field primarily contain mixed hardwood species such as White Oak, Northern Red Oak, Chestnut Oak, Hickory, Dogwood, American Beech, and some Loblolly Pine. Undergrowth species include Holly, Blackgum, Sourwood, various ivy species, ferns, grasses, and saplings (**Plate 4**). Within the eastern extent of the North Pit APE, this forest gently slopes down to the east. Outside the APE, slope sharply increases down to Sappony Creek. A small tributary of Sappony Creek winds through the North Pit APE, beginning on the eastern border of the peanut field roughly in the center of the North Pit APE and continuing east through the mixed hardwood forest. Within the southern extent of the North Pit APE, the forest gently slopes down to the south.

Plate 1: Overview of the North Pit APE. View Southeast. (MN 6/13/2023).



LEGEND

APE

Source: Virginia Geographic Information Network (VGIN) Orthoimagery, 2022

CHANEY ENTERPRISES

PLATE LOCATIONS

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 700'

DATE: March 2024

Dewberry

FIGURE 14

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Plate 2: Peanut Growth within the North Pit APE. View East. (MN 6/13/2023).

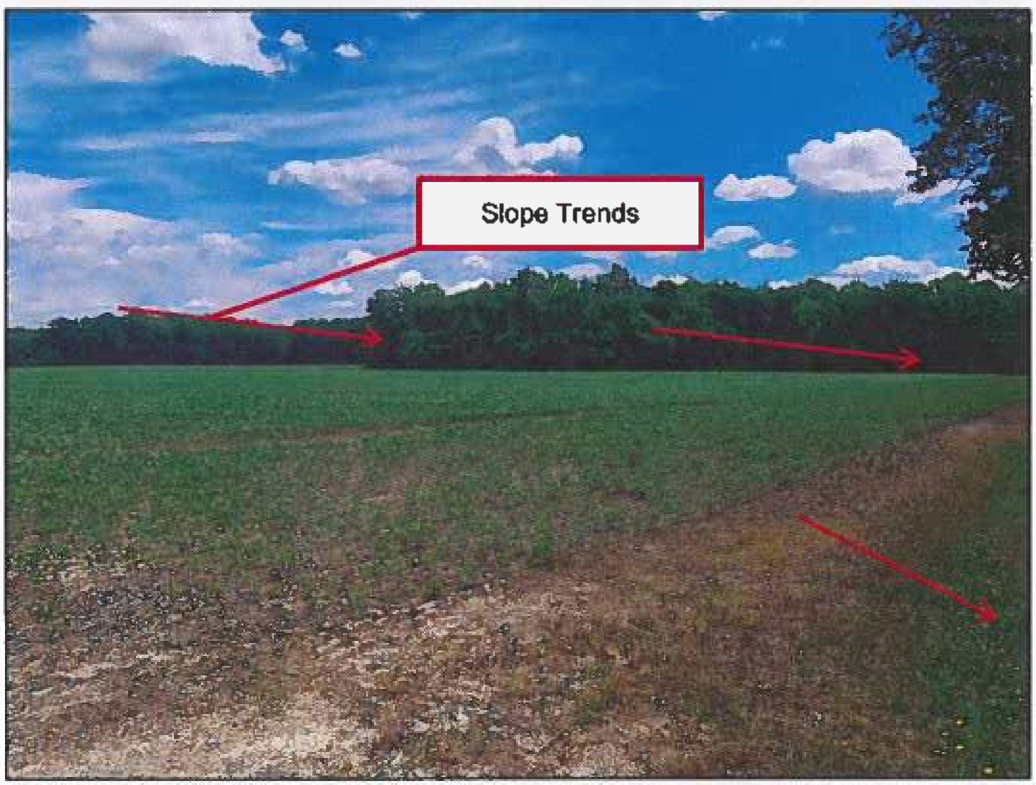


Plate 3: Topography of the North Pit APE. View Northeast. (MN 6/13/2023).

Some historic material appeared on the ground surface within the North Pit APE. Within a small area in the field where a historic residence was seen on historic maps and aerial photographs from 1919 to 1976, a very light scatter of historic ceramics and glass appeared on the ground surface (**Plate 4**). Items observed on the surface include porcelain and whiteware sherds as well as aquamarine and colorless glass (**Plate 5**). No artifacts were collected during the site visit. The forested portion of the North Pit APE east of the peanut field contained discarded refuse including a recent metal bedframe and a galvanized steel bucket. No further cultural resources or potential buried archaeological sites were observed in the North Pit portion of the APE. Outside of the tilled peanut field, no signs of significant soil disturbance were observed in the North Pit APE.

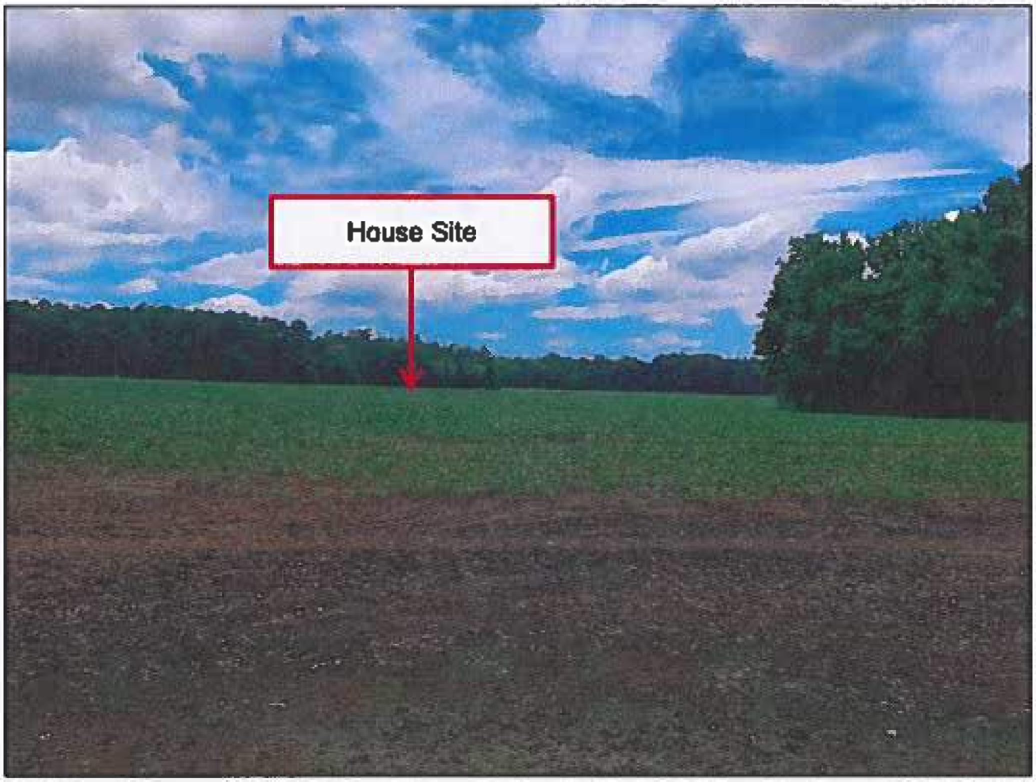


Plate 4: Site of Former Historic Residence in North Pit APE. View Northwest. (MN 6/13/2023).

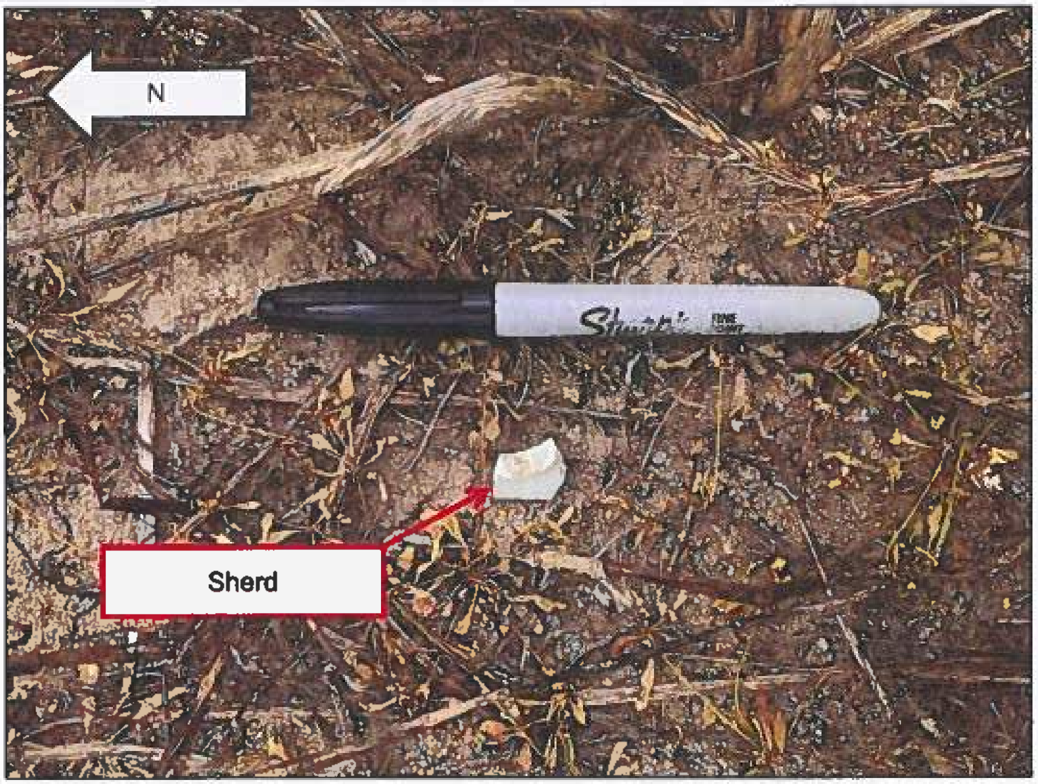


Plate 5: Porcelain Sherd on Ground Surface in North Pit APE. (MN 6/13/2023).

The South Pit portion of the APE is heavily forested with a small agricultural field in the southwest portion of the APE. An unpaved driveway extends to this field from Little Mill Road (SR 630) **(Plate 6)**. The agricultural field in the South Pit APE is smaller than that of the North Pit APE and was planted with peanut in regular east-west oriented rows at the time of site visit **(Plate 7)**. Corn husks and stalks along the edge of the field indicate that corn was recently planted and harvested. Ground surface visibility within the field was 50% at the time of site visit. The relief of the peanut field is somewhat dome-shaped; elevations are highest in the center and descend gently to the north, east, south, and west. East of the peanut field, the APE contains agricultural Loblolly Pine trees planted at regular intervals **(Plate 8)**. Machine tracks left from logging activity crisscross the pine stands. In general, the interface of the peanut field and the pine stands east of the field is coated in dense, kudzu vines **(Plate 9)**. A road trace extends from the northeast corner of the field into the pine stands. The road trace halts at dense tree growth approximately 100 feet (30.5 meters) into the forest. Push piles surround the road trace within the pine stands **(Plate 10)**.

Plate 6: Driveway Leading from Little Mill Road to South Pit APE. View East. (MN 6/13/2023).

Plate 7: Peanut Field in South Pit APE. View South. (MN 6/13/2023).

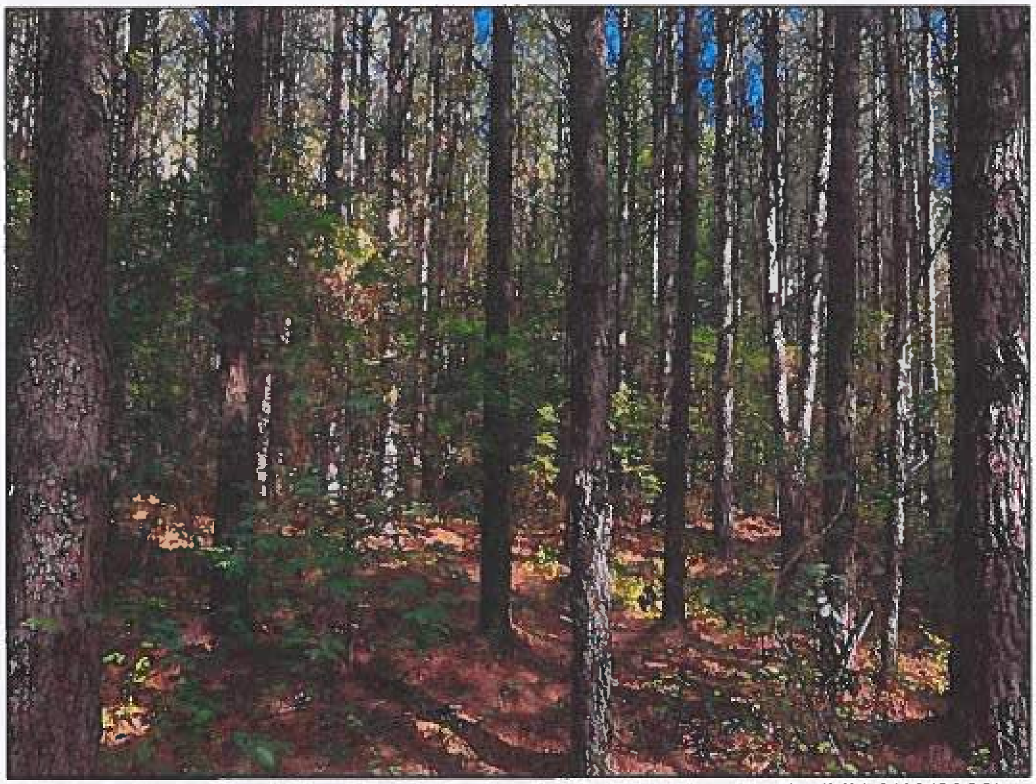


Plate 8: Agricultural Pine Stands in South Pit APE. View North. (MN 6/13/2023).

Plate 9: Dense Foliage at East Edge of Peanut Field. View North. (MN 6/13/2023).

Plate 10: Road Trace Leading from Northeast Corner of Peanut Field. View East. (MN 6/13/2023).

An access road travels from the southeast corner of the peanut field in the South Pit APE east towards Sappony Creek (**Plate 11**). Approximately 830 feet (253 meters) east of the peanut field, a fork in the road turns northeast while the main road continues east. The northeast fork continues for another 350 feet (106.7 meters) before reaching a 0.2-acre clearing (**Plate 12**). Vegetation in the clearing consists of Prairie Fleabane, Yarrow, Thistle, and Straw Grass. A collapsed wooden tree stand is located on the west border of the clearing, along with recent rebar and steel posts (**Plate 13**). The east fork of the access road continues downhill to the APE edge. From there, slope sharply increases down to Spiers Pond (**Plate 14**).

South of the peanut field, the APE contains similar agricultural pine stands. The topography gently slopes downward towards Rocky Branch Creek (**Plate 15**). At the APE edge, slope sharply increases down to the creek. Along this slope, frequent granite boulder outcrops were observed (**Plate 16**). North of the peanut field within the South Pit APE, two primary forest types were documented. These include dense agricultural pine stands northeast of the field, and mixed hardwood forest northwest of the field. The two forest types are sharply divided along a northeast-southwest oriented border visible in aerial photography (see **Figure 14**). In the northwest extent of the South Pit APE, the mixed hardwood forest is more open than the neighboring pine forest (**Plate 17**). Species observed include Oak, Hickory, Beech, and Pine similar to the forest in the North Pit APE. Topography in this area was generally flat with a gentle downward slope to the north. Overall, no surface indications of buried archaeological sites were observed in the South Pit portion of the APE. Signs of soil disturbance within the South Pit APE include the tilled peanut field and past logging activities within the agricultural pine stands.

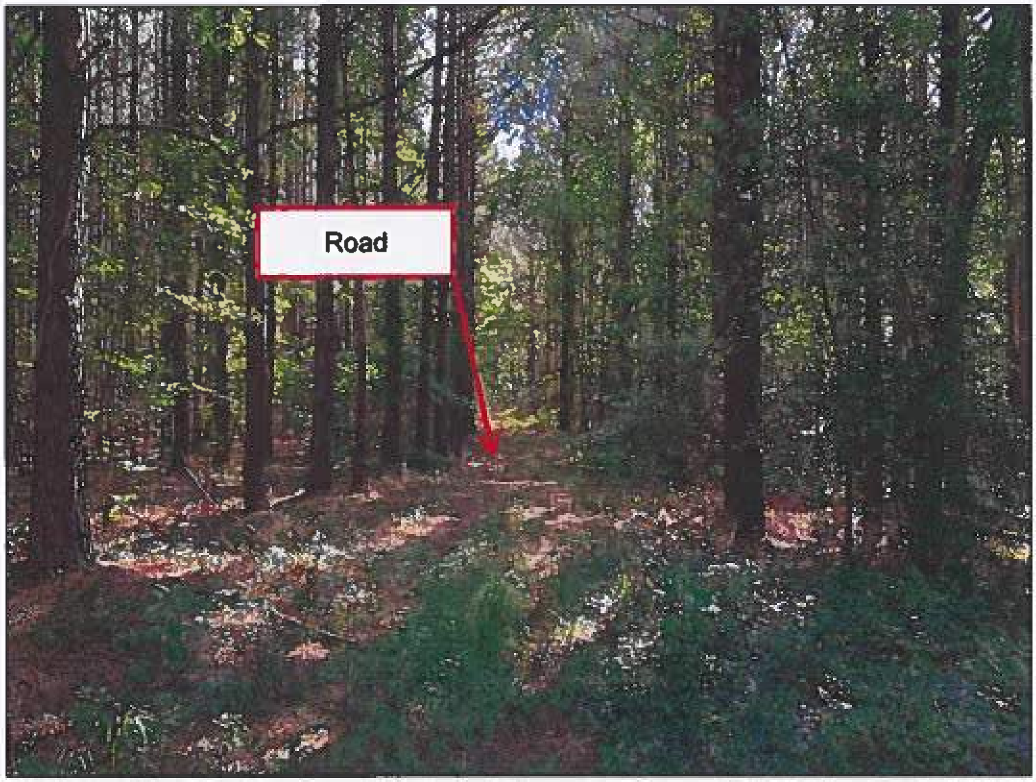


Plate 11: Access Road leading from Southeast Corner of Peanut Field. View East. (MN 6/13/2023)

Plate 12: Clearing in East Extent of South Pit APE. View Northeast. (MN 6/13/2023).

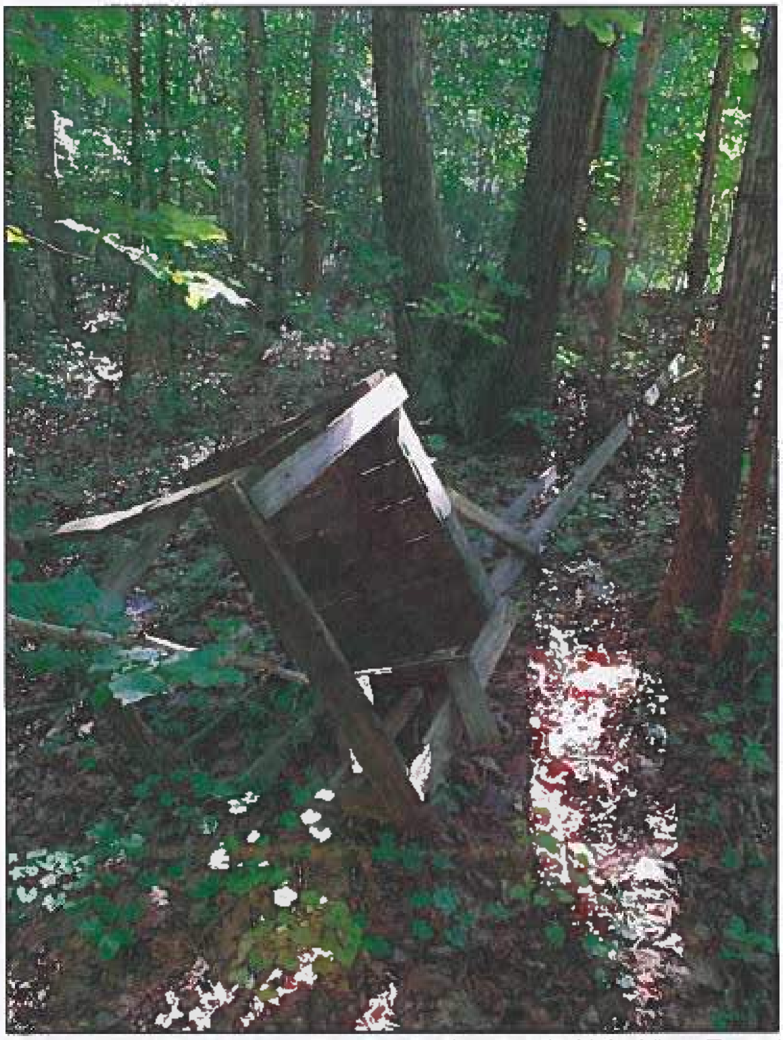


Plate 13: Abandoned Tree Stand near Clearing in South Pit APE. View East. (MN 6/13/2023).

Plate 14: Spier's Pond East of the APE. View Northeast. (MN 6/13/2023).

Plate 15: Rocky Branch Creek South of the APE. View Southeast. (MN 6/13/2023).

Plate 16: Boulder Outcrops on South Limit of South Pit APE. View Northeast. (MN 6/13/2023).

Plate 17: Mixed Hardwood Forest in Northeast Extent of South Pit APE. View North. (MN 6/13/2023).

7.0 RESEARCH DESIGN

7.1 GIS Model

Dewberry developed a GIS Model to predict areas of high, moderate, and low archaeological sensitivity within the APE and guide the Phase IB testing. The model utilized ESRI ArcView GIS software to overlay a number of environmental variables associated with human occupation trends. The archaeological model includes such variables as distance to water, distance to known archaeological sites, slope, level of disturbance, soil drainage, and mapped historic development.

LiDAR data derived from the publicly accessible NOAA 2014 USGS CMGP Post-Hurricane Sandy flyover scans were used to examine elevation, slope, and the presence of unmapped drainages and/or access roads in the APE (OCM Partners 2014). In addition, the LiDAR overlay provided a detailed ground surface hillshade map which was examined for signs of additional sensitivity such as foundation footprints.

7.2 Pre-Contact Sensitivity

Past cultural resource studies have correlated several environmental and topographic variables with known pre-contact occupation. In assessing the pre-contact sensitivity of an area, these variables, including proximity to potable water, well-drained soils, and degree of slope, are considered. The favorability factors, presented in **Table 2** below, have been adapted from previous Phase I research in eastern Virginia (Greenhorne & O'Mara, Inc. 2008; Thunderbird 2018; Dutton 2019; TRC 2021), in addition to a comprehensive study of archaeological predictive models used in the Delaware Valley and broader Middle Atlantic regions (Stewart 2019).

Table 3: Pre-Contact Archaeological Sensitivity Variables

Variables	Distance/Degree	Sensitivity Ranking
Potable Water	<150m (500ft)	High
	150m-300m (500-1000ft)	Moderate
	>300m (1000 ft)	Low
	Location within Floodplain[1]	Low
Known Archaeological Sites	≤300m (1,000ft)	High
	>300m (1,000ft)	Low
Degree of Disturbance	Extensive	Low-None
	Moderate	Moderate-Low
	Minimal/None/Unknown	High
Presence of Well-Drained Soils	N/A	High
Slope	≤15 percent	High
	>15 percent	Low

[1] If a project area is situated within a floodplain, the potential exists that past alluvial processes have resulted in deeply buried soils. Such soils may potentially hold intact and sealed pre-contact archaeological deposits.

When applying the Pre-Contact Sensitivity Variables to the GIS Model, locations that have a high ranking for at least three of the five factors and were not moderately or extensively disturbed, are considered to possess high sensitivity for pre-contact archaeological resources. Areas with at least three high rankings that show evidence of moderate to extensive disturbance would be considered to possess moderate to low archaeological sensitivity. Locations that have a high ranking for at least one of the factors are considered to possess moderate sensitivity for pre-contact archaeological resources; locations with one to two low rankings are considered to possess moderate to low sensitivity. Those locations that have a low ranking for at least three of the five factors are considered to possess low sensitivity for pre-contact archaeological resources. If a location is assessed as having experienced extensive past disturbance that location is considered to possess either low or no pre-contact archaeological sensitivity; a determination of no archaeological sensitivity would rely upon additional low rankings within the model or an indication that past disturbance had extended to a depth below potential pre-contact deposits.

Employing the GIS Model, a location with well-drained soils and minimal slope in an area within which archaeological sites have not been identified, and at a relatively long distance from potable water, would be assessed as having low pre-contact sensitivity. However, if an area is located within 150 meters (500 feet) of potable water, within 300 meters (1,000 feet) of a known archaeological site, has experienced minimal or no disturbance, and contains well-drained soils and minimal slope, this area would be assessed as having high sensitivity for pre-contact archaeological resources.

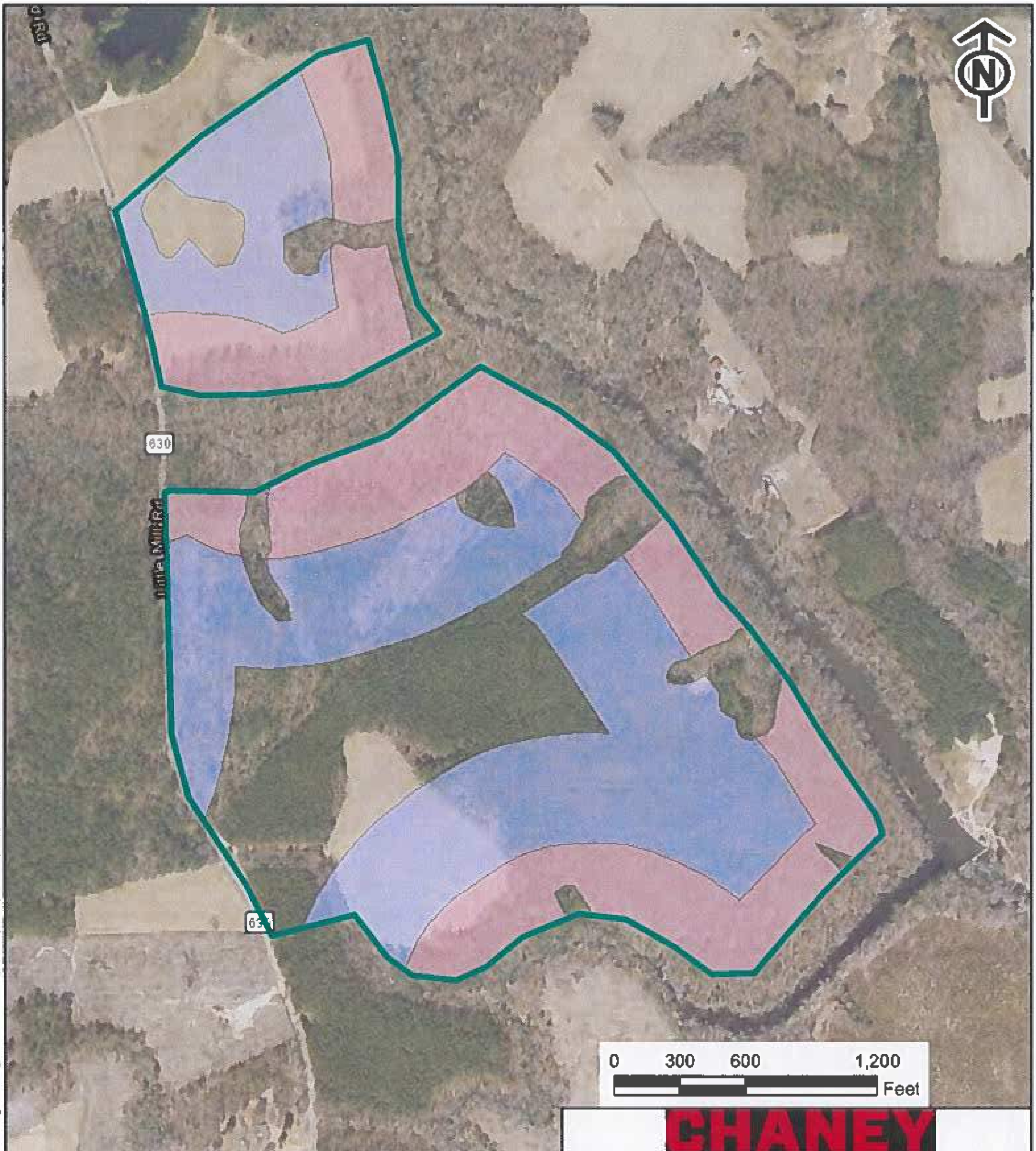
It should be noted, however, that this model presents a generalized framework of sensitivity and that the particular environmental and historical setting of an area should be factored into the pre-contact sensitivity assessment. For example, if multiple pre-contact sites within a region have been documented in areas with poorly drained soils, substantial slope, and/or at a longer distance from potable water, these commonalities would suggest a local pre-contact settlement pattern contra the expectations of the generalized model. Thus, in addition to the generalized model presented above, the pre-contact sensitivity of an area should also be evaluated in terms of local settlement patterns.

7.3 Pre-Contact Sensitivity Assessment

The pre-contact sensitivity assessment categorized areas of high, moderate, and low archaeological sensitivity in the APE. Pre-contact high sensitivity areas totaled 56 acres, while 75 acres were designated with moderate sensitivity for pre-contact archaeology. A total of 45 acres of the APE were found to have low sensitivity for pre-contact archaeology (**Figure 15**).

With respect to potable water, the high sensitivity areas are within 150 meters (500 feet) of Sappony Creek, Rocky Branch Creek, and/or the major tributary of Sappony Creek separating the North and South Pit APEs. No pre-contact archaeological sites were identified within 300 meters (1,000 feet) of the APE, based on a review of known archaeological sites (V-CRIS 2023). With respect to soils, the high sensitivity areas are located in places with well-drained soils. With respect to slope, the 56 acres of high pre-contact sensitivity contain less than 15 percent slopes. Disturbance in the entire APE, where found, generally resulted from logging and farming activities such as repeated harvesting and replanting. These activities are considered to have resulted in a minimal degree of disturbance. Areas of moderate pre-contact archaeological sensitivity are generally located within 300 meters (1,000 feet) from water but outside of 150 meters (500 feet) from water, in places with well-drained soils, and have less than 15% slope. Finally, low sensitivity areas are generally located within poorly drained soils and/or within areas of slope greater than 15%, regardless of distance to water or disturbance.

When examining local pre-contact site formation patterns, sites with pre-contact components within one mile of the APE generally fit the sensitivity model presented above. Pre-contact sites within one mile of the APE are mostly located on well-drained terraces in close proximity to Sappony Creek or a major tributary of Sappony Creek. While pre-contact site surveys along the nearby Nottoway River have identified sites within poorly drained areas (Egghart 2020d), this pattern does not hold for pre-contact sites along Sappony Creek within one mile of the APE.



LEGEND

APE

Sensitivity Level

High

Moderate

*Unshaded areas have low pre-contact sensitivity.

Source: Virginia Geographic Information Network (VGIN), 2022

CHANEY ENTERPRISES

PRE-CONTACT ARCHAEOLOGICAL SENSITIVITY

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 600'

DATE: March 2024

Dewberry

FIGURE 15

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7.4 Historic Sensitivity

Historic sources, particularly historical maps, and regional histories strongly inform upon the post-contact/historic period archaeological sensitivity (hereafter referred to as historic archaeological sensitivity) of an area. These sources indicate the location of historic residences, commercial establishments, historic roadways, and transportation routes. A mapped building or a historical reference to a structure or occupation in a particular location suggests that deposits associated with that occupation may potentially exist if the area has not been extensively disturbed. Landscape features can also inform upon the potential presence of historic resources with certain environmental characteristics like proximity to water, proximity to infrastructure, and arable land favoring the development of particular sites.

As with pre-contact archaeological sensitivity, variables were developed to evaluate historic archaeological sensitivity. These variables include proximity to mapped or known historic structures, proximity to historic roadways, proximity to known historic period archaeological sites, and degree of past disturbance. However, proximity to a mapped or known historic structure is weighted more heavily than the other variables. Therefore, an area that has experienced minimal or no past disturbance and is close to a known historic occupation would possess high historic archaeological sensitivity. An area located along a historic roadway or at a historic intersection lacking indication of a historic occupation might be considered to possess moderate to low historic archaeological sensitivity, depending on the history of development and settlement within the region. The variables which were used to formulate historic archaeological sensitivity for the APE are listed below in **Table 3.**

Table 4: Historic Archaeological Sensitivity Variables

Variables	Distance/Degree	Sensitivity Ranking
Mapped Historic Structure	N/A	High
Proximity to Historic Roadway	≤50m (164ft)	High
Potable Water	<150m (500ft)	High
	150m-300m (500-1000ft)	Moderate
	>300m (1000 ft)	Low
Known Archaeological Sites	≤ 300m (1,000ft)	High
	>300m (1,000ft)	Low
Slope	Extensive	Low-None
	Moderate	Moderate-Low
Presence of Well-Drained Soils	Minimal/None/Unknown	High
Degree of Disturbance	N/A	High
	≤ 15 percent	High
	> 15 percent	Low

Applying the Historic Sensitivity Variables to the GIS Model, areas with at least three high rankings, including proximity to a mapped or known historic resource that show evidence of moderate to extensive disturbance would be considered to possess moderate to low archaeological sensitivity. Locations that have a high ranking for one to two of the factors, with at least one of these factors being proximity to a mapped historic resource and/or roadway or proximity to known historic archaeological sites, and have not been extensively disturbed, are considered to possess moderate sensitivity for historic archaeological resources; locations with one to two low rankings are considered to possess low sensitivity. Those locations that have a low ranking for at least four of the seven factors are considered to possess low sensitivity for historic archaeological resources. If a location is assessed as having experienced extensive past disturbance that location is considered to possess either low or no historic archaeological sensitivity; a determination of no archaeological sensitivity would rely upon additional low rankings within the model or an indication that past disturbance had extended to a depth below potential historic deposits.

Again, it should be noted that the GIS Model remains a heuristic tool. The particular environmental and historical setting of an area should be factored into the historic archaeological sensitivity assessment. For example, a historic residence that predated the installation of municipal water and sewer lines was most likely associated with water and sewage shaft features. Such features, e.g., wells, cisterns, or privies, would have extended at least several feet below the historic ground surface. As such, even if that area experienced disturbance following the historic occupation, the shaft features may remain extant or partially intact. In this example, given the historic development of the area, the location of the historic structure might be considered to possess moderate historic archaeological sensitivity.

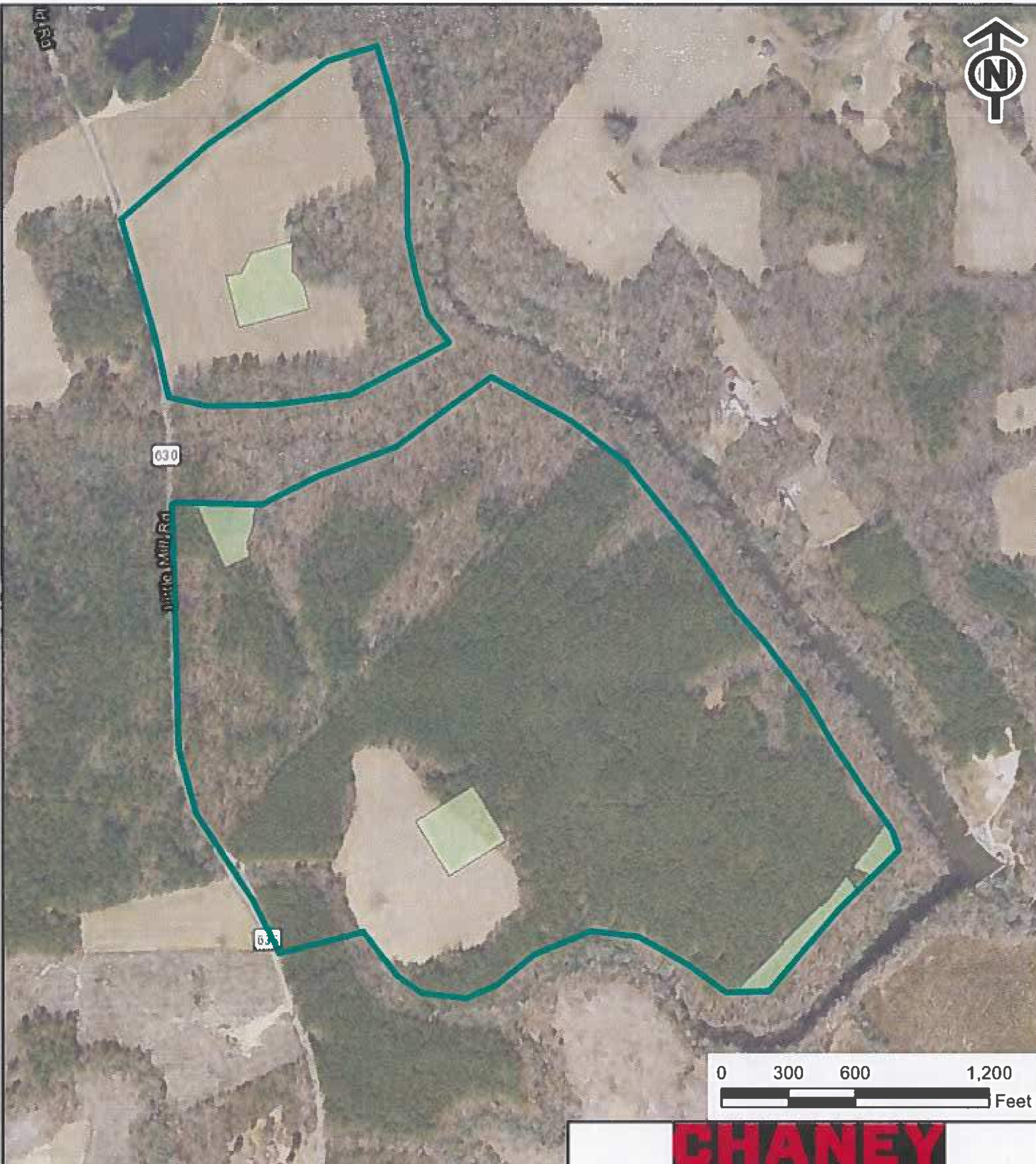
7.5 Historic Sensitivity Assessment

Using the GIS Model presented above, Dewberry evaluated the historic sensitivity of the APE. With respect to environmental factors and disturbance, the findings with respect to pre-contact sensitivity also held for historic archaeological sensitivity. With respect to historic development, including historic roadways and mapped historic structures, the earliest mapped development within the APE consisted of structures observed on the USGS 15-minute topographic Jarratt quad map in 1919. Over time, these elements gradually disappeared from the APE.

When the APE was assessed, high historic archaeological sensitivity was assigned to portions of the APE where historic structures were mapped in 1919 and 1951 and seen in aerial imagery from 1951 to 1976 (**Figure 16**). These determinations followed the review of mapped historic structures presented in Section 4.4 (see **Figures 5** through **12**).

Besides mapped structures, the southeast extent of the South Pit APE overlaps with the NPS ABPP Study Areas and PotNR Area for the Battle of Sappony Creek (VA067). As defined by the ABPP, Study Areas delineate those places with tactical context and visual settings and reflect the historic extents of battlefields as they are known through research and on-site investigations. The APE does not overlap the battlefield's Core Area, defined as the area of direct conflict known through research and on-site investigations. Seeing as military activity during the battle may have occurred where the APE overlaps the NPS ABPP Study Area, the portion of the APE which overlaps the NPS ABPP Study Area is also designated with high historic archaeological sensitivity (V-CRIS 2023).

Approximately seven acres of the 176-acre APE were assigned with high historic archaeological sensitivity. The remaining 169 acres of the APE were assessed with low historic archaeological sensitivity. No parts of the APE were assessed with moderate historic archaeological sensitivity.



LEGEND

APE

High Historic Sensitivity

*Unshaded areas have low historic sensitivity.

Source: Virginia Geographic Information Network (VGIN), 2022

CHANEY ENTERPRISES

HISTORIC ARCHAEOLOGICAL SENSITIVITY

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 600'

DATE: March 2024

Dewberry

FIGURE 16

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7.6 Sensitivity Conclusions and Phase IB Testing Plan

Dewberry developed a pre-contact and historic archaeological sensitivity assessment of the APE. Overall, 56 acres of the 176-acre APE were assessed with high pre-contact archaeological sensitivity and 75 acres with moderate pre-contact sensitivity. Seven acres of the APE were assessed with high historic sensitivity. High and moderate pre-contact and/or historic sensitivity areas were isolated for subsurface or systematic surface testing. The results of the GIS Model guided development and execution of the Phase IB testing plan, presented in Chapter 8.

8.0 ARCHAEOLOGICAL SUBSURFACE SURVEY

Following the sensitivity assessment, a Phase IB testing plan was developed within the GIS Model with the goal of testing the APE for previously unknown archaeological resources. Field methods in the Phase IB plan were based on conventional archaeological methods used throughout the Middle Atlantic region and the general requirements of the DHR (DHR 2011, rev. 2017). The field methodology and sampling strategy were designed to identify the presence/absence of archaeological resources within the APE. In doing so, the methodology was designed to identify and describe previously unknown archaeological resources; delineate vertical and horizontal disturbances; and obtain sufficient information regarding the stratigraphic and overall archaeological integrity of identified archaeological resources.

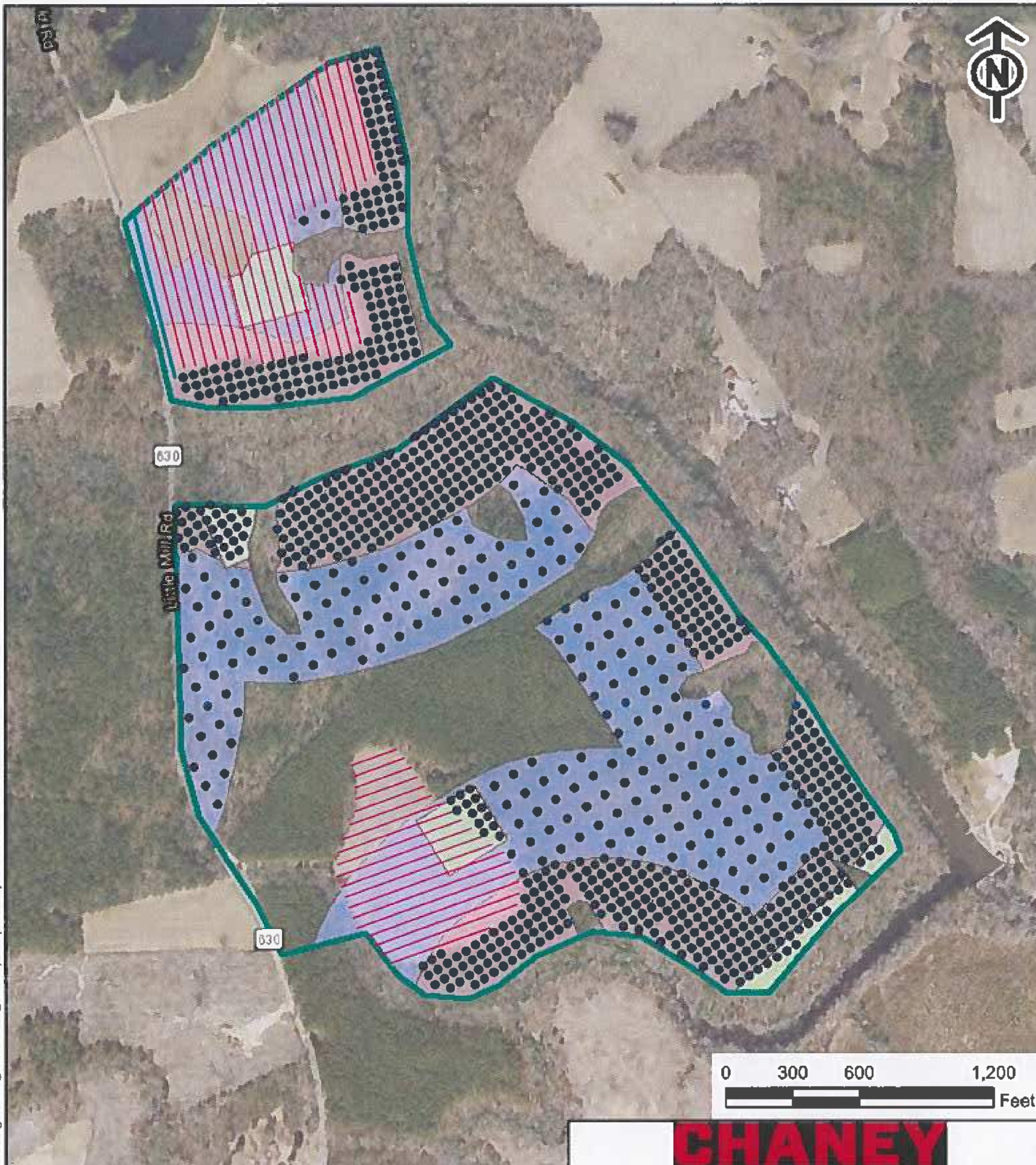
8.1 Phase IB Testing Plan

Field methods outlined in the testing plan consisted of both shovel testing and systematic surface survey. In areas of high pre-contact and/or high historic archaeological sensitivity, the research plan calls for either subsurface shovel testing consisting of linear transects of 15-inch diameter cylindrical holes plotted on a 15-meter (50-foot) interval grid or systematic surface survey along transects spaced at 15-meter (50-foot) intervals, depending on ground conditions. Shovel tests were completed by hand and extended at least four inches (10 centimeters) into sterile subsoil; or, where terminated by a rock, root, or compact impasse. Excavated soil from shovel tests was passed through a ¼-inch mesh screen to ensure uniform recovery of cultural material. Surface survey was only employed in recently plowed agricultural fields where ground visibility was above 50%. Surface survey was conducted along linear transects spaced at 15-meter (50-foot) intervals. Surveyors walked each transect and examined the ground surface for signs of buried archaeological resources, not limited to flakes, shatter, projectile points, sherds, glass shards, small finds, and features. At least two judgmental shovel tests were placed where a concentration of surface artifacts was collected in order to vertically and horizontally delineate potential archaeological resources.

In areas of moderate pre-contact archaeological sensitivity, shovel testing was employed at a 30-meter (100-foot) interval due to the reduced archaeological sensitivity. Surface survey was also employed in moderate sensitivity zones with high surface visibility at 15-meter (50-foot) transect intervals. In areas of low pre-contact and/or historic archaeological sensitivity, the ground surface was examined by pedestrian reconnaissance.

Radial tests were conducted around grid-based shovel tests containing pre-contact material and/or significant historic deposits without adjacent positive shovel tests. Radial tests were placed along cardinal directions with the prevailing shovel test transects where possible at 7.5 meters (25 feet), from the positive test. Radial testing was conducted to determine the potential isolation and/or vertical and horizontal extent of exposed cultural deposits.

The Phase IB subsurface survey was conducted over two weeks from February 19, 2024 to March 1, 2024. Following the survey plan, 38 surface survey transects were plotted in areas with high ground surface visibility. A total of 990 grid-based shovel tests were plotted within the high and moderately sensitive areas in the APE. Of these, 194 shovel tests were precluded from survey due to unfavorable conditions such as high slope, saturated soils, or significant ground disturbance (**Figure 17**). In addition, 54 judgmentally placed tests were excavated in order to further refine archaeological deposits. A total of 22 radial tests were placed around grid-based shovel tests positive for cultural material with no adjacent positive tests. Therefore, 872 total shovel tests were excavated in order to test the APE for the presence or absence of archaeological resources.



LEGEND

- Shovel Test Pits
- Surface Survey Transects
- APE
- High Historic Sensitivity

Pre-Contact Sensitivity

- High
- Moderate

*Unshaded areas have low sensitivity.

Source: Virginia Geographic Information Network (VGIN), 2022

CHANEY ENTERPRISES

SHOVEL TESTS AND SURFACE SURVEY TRANSECTS

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 600'

DATE: March 2024

Dewberry

FIGURE 17

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8.2 Existing Conditions

Site conditions during the Phase IB subsurface survey were largely consistent with conditions observed during the site visit in June 2023 and presented in Chapter 6. Since 2023, the large agricultural field in the North Pit APE has been harvested. In place of crops, low, sparse grasses, Spotted Deadnettle, and clover had begun to sprout (**Plates 18** and **19**). The mixed hardwood forest within the eastern and southern extents of the North Pit APE remained unchanged from June 2023 (**Plate 20**).

Plate 18: Plant Growth within the North Pit APE Agricultural Field. View North. (MN 2/19/2024).

Plate 19: Overview of the North Pit APE Agricultural Field. View West. (MN 2/19/2024).

Plate 20: Mixed Hardwood Forest within the North Pit APE. View South. (MN 2/20/2024).

Similarly, the South Pit APE was largely unchanged from 2023. The smaller agricultural field in the southwest extent of the South Pit APE had also been harvested and allowed to grow low, sparse grasses and clover (**Plates 21** and **22**). The agricultural pine forest dominating much of the South Pit APE remained unchanged from the 2023 site visit (**Plate 23**). The mixed hardwood forest covering the northern and northwestern extents of the South Pit APE was also unchanged from 2023 (**Plate 24**). Landscape features observed within the South Pit APE in 2023 including access roads, the grassy clearing, and frequent bedrock outcrops on steep slopes were again observed during the 2024 subsurface survey (**Plates 25 – 27**). Spier's Pond, located at the confluence of Sappony Creek and Rocky Branch Creek southeast of the APE, was at full pool following heavy rain (**Plate 28**).

Plate 21: Agricultural Field within the South Pit APE. View Northeast. (MN 2/26/2024).

Plate 22: Ground Conditions within the South Pit APE Agricultural Field. (MN 2/26/2024).

Plate 23: Agricultural Pine Forest within South Pit APE. View North. (MN 3/1/2024).

Plate 24: Mixed Hardwood Forest in North Extent of South Pit APE. View North. (MN 2/27/2024).

Plate 25: Access Road in South Pit APE. View East. (MN 3/1/2024).

Plate 26: Grassy Clearing in South Pit APE. View East. (MN 2/28/2024).

Plate 27: Bedrock Outcrops in Northeast Extent of South Pit APE. View West. (MN 2/28/2024).

Plate 28: Spier's Pond from Sappony Creek. View South. (MN 2/27/2024).

8.3 Stratigraphy

According to the NRCS Web Soil Survey, the majority of shovel tests within the North Pit APE intersect with the Altavista sandy loam soil (1A). In general, excavated soil profiles were consistent with the known soil pedon (see **Table 1**). Shovel tests in the North Pit APE usually identified a dark brown (10YR 3/3) sandy or silty loam extending to between 10 and 20 cm bgs above a very pale brown (10YR 7/4) loamy sand or sand extending to around 40-70 cm bgs. Sterile subsoil was identified as a brownish yellow (10YR 6/8) sandy clay; shovel tests terminated between 55 and 100 cm bgs. 15-30% quartzite pebble gravel was frequently observed within the subsoil, along with some smoky quartz crystals. The exposed soil profiles are interpreted as the Ap-horizon atop an E-horizon above a Bt1-horizon (subsoil). The BE-horizon occasionally observed in 1A soils appeared rarely below the E-horizon within the North Pit APE, particularly within shovel tests 65, 73 through 77, and 83. Representative shovel test profiles are presented in **Appendix D**.

Truncated soil profiles appeared in isolated locations within the North Pit APE, such as shovel tests 113 through 117, which recorded a thin Ap-horizon atop subsoil or subsoil at surface. These tests were located on opposite slopes of an unnamed tributary of Sappony Creek. A dense pebble concentration within the E-horizon and bedrock impasses were encountered at shovel tests 133, 134, and 137 near a steep slope to the southeast into Sappony Creek. Judgmental shovel tests placed within the agricultural field to define surface finds (shovel tests J1 through J47) typically identified a deeper than expected brown (10YR 4/3) Ap-horizon extending to between 25 and 30 cm bgs.

Shovel tests within the South Pit APE intersect with variations of Slagle fine sandy loam soils (25A, 25B). Exposed soil profiles in the South Pit APE generally exhibited a very dark brown (10YR 2/2) silt loam extending to around 20 cm bgs above brown (10YR 4/3) or very pale brown (10YR 7/3) sandy loam or sandy clay loam extending to between 40 and 70 cm bgs. Subsoil was identified as a brownish yellow (10YR 6/8) sand clay; shovel tests terminated between 65 and 100 cm bgs. Subsoil was occasionally compact and often contained 10-50% quartz pebble gravel with some rounded quartzite cobbles. These soil levels are consistent with the known pedon for Slagle soils and are interpreted as an Ap-horizon above a Bt1-horizon and Bt2-horizon (subsoil) (see **Table 1**). Representative shovel test profiles are presented in **Appendix D**.

Variations to the expected pedon in the South Pit APE generally appeared in sloped and/or hydric areas. For example, shovel tests within the moderate sensitivity zone in the northwest extent of the South Pit APE (shovel tests 164-182; 193-198; and, 217-222) contained very saturated soils. Where excavated, these tests exhibited a gray (10YR 5/1) sandy loam extending to 15 cm bgs above light olive brown (2.5Y 5/4) Bt-horizons. Shovel tests here often terminated at pooling groundwater. Shovel tests were similarly hydric surrounding a small drainage pond near shovel test 660 (**Plate 29**). Shovel tests excavated into the north-facing slope at the northern extent of the South Pit APE were generally hydric and shallow; these tests extended into the Emporia-Slagle complex soil (12C) (see **Table 1**).

Plate 29: Natural Drainage Pond in Northeast Extent of South Pit APE. View North. (MN 2/28/2024).

Soil levels in the South Pit APE were fairly consistent when excavated; however, shovel tests were precluded from survey in areas of high slope, standing water, or visible disturbance (see **Figure 17**). Roadside berm disturbance prevented excavation at tests 161-163; 167; 168; and, 209-210. As mentioned, saturated soils precluded excavation at shovel tests 172-173; 175; 181-182; 196-198; and 220-222. Moderately high slopes and saturated soils frequently precluded shovel testing at the northernmost and northeastern-most extents of the South Pit APE (i.e. 791-791; 787-790; 696-698; 693-695; etc.). Steep, rocky slopes were identified along tributaries draining east into Sappony Creek; shovel tests here were skipped, such as shovel tests 906; 931-932; 961; 968; and 989-990. Finally, soil disturbance was identified along the southern interface of the agricultural field (shovel tests 183; 189; 199; 223; etc.) (**Plate 30**) and at an area of historic sensitivity near the center of the South Pit APE (shovel tests 284-285; 295-299; and 318-323) (**Plate 31**). These tests were often omitted where ground disturbance was visible through push piles and tire ruts. Observed disturbance resulted from field maintenance and/or logging practices.

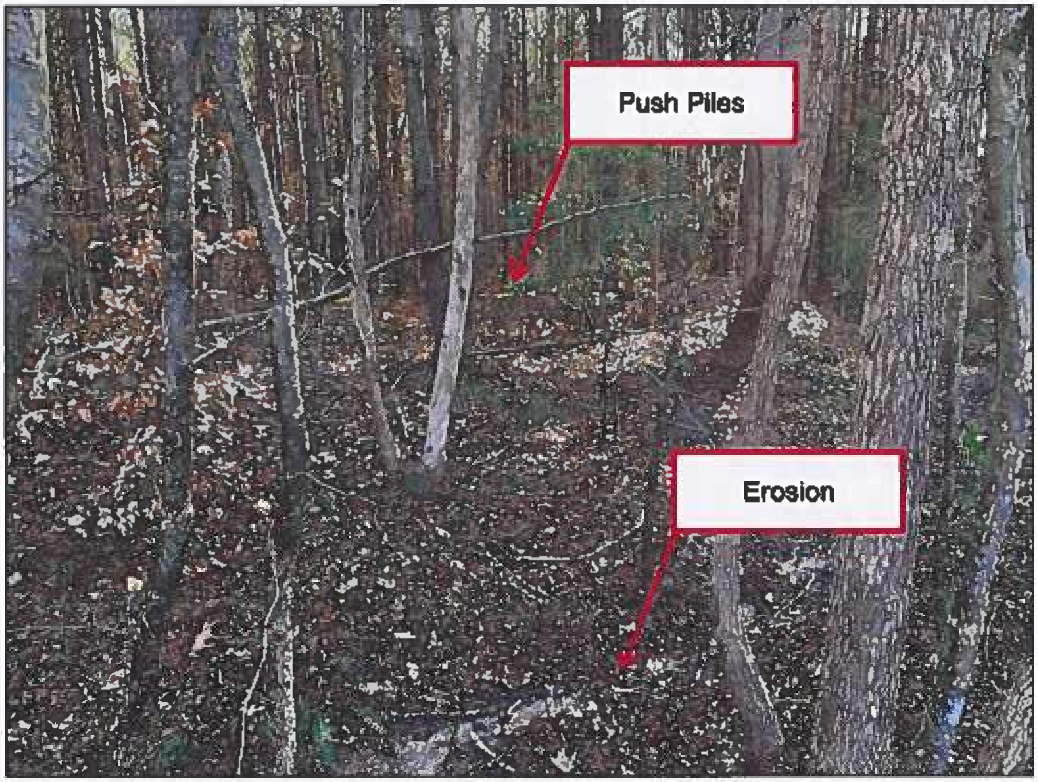


Plate 30: Push Piles and Eroded Soils at Agricultural Field/Forest Interface. View Southeast. (MN 2/26/2024).

Plate 31: Disturbance at Historic Sensitivity Zone in South Pit APE. View South. (MN 3/1/2024).

8.4 Cultural Material

Dewberry's subsurface survey of the discontinuous APE recovered a total of 361 artifacts. **Appendix D** presents a catalog of retained artifacts sorted by shovel test, stratum, period, functional group, material, class, type, and description. Artifact assemblages from the North Pit and South Pit portions of the APE are discussed separately below.

8.4.1 North Pit APE

Phase IB survey of the North Pit portion of the APE recovered 144 artifacts dating to recent or historic time periods and one pre-contact artifact (n=145, 40%). The majority (n=140, 97%) of the recent and historic artifacts were recovered within a concentrated area in the south-central portion of the North Pit where a map documented structure was identified between 1919 and 1976. This artifact concentration was designated Site 44SX0484 and registered with the DHR (**Figure 18**).

Archaeological survey of the North Pit APE began with systematic surface survey of the agricultural field which comprises most of the North Pit. A total of eight artifacts were collected during surface survey. One pre-contact artifact, a sandstone fire-drill cap, was collected along Transect 17 in the north-central portion of the agricultural field (**Plate 32**). Judgmental shovel test J1 was placed at the location of the find, while J2 was placed 15-meters (50-feet) to the north (see **Figure 18**). No additional cultural material was recovered from the judgmental tests. At least three functionally and temporally related artifacts within a spatially restricted area are required to establish an archaeological site in Virginia (DHR 2011, rev. 2017). Therefore, the fire-drill cap recovered at judgmental test J1 is considered an isolated find and designated ISF-1.

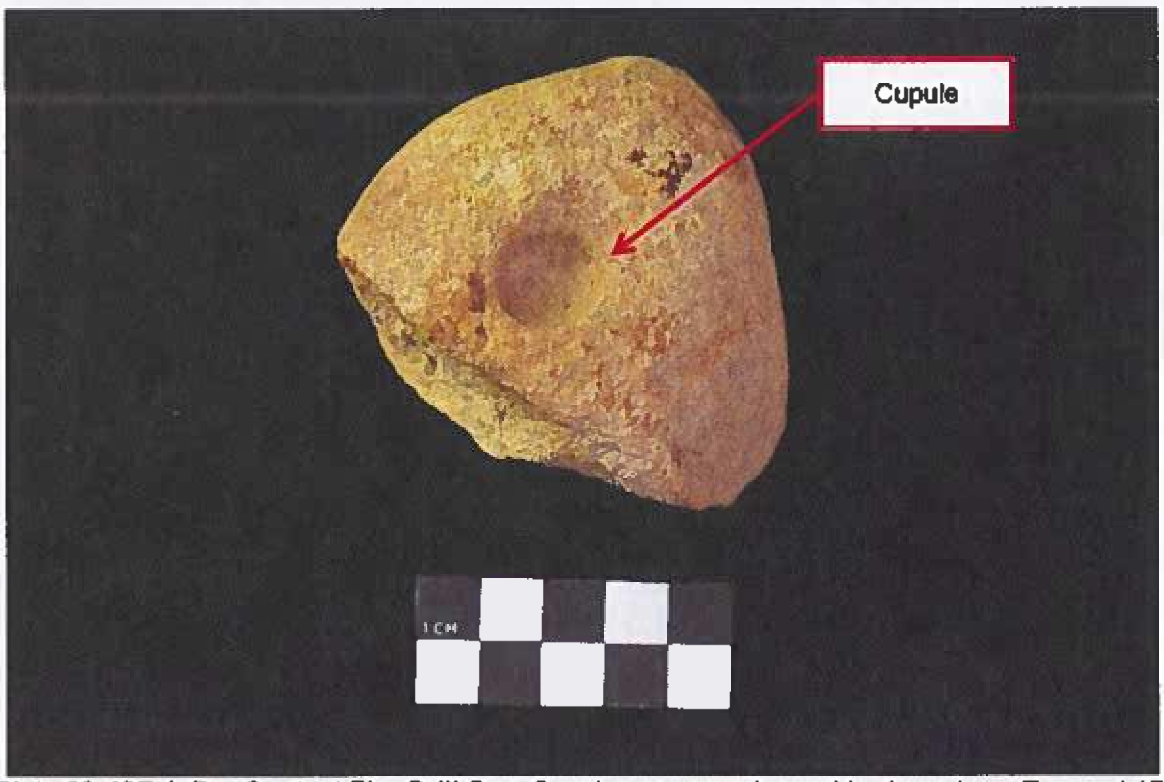
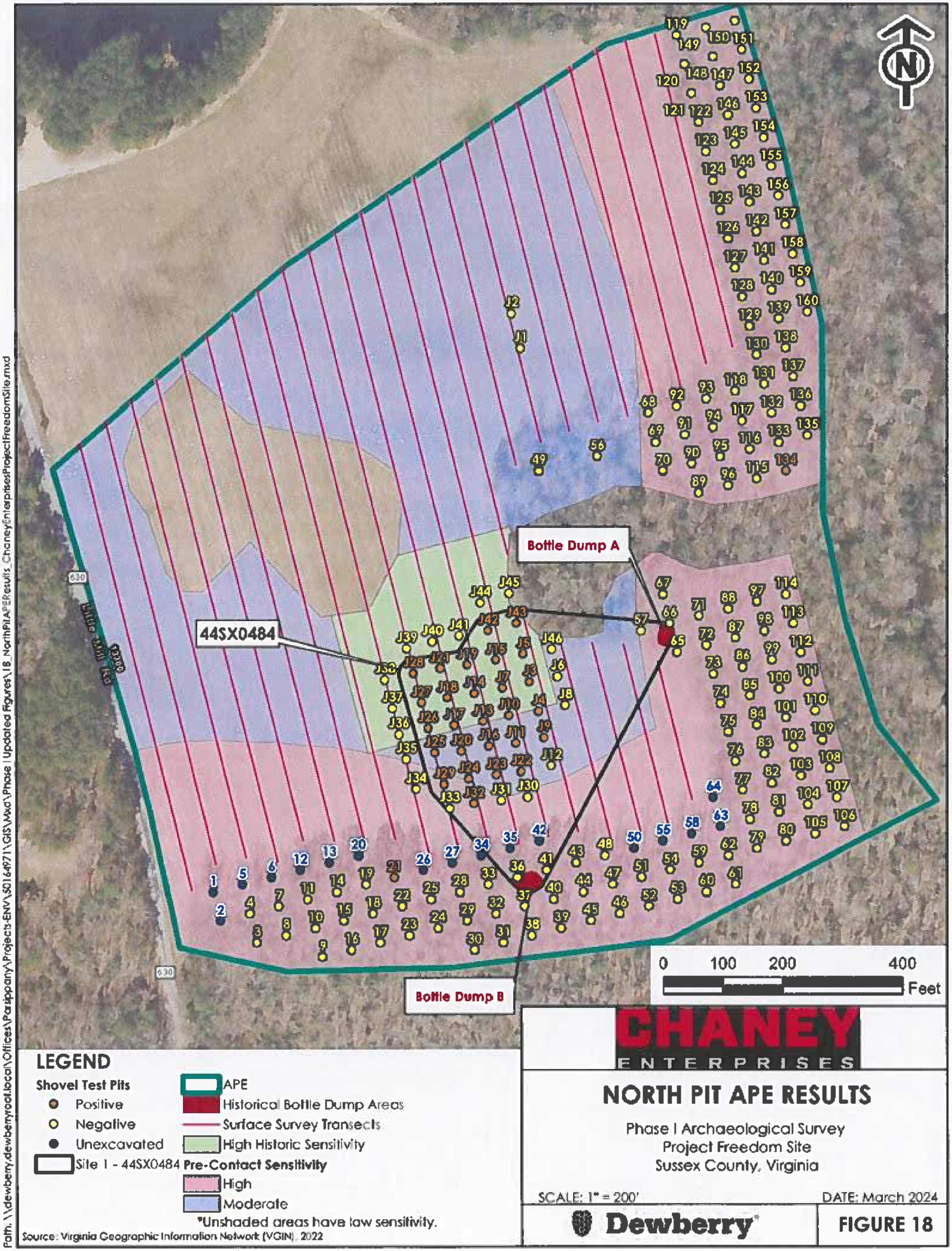


Plate 32: ISF-1, Pre-Contact Fire-Drill Cap. Cupule measures 1 cm wide, 1 cm deep. Transect 17, Surface.



Bottle Dump A
Bottle Dump B
44SX0484
630
Little Lowe Rd
0 100 200 400 Feet
LEGEND
Shovel Test Pits
Positive
Negative
Unexcavated
Site 1 - 44SX0484
APE
Historical Bottle Dump Areas
Surface Survey Transects
High Historic Sensitivity
Pre-Contact Sensitivity
High
Moderate
*Unshaded areas have low sensitivity.
Source: Virginia Geographic Information Network (VGIN), 2022
CHANEY ENTERPRISES
NORTH PIT APE RESULTS
Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia
SCALE: 1" = 200'
DATE: March 2024
Dewberry
FIGURE 18

The remaining seven surface-recovered artifacts were collected in a concentrated scatter along Transects 13 and 14 in the south-central portion of the field where a map documented domestic structure was observed on historic maps 1919 to 1976. The surface scatter consisted of four glass fragments, two whiteware sherds, and one brick fragment. Of the glass, three fragments were dated to a historic time period while one was recent colorless glass. The whiteware and brick fragments were undiagnostic. In order to define the horizontal and vertical extent of the historic artifact scatter, a total of 44 judgmental tests (J3-J46) were placed surrounding the scatter at 15-meter intervals until negative tests were achieved to north, east, south, and west, or until poorly drained/disturbed soils were encountered. This low-density historic and recent artifact scatter largely within the Ap-horizon was designated Site 44SX0484. Site 44SX0484 is discussed further in Section 8.4.1.1.

Dewberry recovered samples two bottle dumps located in forested areas within the North Pit APE near Site 44SX0484. The first dump, Bottle Dump A (BD-A) was located near shovel test 66 just within the tree line northeast of Site 44SX0484 (**Plate 33**) (see **Figure 18**). The dump contained several examples of recent to historic glassware, including recent colorless glass one-gallon carboys, cobalt blue Phillips Milk of Magnesia screw top bottles dating to 1955-1960 (**Plate 34**), amber liquor bottles from Owens-Illinois Glass Co. dating to around 1946 (**Plate 35**), and amber one-gallon carboys from Metro Glass Bottle Co. dating to between 1935 and 1949 (**Plate 36**). A second bottle dump, BD-B, was observed near shovel test 36 and primarily contained recent colorless glass carboys, Bell Mason jars, and undiagnostic metal refuse (see **Figure 18**). As BD-A and BD-B represent historic to recent items within the same historic context at Site 44SX0484, they are included in Site 44SX0484 (see **Figure 18**).

Plate 33: Site 44SX0484, Bottle Dump A Northeast of Site 44SX0484 View Southeast. (MN 2/22/2024).

Plate 34: Site 44SX0484, Cobalt Blue Phillips Milk of Magnesia Screw Top Bottle (c. 1955-1960). BD-A, Surface.

Plate 35: Site 44SX0484, Amber Liquor Bottle, Owens-Illinois Glass Co. (c. 1946). BD-A, Surface.

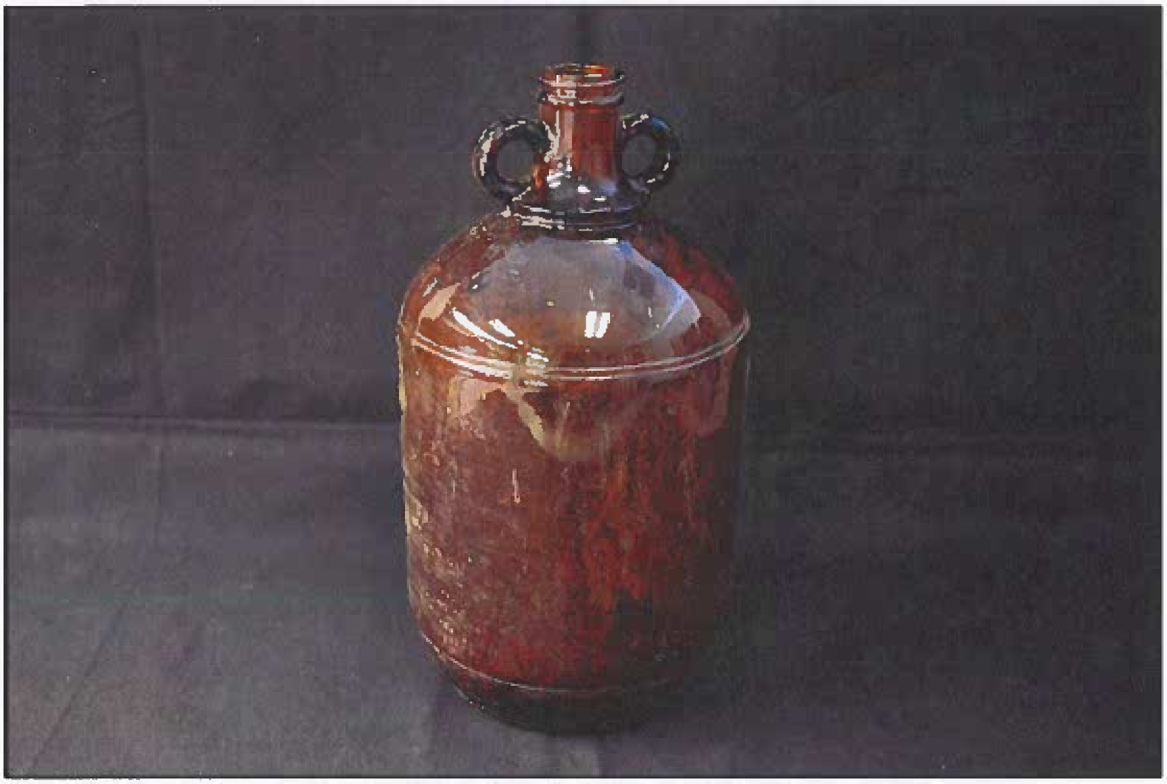


Plate 36: Site 44SX0484, Amber One-Gallon Carboy, Metro Glass Bottle Co. (c. 1935-1949). BD-A, Surface.

Outside of Site 44SX0484, shovel tests 21 and 134 contained historic material. Shovel test 21 contained one fragment of undiagnostic whiteware from the E-horizon, while test 134 contained a fragment of undiagnostic iron slag in the subsoil. In addition, a machine-made sun-colored amethyst (c. 1880-1915) medicinal bottle with a tooled finish was recovered from the surface near shovel test 151. Given the lack of historic significance for the finds, no radial testing was conducted around shovel tests 21 and 134. The finds are considered field or surface scatter and not isolated finds.

8.4.1.1 Site 44SX0484

Site 44SX0484 (see **Figure 18**), located in the south-central portion of the North Pit APE, contains a low-density historic artifact scatter identified by surface survey and judgmentally-placed shovel tests. A total of 140 artifacts were recovered from the site. Of the artifacts, 108 (79%) were recovered from the disturbed Ap-horizon, while 22 (16%) were recovered from the E-horizon. The remaining 10 artifacts were surface finds. A full artifact log is available in **Appendix C**.

A breakdown of the artifacts recovered from Site 44SX0484 reveals 58% (n=81) of the recovered artifacts are part of the Kitchen functional group, while 38% (n=53) are part of the Architecture group (**Table 5**). The remaining artifacts (n=6, 4%) fall into the Domestic group. Of the total assemblage, 87 artifacts (62%) either came from a recent time period (1974-present) or are temporally undiagnostic. A total of 53 artifacts (38%) date to the historic period (pre-1974). Of those 53 artifacts, just 26 (49%) dated to a particular historic time period (i.e. 1860-1920). The majority of these 26 artifacts dated to the late nineteenth century through the early twentieth century, or approximately 1860 through 1960. Two fragments of pearlware found in the Ap-horizon, one painted cobalt blue (c. 1815-1830) and one printed underglaze with green ink (c. 1829-1859), date to the early to mid-nineteenth century. These sherds were small, weathered, and lacked further diagnostic information.

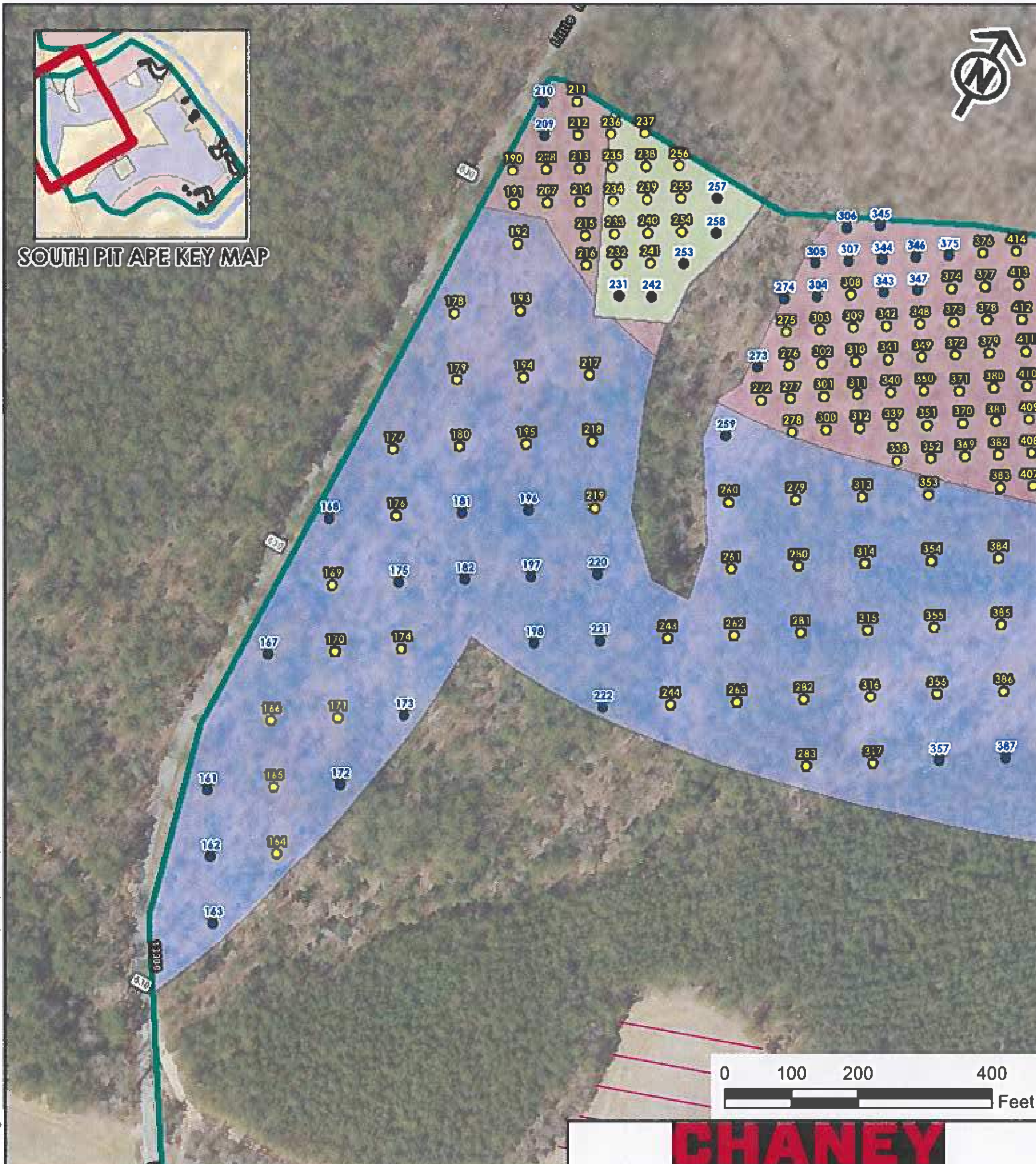
Table 5: Site 44SX0484 Artifact Breakdown

Artifact Group	Material	Artifact Type	Type	Date Range	Count
Architecture	Ceramic	Brick	Fragment	Historic	10
	Iron	Iron Nail	Cut Nail	Historic	1
			Wire Nail	Historic	2
			Unidentified	Historic	14
		Unidentified	Fragment	Historic	1
	Glass	Window	Fragment	Recent	22
	Bitumen	Asphalt	Fragment	Recent	3
	Total/Percentage of Site Assemblage				**53/38%**
Kitchen	Ceramic	Earthenware	Whiteware	Historic	11
			Pearlware	Historic	2
		Stoneware	Salt-Glazed	Historic	2
			Alkaline Glaze	Historic	1
			Albany Slip	Historic	1
			Bristol Glaze	Historic	2
			Buff Brown	Historic	1
	Glass	Machine-Made	Container	Historic	12
				Recent	47
			Amber Liquor	c. 1946	1
			Amber Carboy	1935-1949	1
	Total/Percentage of Site Assemblage				**81/58%**
Domestic	Iron	Slag	Fragment	Historic	1
	Glass	Machine-Made	Cobalt Blue	Historic	3
			Milk	Historic	1
			Phillips Milk of Magnesia	1955-1960	1
	Total/Percentage of Total Assemblage				**6/4%**
Artifact Total					**140/100%**

Despite the earlier pearlware sherds, the assemblage as a whole is consistent with the historic domestic residence known to exist at Site 44SX0484 from 1919 through approximately 1976 (see **Figures 9-12**). Items predating 1919, such as the pearlware sherds, are interpreted as heirloom artifacts. Following demolition and removal of the structure between 1973 and 1976, historic aerial imagery shows the former house site was plowed and incorporated into the surrounding agricultural field. Plowing, harvesting, and replanting has continued at Site 44SX0484 annually through the present. Therefore, there is a significant level of disturbance within the Ap-horizon and mixture of recent and historic material throughout the Ap and E-horizons. Both BD-A and BD-B are surface bottle dumps containing historic material mixed with recent refuse and are not considered intact. Further, the bottle dumps will not yield significant new historic information about Sussex County. Therefore, the research potential of Site 44SX0484 has been exhausted following Dewberry's Phase IB survey. Site 44SX0484 is recommended not eligible for listing in the National Register at the Phase I level; no further archaeological work is recommended at the site.

8.4.2 South Pit APE

Phase IB survey of the South Pit portion of the APE recovered one historic stoneware vessel, 211 pre-contact lithic artifacts, and four charcoal samples from pre-contact contexts (n=216, 60%). Most of the pre-contact cultural material was recovered from nine isolated lithic scatters within the southeastern, eastern, and northeastern extents of the South Pit APE. These lithic scatters were designated Sites 44SX0485, 44SX0486, 44SX0487, 44SX0488, 44SX0489, 44SX0490, 44SX0491, 44SX0492, and 44SX0493 and registered with the DHR. The remaining pre-contact lithics recovered from the South Pit APE include four isolated finds, ISF-2 through ISF-5 (**Figures 19A-19G**). Isolated finds are discussed below; Sites 2 through 10 are discussed separately in Sections 8.4.2.1 through 8.4.2.9



LEGEND

Shovel Test Pits
- Positive
- Negative
- Unexcavated
- Site Boundary
- APE
- Surface Survey Transects
- High Historic Sensitivity

Pre-Contact Sensitivity
- High
- Moderate

*Unshaded areas have low sensitivity.

Source: Virginia Geographic Information Network (VGIN), 2022

CHANEY ENTERPRISES

SOUTH PIT APE RESULTS

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 200'

DATE: March 2024

Dewberry

FIGURE 19A

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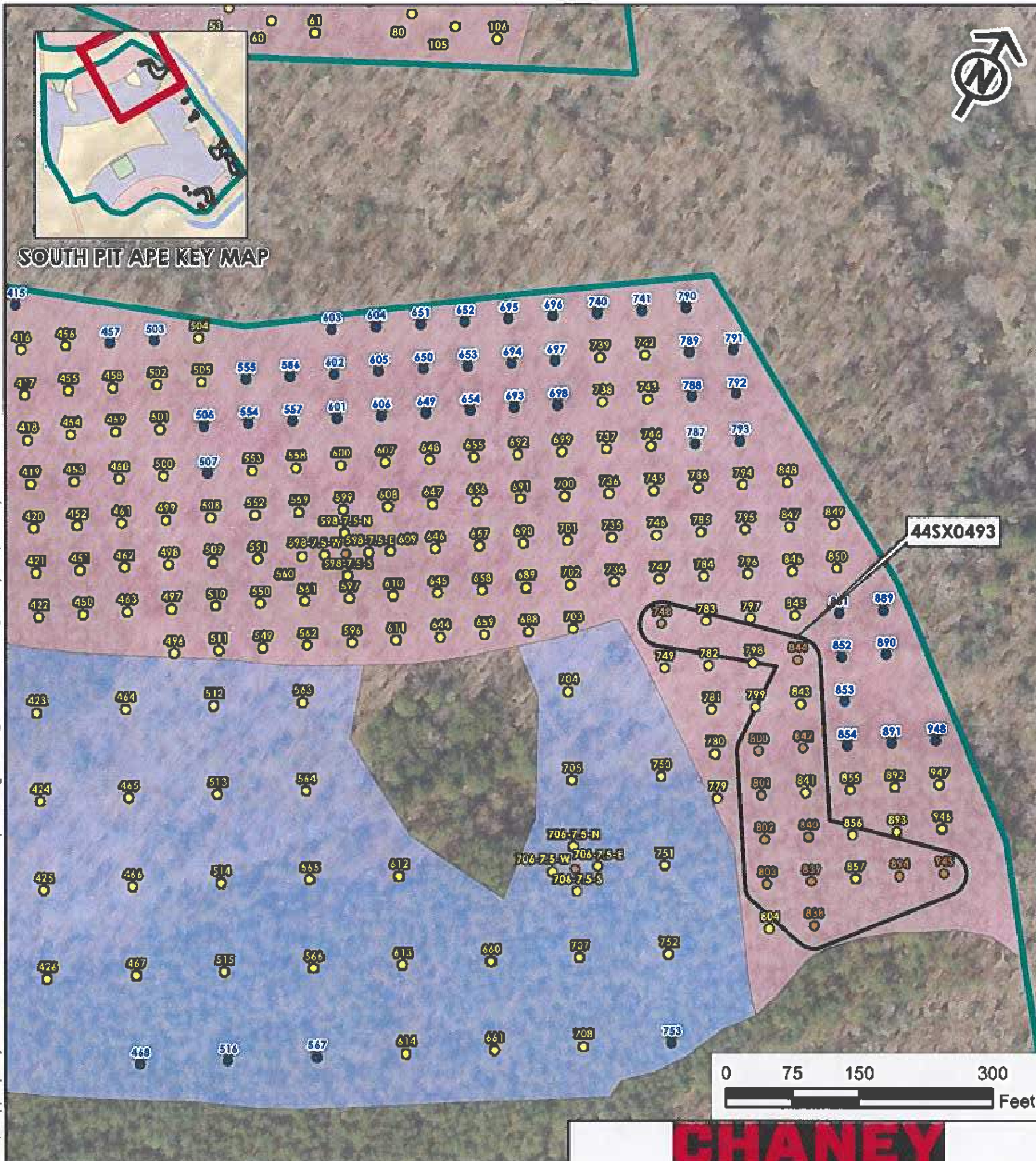

LEGEND

Shovel Test Pits
- Positive
- Negative
- Unexcavated
- Site Boundary

- APE
- Surface Survey Transects
- High Historic Sensitivity

Pre-Contact Sensitivity
- High
- Moderate

*Unshaded areas have low sensitivity.

Source: Virginia Geographic Information Network (VGIN), 2022

CHANEY ENTERPRISES

SOUTH PIT APE RESULTS

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 150'

DATE: March 2024

Dewberry

FIGURE 19B

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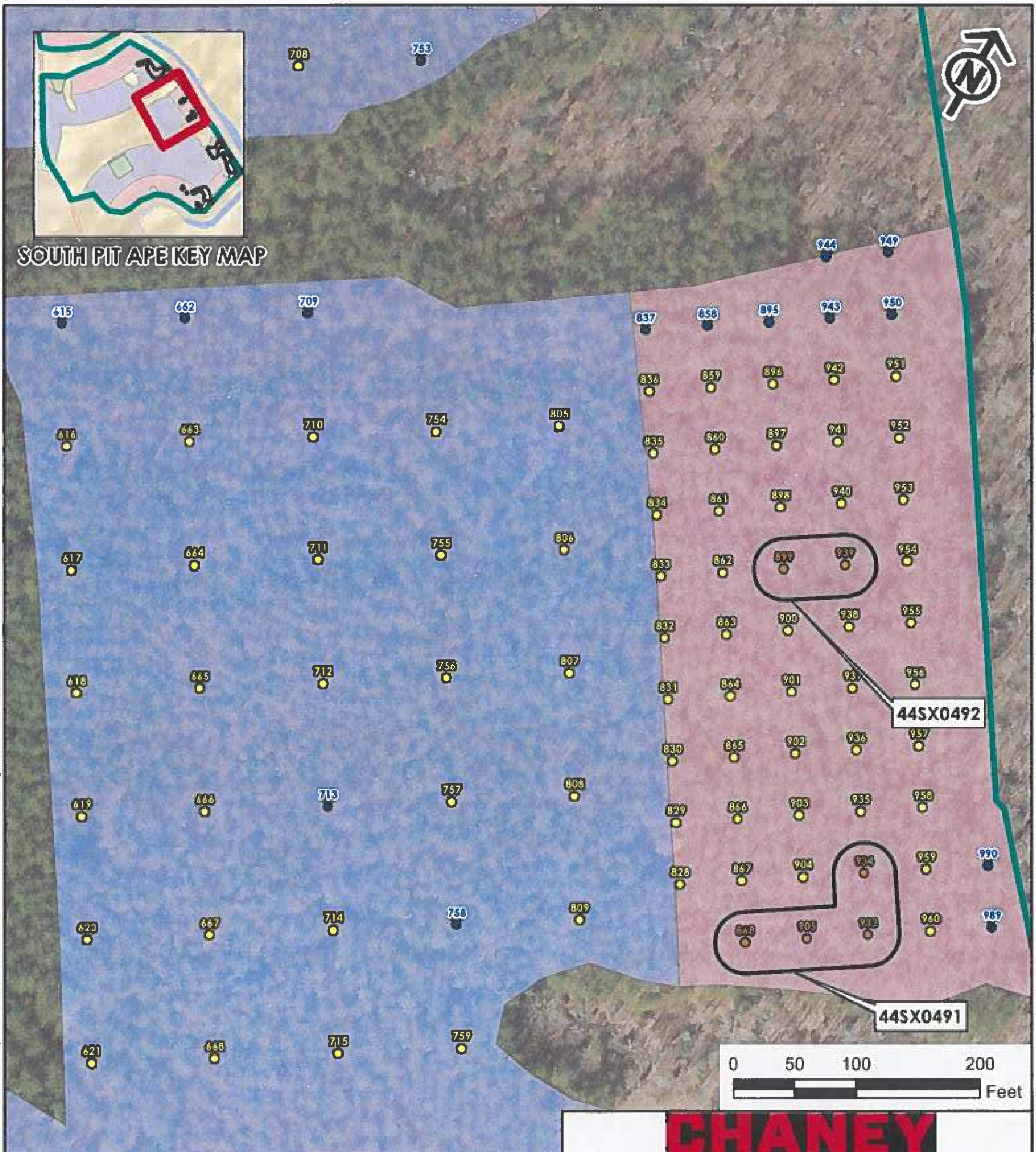

LEGEND

Shovel Test Pits
- Positive
- Negative
- Unexcavated

Site Boundary

APE
Surface Survey Transects
High Historic Sensitivity

Pre-Contact Sensitivity
- High
- Moderate

*Unshaded areas have low sensitivity.

Source: Virginia Geographic Information Network (VGIN), 2022

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CHANEY ENTERPRISES

SOUTH PIT APE RESULTS

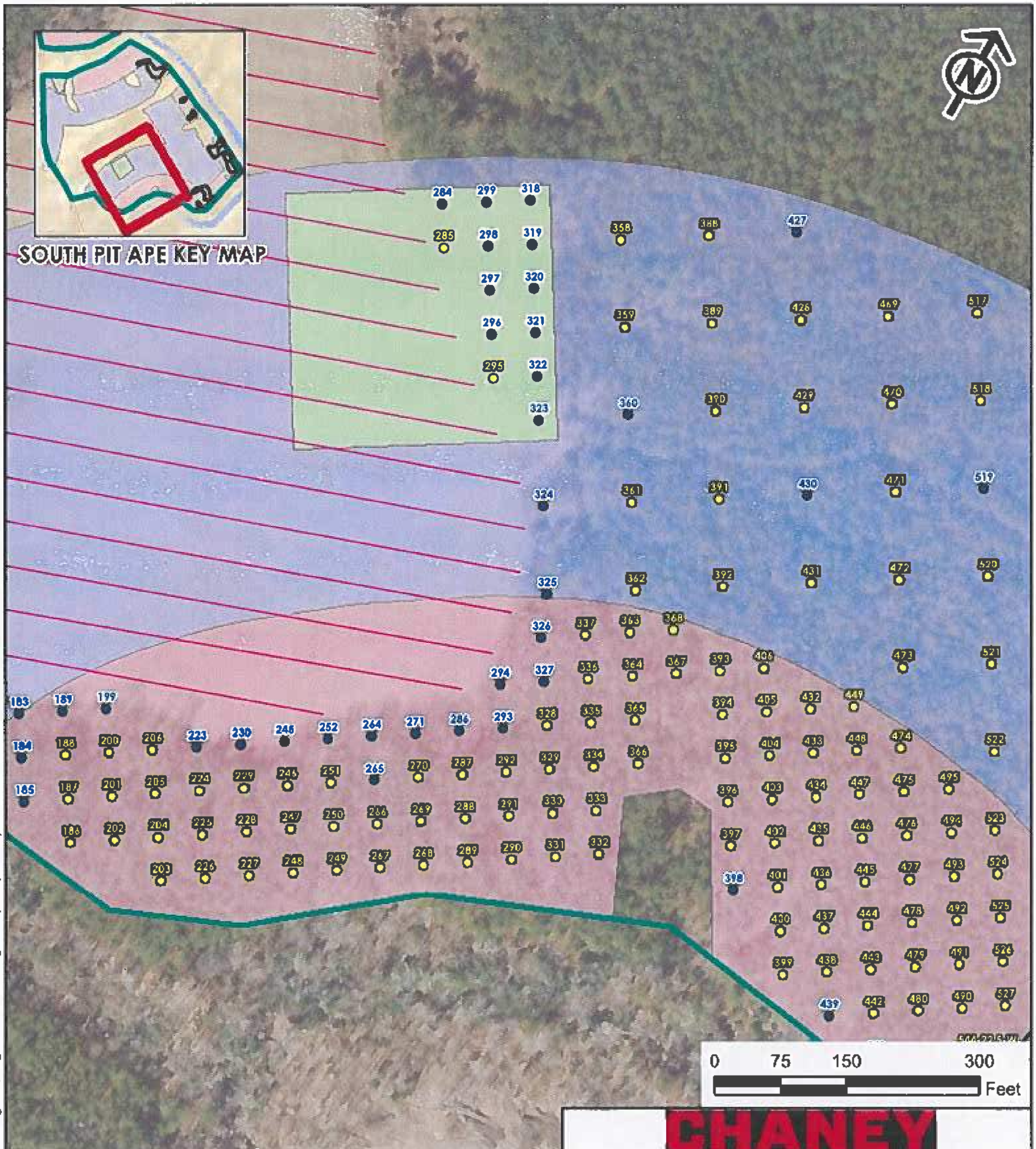
Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 100'

DATE: March 2024

Dewberry

FIGURE 19C



LEGEND

Shovel Test Pits
- Positive
- Negative
- Unexcavated

Site Boundary

APE
Surface Survey Transects
High Historic Sensitivity

Pre-Contact Sensitivity
High
Moderate

*Unshaded areas have low sensitivity.

Source: Virginia Geographic Information Network (VGIN), 2022

CHANEY ENTERPRISES

SOUTH PIT APE RESULTS

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 150'

DATE: March 2024

Dewberry

FIGURE 19D

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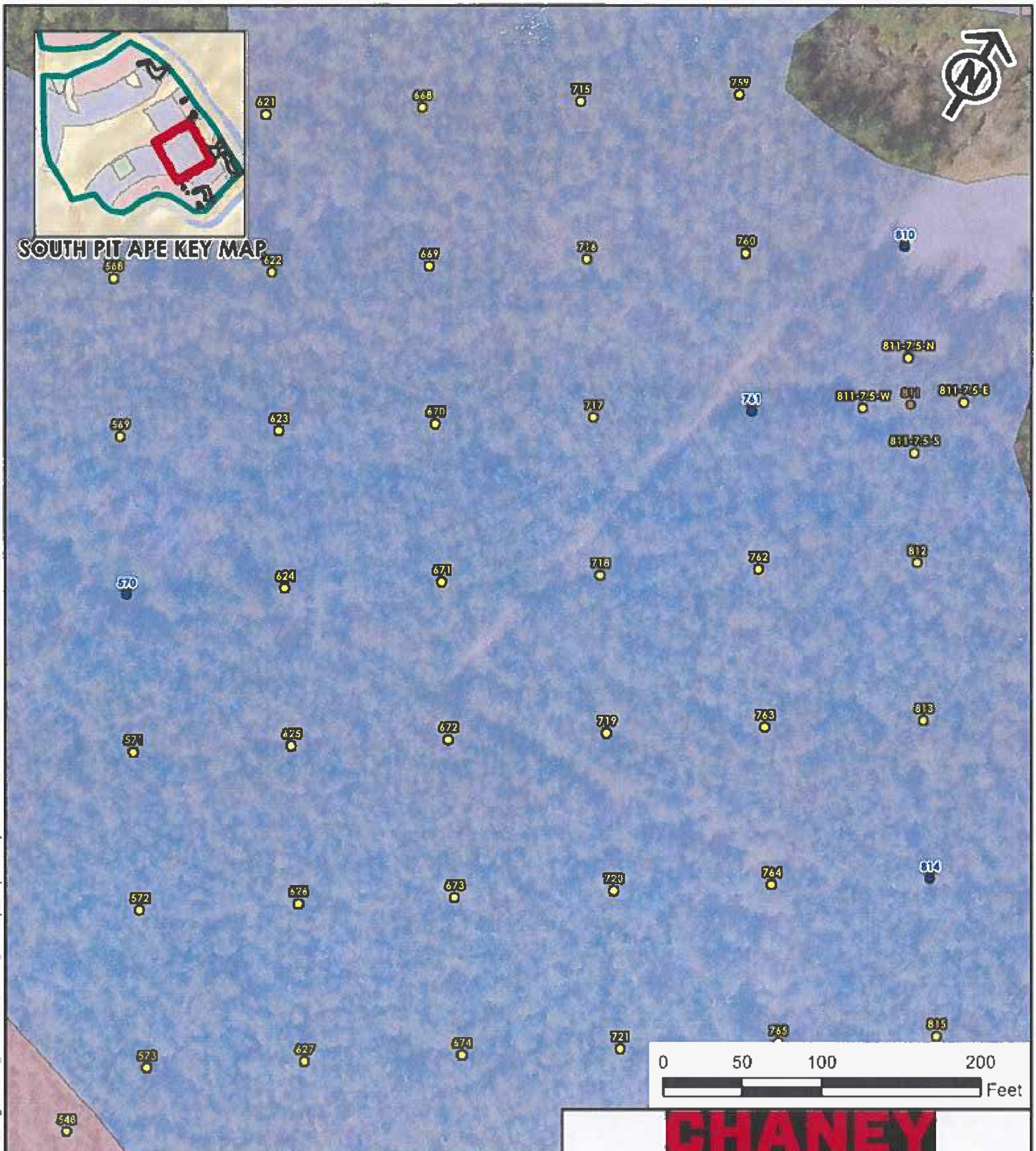

CHANEY ENTERPRISES

LEGEND

Shovel Test Pits

- Positive
- Negative
- Unexcavated

Site Boundary

APE

Surface Survey Transects

High Historic Sensitivity

Pre-Contact Sensitivity

High

Moderate

*Unshaded areas have low sensitivity.

Source: Virginia Geographic Information Network (VGIN), 2022

SOUTH PIT APE RESULTS

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 100'

DATE: March 2024

Dewberry

FIGURE 19E

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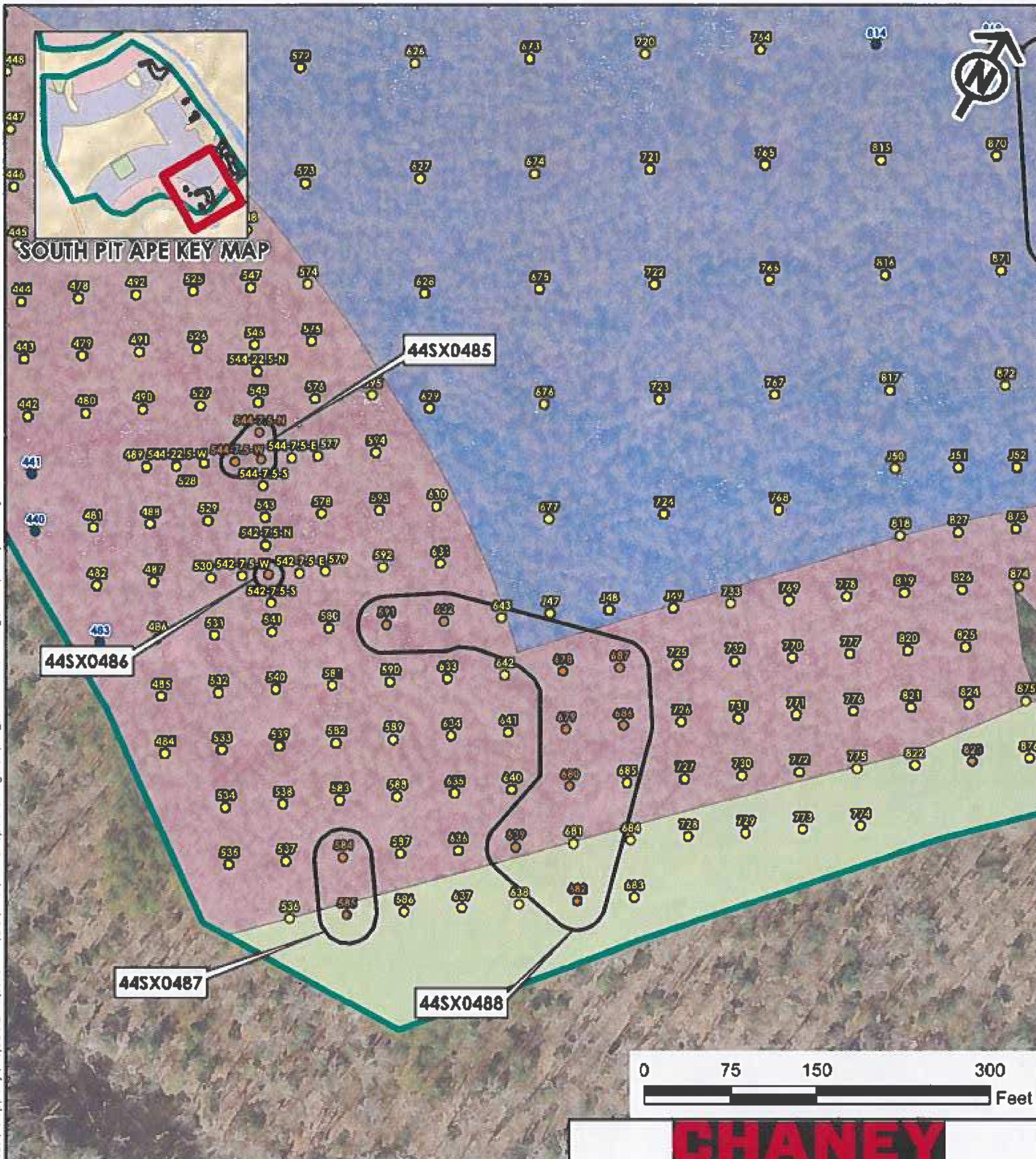

LEGEND

Shovel Test Pits

- Positive
- Negative
- Unexcavated

Site Boundary

APE

Surface Survey Transects

High Historic Sensitivity

Pre-Contact Sensitivity

High

Moderate

*Unshaded areas have low sensitivity.

Source: Virginia Geographic Information Network (VGIN), 2022

CHANEY ENTERPRISES

SOUTH PIT APE RESULTS

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 150'

DATE: March 2024

Dewberry

FIGURE 19F

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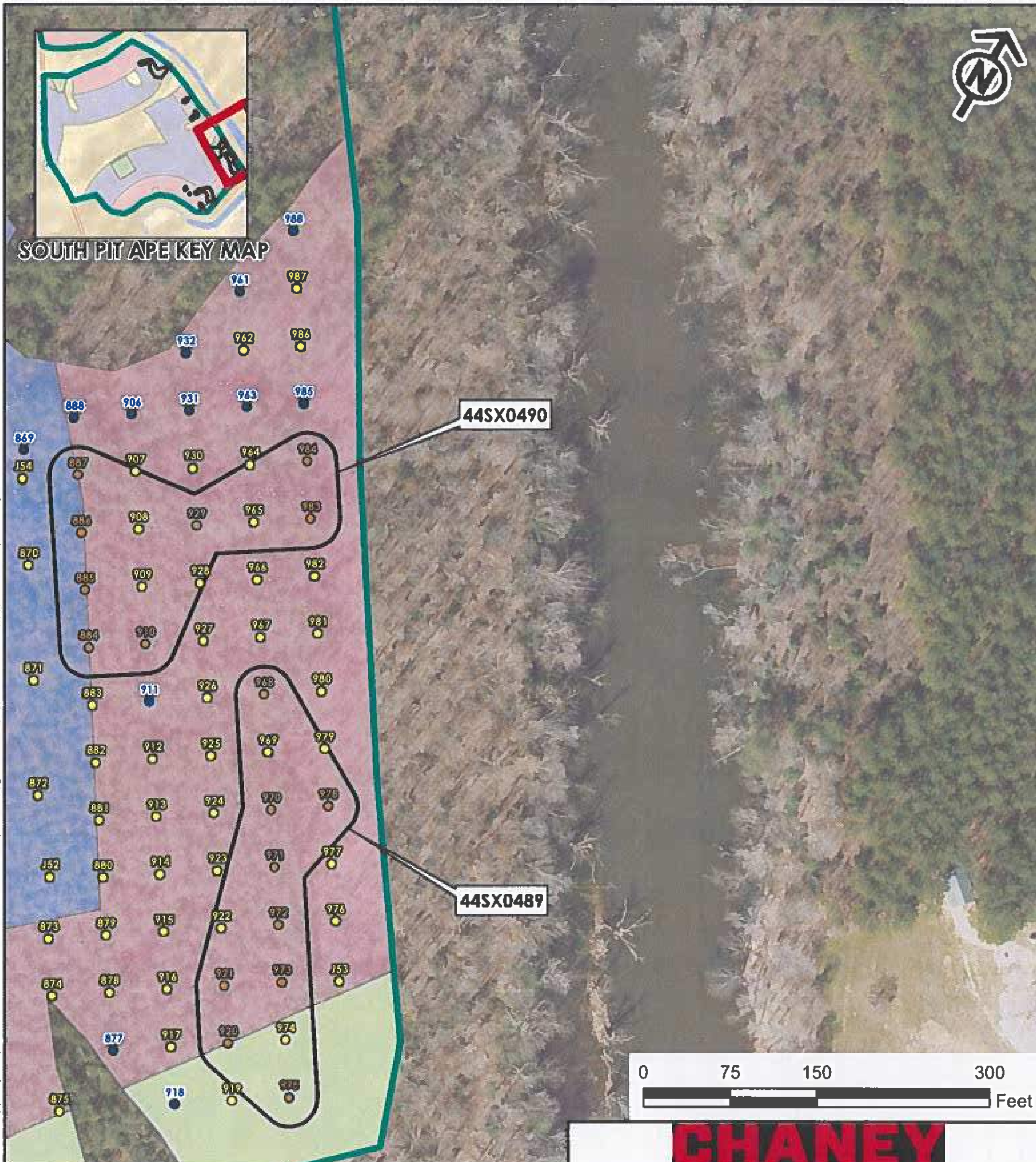

LEGEND

Shovel Test Pits
- Positive
- Negative
- Unexcavated

Site Boundary

APE

Surface Survey Transects

High Historic Sensitivity

Pre-Contact Sensitivity

High

Moderate

*Unshaded areas have low sensitivity.

Source: Virginia Geographic Information Network (VGIN), 2022

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CHANEY ENTERPRISES

SOUTH PIT APE RESULTS

Phase I Archaeological Survey
Project Freedom Site
Sussex County, Virginia

SCALE: 1" = 150'

DATE: March 2024

Dewberry

FIGURE 19G

As in the North Pit, archaeological survey of the South Pit APE began with a systematic surface survey of the agricultural field in the southeast extent of the South Pit. No cultural material was recovered during survey of the agricultural field. One historic artifact was surface collected outside the field during pedestrian reconnaissance of a low archaeological sensitivity zone near shovel test 242. This artifact, a nearly intact stoneware Bristol glaze jug (c. 1890-1920) (**Plate 37**), was recovered from a saturated floodplain in the northwestern extent of the South Pit APE; radial testing around the jug was impossible given the inundation. As such and seeing as the jug represents a casually discarded item lacking enough material to establish an archaeological site (DHR 2011, rev. 2017), the jug is not considered an isolated find nor an archaeological site.

Four isolated finds, ISF-2 through ISF-5, were recovered from shovel tests 598, 706, 811, and 823, respectively. Shovel test 598 contained one quartzite tertiary reduction flake in the Bt1-horizon. Four radial tests excavated to the northwest, northeast, southeast, and southwest of shovel test 598 failed to identify additional cultural material. Therefore, shovel test 598 was designated an isolated find, ISF-2.

Shovel test 706 returned an Early Archaic Period Kirk Corner Notched projectile point (c. 9400-8500 BP) composed of local Nottoway River Quartzite (NRQ) from the Bt1-horizon (**Plate 38**) (Coe 1964). Four radials excavated at cardinal directions around shovel test 706 failed to identify additional cultural material. Shovel test 706 was excavated at the border of a stagnant drainage pond within poorly drained soils (see **Plate 29**); this area would have been less suitable for pre-contact habitation compared to the nearby upland terrace further east where Site 44SX0493 is located (see **Figure 19B**). Therefore, the projectile point recovered from shovel test 706 likely represents an incidental loss or discard and is considered an isolated find, ISF-3.

Plate 37: Stoneware Jug, Bristol Glaze with Albany Slip (c. 1890-1920). Near STP 242, Surface.

Plate 38: ISF-3, Kirk Corner Notched Projectile Point. NRQ. Early Archaic Period, 9400-8500 BP. STP 706, Level II, 13-34 cm bgs.

Shovel test 811 returned one tertiary reduction flake composed of local NRQ from the Bt1-Horizon. Four radial tests placed at cardinal directions and excavated around shovel test 811 failed to return additional cultural material. Test 811 is therefore considered an isolated find and designated ISF-4.

Finally, shovel test 823 contained one secondary reduction flake composed of undiagnostic quartzite. No radials were excavated around shovel test 823; adjacent shovel test 876 was identified as positive for pre-contact lithic material in the field, indicating a larger site at the location. Following lab analysis, retained rocks from shovel test 876 proved to be non-cultural. Seeing as none of the shovel tests surrounding test 823 contain pre-contact lithic material, and as a steep, hydric slope borders test 823 to the southeast, shovel test 823 consists of an isolated find and is designated ISF-5.

8.4.2.1 Site 44SX0485

Site 44SX0485 (see **Figure 19F**) is located within the central-southern extent of the South Pit APE on a gentle southern slope north of Rocky Branch Creek. Site 44SX0485 consists of a Middle Archaic Period lithic scatter identified through excavation of one positive grid-based shovel test, 544, and two positive radially positioned shovel tests located northwest and southwest of shovel test 544. Two Guilford Round Base projectile points (c. 6,200-5,000 BP) and one lithic flake were recovered from the Ap and Bt1-horizons (**Table 6**). A full artifact log is available in **Appendix C.**

Table 6: Site 44SX0485 Artifact Breakdown

Artifact Group	Material	Artifact Type	Type	Date Range	Count
Processing/Extraction	NRQ	Projectile Point	Guilford Round Base	Middle Archaic (6,200-5,000 BP)	2
	Quartzite	Flake	Tertiary	Pre-Contact	1
	Total/Percentage of Site Assemblage				**3/100%**

Identification of Site 44SX0485 began when an NRQ Guilford Round Base projectile point (c. 6,200-5,000 BP) was recovered from the Ap-horizon in shovel test 544 **(Plate 39)**. Radially positioned shovel tests were excavated 7.5-meters (25 feet) to the northwest, northeast, southeast, and southwest of shovel test 544. Of these, radials to the northwest and southwest contained cultural material. The northern radial contained a second Guilford Round Base projectile point composed of NRQ, while the western radial contained a quartzite tertiary reduction flake. Tertiary flakes contain no cortex on the dorsal surface and represent the final stage of lithic reduction. No cultural material was recovered from the northeastern and southeastern radials. Additional radial tests were excavated 22.5 meters (75 feet) to the north and west between adjacent negative grid-based shovel tests. No cultural material was recovered from the 22.5-meter (75-foot) radials, achieving double-negative tests to the north and west. Therefore, Site 44SX0485 contains shovel test 544 along with radial tests 544-7.5-N and 544-7.5-W (see **Figure 19F**).

Given that Site 44SX0485 contains two projectile points dating to the latter part of the Middle Archaic Period (6,200-5,000 BP) and one tertiary reduction flake located within intact soil profiles that correspond with the known soil pedon, the potential exists for the site to yield new information about the Middle Archaic Period in Sussex County. Therefore, Site 44SX0485 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level. Site 44SX0485 is further discussed in the context of the broader South Pit APE in Section 8.5.

Plate 39: Site 44SX0485, Guilford Round Base Projectile Points. NRQ. Middle Archaic Period, 6,200-5,000 BP. Left: STP 544, Level I, 12-62 cm bgs. Right, STP 544-7.5-N, Level II, 13-50 cm bgs.

8.4.2.2 Site 44SX0486

Site 44SX0486 (see **Figure 19F**) is located within the central-southern extent of the South Pit APE approximately 22.5 meters (75 feet) southeast of Site 44SX0485. Site 44SX0486 consists of a pre-contact lithic scatter identified through excavation of one positive grid-based shovel test, 542. One ground-stone tool and five lithic flakes were recovered from the site **(Table 7)**. A full artifact log is available in **Appendix C**.

Table 7: Site 44SX0486 Artifact Breakdown

Artifact Group	Material	Artifact Type	Type	Date Range	Count
Processing/Extraction	Quartzite	Ground-Stone Tool	Grinding Slab	Pre-Contact	1
	Quartz	Flake	Tertiary	Pre-Contact	5
	Total/Percentage of Site Assemblage				**6/100%**

Excavation of shovel test 542 revealed five quartz tertiary reduction flakes surrounding a large quartzite grinding slab located at the Bt1-horizon to Bt2-horizon interface (**Plate 40**). Radially positioned shovel tests were excavated 7.5-meters (25 feet) to the northwest, northeast, southeast, and southwest of shovel test 544. No cultural material was recovered from radial testing. None of the recovered pre-contact material was temporally diagnostic. Given that greater than three artifacts were recovered from intact soil horizons within shovel test 542, Site 44SX0486 was established around the positive shovel test. The potential exists for the Site 44SX0486 to yield new information about the pre-contact period in Sussex County. Therefore, Site 44SX0486 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level. Site 44SX0486 is further discussed in the context of the broader South Pit APE in Section 8.5.

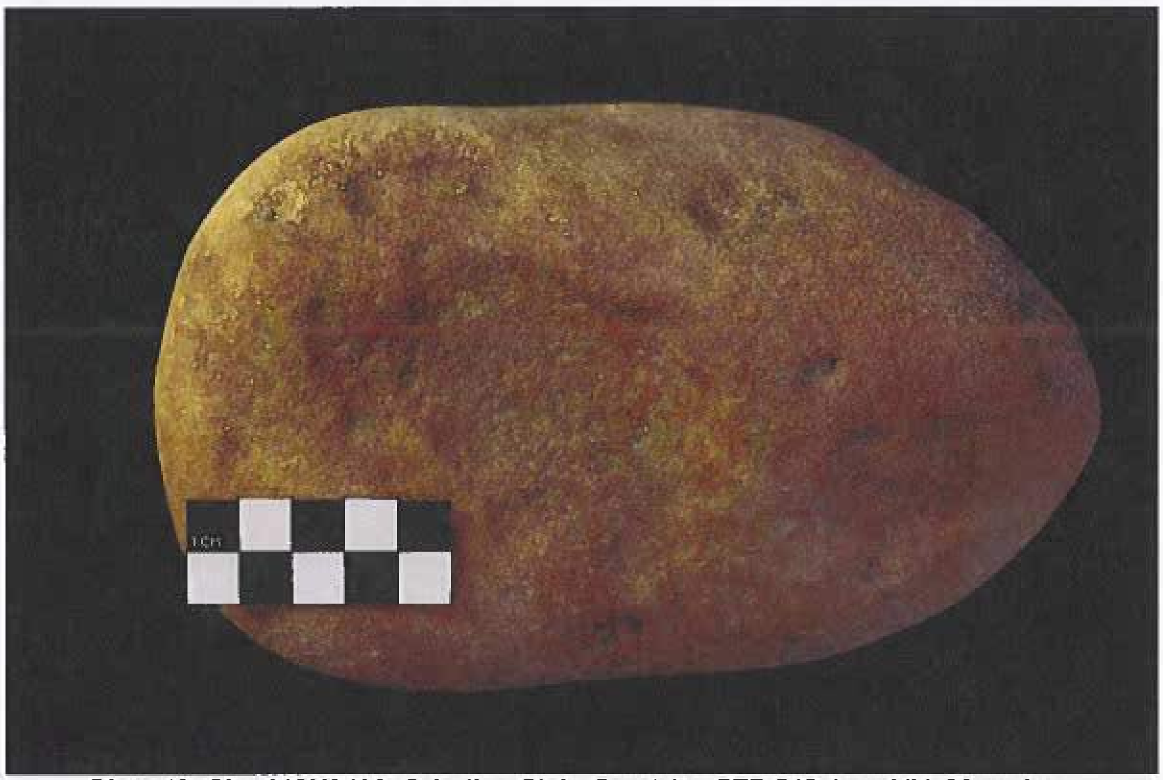


Plate 40: Site 44SX0486, Grinding Slab. Quartzite. STP 542, Level IV, 69 cm bgs.

8.4.2.3 Site 44SX0487

Site 44SX0487 (see **Figure 19F**) is located at the southern limit of the South Pit APE on a gentle southern slope north of Rocky Branch Creek approximately 66.5 meters (218 feet) southeast of Site 44SX0486. Site 44SX0487 consists of a pre-contact lithic scatter composed of tertiary and secondary reduction flakes identified through excavation of two positive grid-based shovel tests, 584 and 585 (**Table 8**). A full artifact log is available in **Appendix C**.

Table 8: Site 44SX0487 Artifact Breakdown

Artifact Group	Material	Artifact Type	Type	Date Range	Count
Processing/Extraction	Quartzite	Flake	Tertiary	Pre-Contact	6
		Flake	Secondary	Pre-Contact	1
	Total/Percentage of Site Assemblage				7/100%

Identification of Site 44SX0487 began with excavation of shovel test 584, which contained one secondary reduction and three tertiary reduction flakes in the Ap-horizon and two tertiary flakes in the Bt1-horizon. Secondary reduction flakes are defined as those with some cortex on the dorsal surface. Excavation of shovel test 585 returned one tertiary flake from the Ap-horizon. 72% of the flakes (n=5) were found in the Ap-horizon, while 28% (n=2) were contained within the Bt1-horizon. Flakes recovered from Site 44SX0487 were composed of undiagnostic quartzite. None of the recovered pre-contact material was temporally diagnostic. Given that greater than three artifacts were recovered from intact soil horizons within adjacent shovel tests 584 and 585, Site 44SX0487 was established around the positive shovel tests. The potential exists for Site 44SX0487 to yield new information about the pre-contact period in Sussex County. Therefore, Site 44SX0487 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level. Site 44SX0487 is further discussed in the context of the broader South Pit APE in Section 8.5.

8.4.2.4 Site 44SX0488

Site 44SX0488 (see **Figure 19F**) is located within the south-central portion of the South Pit APE along a flat terrace north of Rocky Branch Creek and approximately 30.5 meters (100 feet) northeast of Site 4. Site 44SX0488 contains nine positive shovel tests (591, 632, 639, 678-680, 682, and 686-687) and is composed of a widespread, low-density pre-contact flake scatter and one fire-cracked rock (FCR) **(Table 9)**. A full artifact log is available in **Appendix C**.

Table 9: Site 44SX0488 Artifact Breakdown

Artifact Group	Material	Artifact Type	Type	Date Range	Count
Processing/Extraction	Quartzite	Flake	Secondary	Pre-Contact	17
			Tertiary	Pre-Contact	27
	Quartz	Flake	Secondary	Pre-Contact	1
			Tertiary	Pre-Contact	2
	Chert	Flake	Secondary	Pre-Contact	1
	Total/Percentage of Site Assemblage				48/98%
Subsistence/Agriculture	Quartz	FCR	Fragment	Pre-Contact	1
	Total/Percentage of Site Assemblage				1/2%
Artifact Total					49/100%

Of the material recovered from Site 44SX0488, 98% (n=48) of the lithics are flakes and part of the Processing/Extraction functional group, while one FCR fragment is part of the Subsistence/Agriculture group. Seven lithics were found within the Ap-horizon (14%), while 39 were recovered from the Bt1-horizon (79%). Three lithics were recovered from the Bt2-horizon (6%). Of the flakes, 40% (n=19) resulted from secondary lithic reduction. The remaining 60% (n=29) were produced during tertiary reduction. The singular FCR fragment was identified in the Bt1-horizon of shovel test 679, in the approximate center of the site. While most of the flakes are composed of undiagnostic quartzite, at least six (13%) are composed of local NRQ. No temporally diagnostic material was recovered from Site 44SX0488.

Given that greater than three artifacts were recovered from intact soil horizons within adjacent shovel tests, Site 44SX0488 was established around the positive shovel tests. The potential exists for Site 44SX0488 to yield new information about the pre-contact period in Sussex County. Therefore, Site 44SX0488 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level. Site 44SX0488 is further discussed in the context of the broader South Pit APE in Section 8.5.

8.4.2.5 Site 44SX0489

Site 44SX0489 (see **Figure 19G**) is located at the southeastern corner of the South Pit APE and is situated on a high, flat stream terrace overlooking the confluence of Rocky Branch Creek and Sappony Creek. Site 44SX0489 contains nine positive shovel tests (920-921, 968, 970-973, 975, and 978) and consists of a widespread pre-contact lithic scatter with flakes, shatter, one bifacial preform, and a lithic core (**Table 10**). A full artifact log is available in **Appendix C**.

Table 10: Site 44SX0489 Artifact Breakdown

Artifact Group	Material	Artifact Type	Type	Date Range	Count
Processing/Extraction	Quartzite	Flake	Primary	Pre-Contact	2
			Secondary	Pre-Contact	3
			Tertiary	Pre-Contact	46
		Shatter	Undiagnostic	Pre-Contact	1
		Core	Discard	Pre-Contact	1
		Biface	Preform	Pre-Contact	1
	Quartz	Flake	Tertiary	Pre-Contact	5
		Shatter	Undiagnostic	Pre-Contact	1
	Rhyolite	Flake	Tertiary	Pre-Contact	6
	Total/Percentage of Site Assemblage				**66/99%**
Organic	Wood	Charcoal	Sample	Pre-Contact	1
	Total/Percentage of Site Assemblage				**1/1%**
Artifact Total					**67/100%**

Of the material recovered from Site 44SX0489, 99% (n=66) of the artifacts are part of the Processing/Extraction functional group, while one charcoal sample is part of the Subsistence/Agriculture group. A total of 10 artifacts were found within the Ap-horizon (15%), while 56 were recovered from the Bt1-horizon (84%). One flake was recovered from the Bt2-horizon (1%). Of the flakes, 3% (n=2) resulted from primary lithic reduction and included 50% or more cortex on the dorsal surface. Another 5% (n=3) of the flakes were produced during secondary reduction. The remaining 92% (n=57) resulted from tertiary lithic reduction. One bifacial preform with a transverse snap was recovered from the Ap-horizon of shovel test 968. The preform is composed of local NRQ and is temporally undiagnostic (**Plate 41**). Nearby in shovel test 978, excavation recovered a lithic core from the Bt1-horizon. The core is similarly composed of NRQ (**Plate 42**). Besides these artifacts, six tertiary flakes from shovel test 973 were also composed of NRQ. One charcoal sample was taken from a small charcoal deposit in shovel test 978, Bt1-horizon. No temporally diagnostic material was recovered from Site 44SX0489.

Given the varied pre-contact artifact assemblage recovered from intact soil horizons within adjacent shovel tests, Site 44SX0489 was established around the positive shovel tests. The potential exists for Site 44SX0489 to yield new information about the pre-contact period in Sussex County. Therefore, Site 44SX0489 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level. Site 44SX0489 is further discussed in the context of the broader South Pit APE in Section 8.5.

Plate 41: Site 44SX0489, Bifacial Preform. NRQ. STP 968, Level I, 0-15 cm bgs.

Plate 42: Site 44SX0489, Lithic Core. NRQ. STP 978, Level II, 20-45 cm bgs.

8.4.2.6 Site 44SX0490

Phase I archaeological survey identified Site 44SX0490 approximately 19.2 meters (63 feet) northwest of Site 44SX0489 within the east limit of the South Pit APE (see **Figure 19G**). Site 44SX0490 is located on the same flat stream terrace overlooking Sappony Creek as Site 44SX0489. Site 44SX0490 contains eight positive shovel tests (884-887, 910, 929, and 983-984) and consists of a widespread pre-contact lithic scatter with flake and shatter debitage (**Table 11**). A full artifact log is available in **Appendix C**.

Table 11: Site 44SX0490 Artifact Breakdown

Artifact Group	Material	Artifact Type	Type	Date Range	Count
Processing/Extraction	Quartzite	Flake	Primary	Pre-Contact	2
			Secondary	Pre-Contact	2
			Tertiary	Pre-Contact	24
		Shatter	Undiagnostic	Pre-Contact	2
	Quartz	Flake	Tertiary	Pre-Contact	4
	Total/Percentage of Site Assemblage				34/100%

Of the debitage from Site 44SX0490, 24% (n=8) were found within the Ap-horizon while 65% (n=22) were recovered from the Bt1-horizon. Four flakes (11%) were recovered from the Bt2-horizon. Of the flakes alone (n=32), 6% (n=2) resulted from primary lithic reduction, another 6% (n=2) were produced during secondary reduction, and 88% (n=28) resulted from tertiary lithic reduction. Five artifacts (15%) were composed of local NRQ, with the remaining material being either undiagnostic quartzite or quartz. No temporally diagnostic material was recovered from Site 44SX0490. The potential exists for Site 44SX0490 to yield new information about the pre-contact period in Sussex County. Therefore, Site 44SX0490 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level. Site 44SX0490 is further discussed in the context of the broader South Pit APE in Section 8.5.

8.4.2.7 Site 44SX0491

Site 44SX0491 (see **Figure 19C**) is located at the eastern limit of the South Pit APE on a flat upland stream terrace overlooking an unnamed seasonal drainage to the south and Sappony Creek to the east, approximately 168 meters (551 feet) northwest of Site 44SX0490. Site 44SX0491 consists of a pre-contact lithic scatter composed of secondary and tertiary flakes and one lithic core identified through excavation of four adjacent positive shovel tests: 868, 905, 933, and 934 (**Table 12**). A full artifact log is available in **Appendix C**.

Table 12: Site 44SX0491 Artifact Breakdown

Artifact Group	Material	Artifact Type	Type	Date Range	Count
Processing/Extraction	Quartzite	Flake	Secondary	Pre-Contact	1
			Tertiary	Pre-Contact	8
		Core	Discard	Pre-Contact	1
	Total/Percentage of Site Assemblage				10/91%
Organic	Wood	Charcoal	Sample	Pre-Contact	1
	Total/Percentage of Site Assemblage				1/9%
Artifact Total					11/100%

Of the artifacts recovered from Site 44SX0491, 91% (n=10) belong to the Processing/Extraction functional group, while 9% (n=1) belong to the Organic group. 100% of the material (n=11) was recovered from the Bt1-horizon. Of the flakes, 89% (n=8) were produced during tertiary lithic reduction, while 11% (n=1) resulted from secondary lithic reduction. One lithic core was recovered from the Bt1-horizon in shovel test 868 (**Plate 43**). One charcoal sample was taken from a small charcoal deposit in shovel test 943; besides the charcoal, no further artifacts were recovered from shovel test 934. Therefore, Site 44SX0491 is restricted to a narrow, upland terrace immediately north of a steep (>15%) slope down into an unnamed drainage that drains east into Sappony Creek. No temporally diagnostic material was recovered from Site 44SX0491.

Plate 43: Site 44SX0490, Lithic Core. NRQ. STP 868, Level II, 14-38cm bgs.

Given the varied pre-contact artifact assemblage recovered from intact soil horizons within adjacent shovel tests, Site 44SX0491 was established around the positive shovel tests. The potential exists for Site 44SX0491 to yield new information about the pre-contact period in Sussex County. Therefore, Site 44SX0491 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level. Site 44SX0491 is further discussed in the context of the broader South Pit APE in Section 8.5.

8.4.2.8 Site 44SX0492

Site 44SX0492 (see **Figure 19C**) is located at the eastern limit of the South Pit APE overlooking Sappony Creek in the center of the same stream terrace as Site 44SX0491, approximately 62 meters (203.4 feet) northwest of Site 44SX0491. Site 44SX0492 consists of a Late Woodland Period pre-contact lithic scatter composed of two tertiary reduction flakes and one partial Clarksville projectile point (1400-1700 CE) (**Table 13**) (Coe 1964). A full artifact log is available in **Appendix C**.

Table 13: Site 44SX0492 Artifact Breakdown

Artifact Group	Material	Artifact Type	Type	Date Range	Count
Processing/Extraction	Quartzite	Flake	Tertiary	Pre-Contact	1
	Quartz	Flake	Tertiary	Pre-Contact	1
		Projectile Point	Clarksville	Late Woodland (1400-1700 CE)	1
	Total/Percentage of Site Assemblage				3/100%

Of the assemblage, the Clarksville point (**Plate 44**) and quartzite flake were recovered from the Ap-horizon of shovel test 939, while the quartz flake was recovered from the Bt1-horizon of adjacent shovel test 899. The quartzite flake recovered from shovel test 939 is composed of local NRQ. Given the relatively intact soil stratigraphy, the potential exists for Site 44SX0492 to yield new information about the latter part of the Late Woodland Period (c. 1400-1700 CE) in Sussex County, as well as potentially earlier periods within the Bt1-horizon. Therefore, Site 44SX0492 has potential significance and is unevaluated for inclusion in the

National Register at the Phase I level. Site 44SX0492 is further discussed in the context of the broader South Pit APE in Section 8.5.

Plate 44: Site 44SX0492, Partial Clarksville Projectile Point. Vein Quartz. Middle to Late Woodland, 300-1300 CE. STP 939, Level I, 0-17 cm bgs.

8.4.2.9 Site 44SX0493

Site 44SX0493 (see **Figure 19B**) is a dispersed pre-contact lithic scatter located at the northeast extent of the South Pit APE atop a stream terrace overlooking Sappony Creek to the northeast. Site 44SX0493 is located approximately 156 meters (511.8 feet) northwest of Site 44SX0492. Site 44SX0493 contains 12 positive shovel tests (748, 800-803, 838-840, 842, 844, 894, and 945) and consists of a varied lithic scatter including debitage, one bifacial preform, and FCR (**Table 14**). A full artifact log is available in **Appendix C**.

Table 14: Site 44SX0493 Artifact Breakdown

Artifact Group	Material	Artifact Type	Type	Date Range	Count
Processing/Extraction	Quartzite	Flake	Primary	Pre-Contact	6
			Secondary	Pre-Contact	7
			Tertiary	Pre-Contact	14
		Biface	Preform	Pre-Contact	1
	Total/Percentage of Site Assemblage				**28/93%**
Subsistence/Agriculture	Quartz	FCR	Fragment	Pre-Contact	1
	Total/Percentage of Site Assemblage				**1/3%**
Organic	Wood	Charcoal	Sample	Pre-Contact	1
	Total/Percentage of Site Assemblage				**1/3%**
Artifact Total					**30/100%**

Of the material recovered from Site 44SX0493, 93% (n=28) of the artifacts are part of the Processing/Extraction functional group, another 3% (n=1) are part of the Subsistence/Agriculture group, and the final 3% (n=1) are part of the Organic group. A total of 57% (n=17) artifacts were found within the Ap-horizon, while 43% (n=13) were recovered from the Bt1-horizon. Of the flakes, 22% (n=6) resulted from primary lithic reduction, 26% (n=7) were produced during secondary reduction, and 52% (n=14) resulted from tertiary reduction. One temporally undiagnostic bifacial preform with a lateral snap was recovered from the Bt1-horizon of shovel test 842 (**Plate 45**). Three flakes, two tertiary and one secondary, are composed of NRQ. The remaining lithic material is composed of undiagnostic quartzite or quartz. One charcoal sample was taken from a small charcoal deposit in shovel test 801, Bt1-horizon. No temporally diagnostic material was recovered from Site 44SX0493.

Plate 45: Site 44SX0493, Fragmentary Biface Preform. Quartzite. STP 842, Level II, 12-30 cm bgs.

Given the pre-contact artifact assemblage recovered from intact soil horizons within adjacent shovel tests, Site 44SX0493 was established around the positive shovel tests. The potential exists for Site 44SX0493 to yield new information about the pre-contact period in Sussex County. Therefore, Site 44SX0493 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level. Site 44SX0493 is further discussed in the context of the broader South Pit APE in Section 8.5.

8.5 Discussion

A total of 10 archaeological sites (Site 44SX0484 through Site 44SX0493) were established within the discontinuous Archaeological APE as a result of Phase I survey of the Project Freedom site. Site 44SX0484, located within an agricultural field within the North Pit APE, consists of a low-density historic to recent artifact scatter resulting from map documented historic occupation at the location from 1919 through 1976. The majority of the Site 44SX0484 artifacts were recovered in the disturbed Ap-horizon or surface level. Given the complete demolition of the structure, the continued disturbance through annual plowing, planting, and harvesting, and the mixture of historic and recent material, Site 44SX0484 is recommended not eligible for listing in the National Register at the Phase I level. No further archaeological work is recommended at Site 44SX0484.

Site 44SX0485 through Site 44SX0493 consist of isolated pre-contact archaeological sites located within the southeastern, eastern, and northeastern extents of the South Pit APE. Each of the pre-contact sites is defined by a subsurface lithic scatter identified through shovel testing. Temporally diagnostic sites/isolated finds date habitation of the area to the Early-Middle Archaic and Late Woodland. However, seven of the nine sites and three of the four pre-contact isolated finds could not be dated based on the recovered material.

Despite being geographically and somewhat temporally isolated, the nine pre-contact sites identified within the South Pit APE, along with the isolated finds, share similarities such as site composition, lithic materials, and artifact types. Examining the South Pit APE pre-contact assemblage as a whole, the majority of material (n=149, 68%) was found within the Bt1-horizon, though about 25% (n=52) of the artifacts were found within the Ap-horizon and 7% (n=14) within the Bt2-horizon (**Table 15**). Quartzite lithics composed 85% (n=182) of the artifacts recovered, followed by 10% quartz (n=22), 3% rhyolite (n=3), and 0.5% chert lithics (n=1). Charcoal was the only non-lithic material found and comprised 1.5% (n=4) of the assemblage (**Table 16**). Of the quartzite, 17% (n=31) was composed of NRQ, a local toolstone found near Stony Creek, Virginia generally along the Fall Zone (McAvoy 1999).

Table 15: South Pit APE Pre-Contact Artifact Count by Level

Horizon	Count
Ap	52
Bt1	149
Bt2	14
Total	**215**

Table 16: South Pit APE Pre-Contact Artifact Count by Material

Material	Flake	Core	FCR	Shatter	Ground Stone	Biface	Total
Quartzite	171	2		3	1	5	182
Quartz	18		2	1		1	22
Rhyolite	6						6
Chert	1						1
Charcoal	4						4
Total							**215**

Artifacts identified across the South Pit APE overwhelmingly result from lithic reduction (**Table 17**). Of the 215 total pre-contact artifacts found within the nine sites and isolated finds, 97% (n=209) belong to the Processing/Extraction functional group. Just 1% (n=2) of the material, two FCR fragments, belongs to the Subsistence/Agriculture functional group. The remaining 2% (n=4) represent charcoal samples in the Organic group. This pattern was also fairly consistent when examining sites individually.

Table 17: South Pit APE Pre-Contact Artifacts by Functional Group

Functional Group	Number of Artifacts
Processing/Extraction	209
Subsistence/Agriculture	2
Organic	4
Total	**215**

Dewberry performed a primary/secondary/tertiary (PST) analysis of the recovered flake debitage (**Table 18**) (White 1963; Sullivan and Rozen 1985; Andrefsky 2001). Of the 196 flakes recovered across the sites, 5% (n=10) included at least 50% cortex on the dorsal side, indicating primary lithic reduction. About 17% (n=34) of the flakes were created during secondary lithic production and therefore included at least some cortex on their dorsal surface. Secondary flakes would have been created either from a pre-prepared core or at the terminal stages of primary lithic reduction. The majority of flakes collected from the sites (n=152, 78%) were created during the tertiary production level. These flakes would have resulted from biface finishing and/or tool re-sharpening, re-shaping, or other tool maintenance activities. When examining each site individually, similar PST proportions were observed in Site 44SX0489, Site 44SX0490, and Site 44SX0491. Just secondary and tertiary lithic reduction flakes were collected from Site 44SX0486, Site 44SX0487, Site 44SX0488, and Site 44SX0493. Site 44SX0485 and Site 44SX0492 contained only tertiary flakes.

Table 18: PST Analysis Across the South Pit APE

Production Level	Flake Count
Primary	10
Secondary	34
Tertiary	152

Artifact density was fairly uniform across the nine pre-contact archaeological sites, though certain locations included a higher artifact density (**Table 18**). Site 44SX0486, which only contained one shovel test, had the highest artifact density and was an outlier. Site 44SX0489 contained the normalized highest artifact density while Site 44SX0493, the largest site at 1.11 acres, had the lowest density. Larger sites with greater densities (i.e. >0.5 acres and >45 artifacts/acre) tended to appear within the upland terraces directly between the confluence of Sappony Creek and Rocky Branch Creek. These included Sites 44SX0485, 44SX0487, 44SX0488, 44SX0489, 44SX0490, and 44SX0491.

Table 19: Artifact Density Across the South Pit APE

Site No.	Acres	Number of Artifacts	Approx. Artifacts/Acre
44SX0485	0.04	3	75
44SX0486	0.01	6	600
44SX0487	0.10	7	70
44SX0488	0.71	49	69
44SX0489	0.74	67	91
44SX0490	0.72	34	47
44SX0491	0.21	11	52
44SX0492	0.10	3	30
44SX0493	1.11	30	27

Overall, the pre-contact archaeological sites identified within the South Pit APE indicate that the landform generally between the confluence of Sappony Creek and Rocky Branch Creek was highly favored pre-contact occupation. This preference for the Sappony/Rocky Branch confluence is clearly shown by a complete lack of pre-contact lithic reduction material recovered from the North Pit APE. The varied time periods stretching from the Early Archaic, Middle Archaic and Late Woodland across multiple sites indicate non-continuous, short-term occupation of the landform. Low densities of FCR and charcoal further suggest short-term occupation and indicate that activity at the sites was focused on lithic reduction. While primary reduction flakes represent the lowest proportion of flakes recovered, their appearance alongside secondary reduction flakes in several sites demonstrates raw material reduction occurring at the landform across time and space. In some instances, flakes recovered within the same shovel test and soil horizon included primary, secondary and tertiary flakes of the same or similar cobble type (**Plate 46**).

Plate 46: Site 44SX0489, Flakes from Same or Similar Cobble. Quartzite. Clockwise from top left: primary (2x), secondary (2x), tertiary (3x). STP 971, Level II, 15-45 cm bgs.

Material analysis demonstrates high levels of raw quartzite and quartz exploitation. The preponderance of these materials, which were also observed consistently as pebbles and cobbles within subsoil, and the inclusion of local NRQ may indicate local lithic sources, potentially within the APE. Given the geographic position of the sites within the Fall Zone, higher quality lithic material may not have been available. The South Pit APE is located atop a unique geologic outcrop of Petersburg Granite located 30-40 feet bgs (9.1-12.2 meters bgs). Granite bedrock was frequently observed eroding out of steep slopes at the eastern and southern extremes of the APE (see **Plates 16, 27**). Pre-contact peoples may have favored this particular confluence as a source of quartzite and quartz cobbles due to the unique geology and proximity to the Fall Zone; however, distinctive evidence for raw material quarrying rather than just lithic reduction was not identified during Phase I survey.

8.6 Summary and Potential Effects to Historic Properties

The Phase IB field survey consisted of the identification and recordation of above-ground features and the excavation of 796 grid-based shovel tests, 54 judgmental tests, and 22 radial tests within the North and South Pit APE. In addition, 38 surface survey transects were walked across recently plowed agricultural fields within the APE. Field survey resulted in the identification of 10 new archaeological sites and five isolated finds (see **Figures 18** and **19A-19G**). As isolated finds do not qualify as archaeological sites per DHR standards (DHR 2011, rev. 2017), no further archaeological investigations are recommended at the isolated find locations.

Site 44SX0484 within the North Pit APE consists of an approximately three-acre historic artifact scatter identified through systematic surface survey and judgmental shovel testing. Site 44SX0484 corresponds to a map documented structure at the location from 1919 through 1976 and includes both a low-density artifact scatter within an agricultural field and two historic/recent bottle dumps nearby. Given a high level of disturbance due to the house demolition and ongoing plowing, planting, and harvesting, and as the bottle dumps are not intact and will not yield significant new information about the site, the research potential of

Site 44SX0484 has been exhausted following Dewberry's Phase IB survey. Site 44SX0484 is recommended not eligible for listing in the National Register at the Phase I level; no further archaeological work is recommended at the site.

Site 44SX0485 through Site 44SX0493, located in the southeastern, eastern, and northeastern extents of the South Pit APE, are isolated pre-contact lithic scatters identified through shovel and radial testing. Site 44SX0485 and Site 44SX0492 are dated to the latter parts of the Middle Archaic Period (c. 6,200-5,000 BP) and Late Woodland Period (c. 1400-1500), respectively; however, the remaining sites are not temporally diagnostic within the pre-contact period. Each of the sites was identified within intact soil stratigraphy which corresponded with the known pedon for the South Pit APE; therefore, Site 44SX0485 through Site 44SX0493 are intact and potentially contain multiple cultural horizons spanning the pre-contact period. In addition, the concentration of lithic scatter sites with primary, secondary, and tertiary flake debitage on upland terraces close to the confluence of Sappony Creek and Rocky Branch Creek indicate a clear preference for the landform and suggests further significance for the sites. PST flake analysis and lithic materials analysis may also suggest primary reduction of local quartzite sources, potentially sourced within or near the sites. As such, Site 44SX0485 through Site 44SX0493 have potential significance and are unevaluated for inclusion in the National Register at the Phase I level.

Following identification of Site 44SX0484 through Site 44SX0493, Chaney revised project designs to avoid impacts to Site 44SX0485 through Site 44SX0493. A design alternative avoiding these sites is presented in **Appendix A**. Chaney will proceed carefully during quarry excavation and clearly delineate the sites with physical barriers erected along the site boundary to prevent accidental disturbance. Chaney will establish a 25-foot boundary away from the defined limits of the archaeological sites to avoid potential disturbance to artifact bearing soils during construction of the Project. Given the establishment of avoidance areas and redesign of the project to avoid the identified archaeological sites and as Site 44SX0484 is recommended not eligible for listing in the National Register, the Project as designed will have no effect on historic properties eligible for listing in the National Register. No further archaeological work is recommended for the Project.

9.0 CONCLUSIONS AND RECOMMENDATIONS

9.1 Archaeology

Dewberry has conducted a Phase I Archaeological Survey for the proposed Project Freedom Site. The archaeological investigation consisted of background research, archaeological sensitivity modeling, a pedestrian reconnaissance and photo-recordation of the APE, and a systematic surface and subsurface survey of the discontinuous APE. A total of 38 surface survey transects were walked and 872 grid-based, judgmental, and radial shovel tests were excavated to evaluate the presence or absence of archaeological resource within the APE.

As a result of the background research, including a review of historic and current environmental conditions, historic maps, and regional histories, the APE was found to possess areas of high pre-contact archaeological sensitivity along with areas of high historic archaeological sensitivity.

Surface survey, shovel, and judgmental/radial testing uncovered a total of 10 new archaeological sites, including one historic site and nine pre-contact sites. In addition, five isolated finds were identified within the APE. As isolated finds do not qualify as archaeological sites per DHR standards (DHR 2011, rev. 2017), no further archaeological investigations are recommended for the isolated find locations.

Site 44SX0484, located in the North Pit APE, consists of an approximately three-acre historic artifact scatter identified through systematic surface survey and judgmental shovel testing. Site 44SX0484 corresponds to a map documented structure at the location from 1919 through 1976 and includes both a low-density artifact scatter within an agricultural field and two historic/recent bottle dumps nearby. Given a high level of observed disturbance due to the house demolition and ongoing plowing, planting, and harvesting, and as the bottle dumps will not yield significant new information about the site, the research potential of Site 44SX0484 has been exhausted following Dewberry's Phase IB survey. Site 44SX0484 is recommended not eligible for listing in the National Register at the Phase I level; no further archaeological work is recommended at the site.

Site 44SX0485 through Site 44SX0493, located in the southeastern, eastern, and northeastern extents of the South Pit APE, are isolated pre-contact lithic scatters identified through shovel and radial testing. Site 44SX0485 and Site 44SX0492 are dated to the latter parts of the Middle Archaic Period (c. 6,200-5,000 BP) and Late Woodland Period (c. 1400-1500), respectively; however, the remaining sites are not temporally diagnostic within the pre-contact period. Each site was identified within intact soil stratigraphy which corresponded with the known soil pedon for the South Pit APE; therefore, Site 44SX0485 through Site 44SX0493 are assumed to be intact and potentially contain multiple cultural horizons spanning the pre-contact period. In addition, the preponderance of lithic scatter sites on upland terraces close to the confluence of Sappony Creek and Rocky Branch Creek indicate a clear preference for the landform. PST flake analysis and lithic materials analysis may also suggest primary reduction of local quartzite sources, potentially sourced within or near the sites. As such, Site 44SX0485 through Site 44SX0493 have potential significance and are unevaluated for inclusion in the National Register at the Phase I level (**Table 20**).

Table 20: Summary of Historic Resources

Site No.	Type	Potential Sig.	Potential Effect	Recommend.
44SX0484	Historic Artifact Scatter	No	Yes	Not Eligible
44SX0485	Middle Archaic Lithic Scatter	Yes (D)	No	Further Survey
44SX0486	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0487	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0488	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey

Site No.	Type	Potential Sig.	Potential Effect	Recommend
44SX0489	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0490	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0491	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey
44SX0492	Late Woodland Lithic Scatter	Yes (D)	No	Further Survey
44SX0493	Pre-Contact Lithic Scatter	Yes (D)	No	Further Survey

Following identification of Site 44SX0484 through Site 44SX0493, Chaney revised project designs to avoid impacts to Site 44SX0485 through Site 44SX0493. A design alternative avoiding these sites is presented in **Appendix A**. Chaney will proceed carefully during quarry excavation and clearly delineate the sites with physical barriers erected along the site boundary to prevent accidental disturbance. Chaney will establish a 25-foot boundary away from the defined limits of the archaeological sites to avoid potential disturbance to artifact bearing soils during construction of the Project. Given the establishment of avoidance areas and redesign of the project to avoid the identified archaeological sites and as Site 44SX0484 is recommended not eligible for listing in the National Register, the Project as designed will have no effect on historic properties eligible for listing in the National Register. No further archaeological work is recommended for the Project.

10.0 REFERENCES

Adams, Jenny L.
2013 *Ground Stone Analysis: A Technological Approach*. Second Edition. Salt Lake City: The University of Utah Press. Published in Conjunction with Archaeology Southwest.

Advisory Council on Historic Preservation [ACHP]
1981 *Determinations of Eligibility for Inclusion in the National Register of Historic Places*. 36 CFR Part 63.
2004 *Protection of Historic Properties*. 36 CFR Part 800.

Ancestry.com
1999 *Virginia, U.S., Compiled Census and Census Substitutes Index, 1607-1890* [database online]. Provo, UT, USA: Ancestry.com Operations Inc, 1999.

Andrefsky, William Jr, Ed.
2001 *Lithic Debitage: Context, Form, and Meaning*. Salt Lake City: University of Utah Press.

Barber, Michael B.
2020 "Archaeology of Virginia: The Early Archaic." In *The Archaeology of Virginia's First Peoples*, Elizabeth A. Moore and Bernard K. Means, Eds. Richmond: The Archaeological Society of Virginia.

Bien, Julius, Albert H. Campbell, and J.H. Patton
1891 *Preliminary Map of a Part of the South Side of James River, VA: from Surveys and Reconnaissances* [map]. Washington: GPO. Library of Congress.

Boyd, Cliff
2020 "A Review of Paleoindian Research in Virginia and a View Towards the Future." In *The Archaeology of Virginia's First Peoples*, Elizabeth A. Moore and Bernard K. Means, Eds. Richmond: The Archaeological Society of Virginia.

Braun, E.L.
1959 *Deciduous Forests of North America*. The Free Press, New York.

Bradford, Thomas G.
1838 *Virginia* [ma]. Boston: Weeks, Jordan, and Co. Accessed on June 5, 2023 from the David Rumsey Map Collection.

Breitzer, Susan
2021 "Constitutional Convention, Virginia (1901-1902)." *Encyclopedia Virginia*. Virginia Humanities, 23 March 2021.

Briceland, Alan
1979 "The Search for Edward Bland's New Britian," *The Virginia Magazine of History and Biography*, Vol. 87, No. 2. Richmond: Virginia Historical Society.
2020 "Edward Bland (bap. 1614-1652)" *Encyclopedia Virginia*. Virginia Humanities. Web. Retrieved on June 2, 2023.

Broyhill, Marvin
2011 *The Antebellum Railroads of Petersburg, Virginia*. Self-published. Petersburg-parks.com.

Callaway, Shelby
2015 *Wahunsonacock's Gambit: Powhatan Foreign Relations and the Success of Virginia, 1570-1622.* Master's Thesis, University of Kansas.

Carter, Mark W., Adam T. Karst, C. Rick Berquist Jr., J. Stephen Schindler, Robert E. Wheems, Benajmin R. Weinmann, and E. Allen Crider, Jr.
2022 *Preliminary Geologic Map of the Cherry Hill Quadrangle, Dinwiddie, Sussex, and Greensville Counties, Virginia.* Reston, VA: United States Geological Survey.

Carey, H.C. and I. Lea
1822 *Geographical, Historical, and Statistical Map of Virginia: Virginia. No. 22* [map]. Philadelphia: H.C. Carey and I. Lea. David Rumsey Map Collection.

Circa~ Cultural Resource Management [Circa]
2016 *Phase I Archaeological Survey of the Sappony Property, Sussex County, Virginia.* On File, DHR.

Coe, Joffre L.
1964 "The Formative Cultures of the Carolina Piedmont." *Transactions of the American Philosophical Society* 54 Part 5, Philadelphia.

Confederate States of America [CSA]
1863 *Map of Surry, Sussex, and Southampton Counties, Virginia* [map]. Chief Engineer's Office, D.N.V. Library of Congress.

Custer, Jay
1985 "The Paleoecology of the Late Archaic: Exchange and Adaptation." *Pennsylvania Archaeologist* Vol 54 (3-4): 32-47.
1990 "Early and Middle Archaic Cultures of Virginia: Culture Change and Continuity. In *Early and Middle Archaic Research in Virginia: A Synthesis,* edited by Theodore R. Reinhart and Mary Ellen N. Hodges, pp. 1-60. Special Publication No. 22. Archaeological Society of Virginia, Richmond.

Dent, Richard J.
1995 *Chesapeake Prehistory: Old Traditions, New Directions.* Plenum Press, New York.

Dutton + Associates, LLC [Dutton]
2019 *Phase I Cultural Resources Survey of the Gainesville-Haymarket 230 kV Transmission Line, Prince William County, Virginia.* On File, DHR #2014-0713. Richmond.

Edwards, R.L. and A.S. Merrill
1977 "A Reconstruction of the Continental Shelf Areas of Eastern North America for the times 9500 B.P. and 12,500 B.P." *Archaeology of Eastern North American* 5:1-43.

Egghart, Christopher
2020a "Paleoclimate and Prehistoric Environmental Context." In *The Archaeology of Virginia's First Peoples,* Elizabeth A. Moore and Bernard K. Means, Eds. Richmond: The Archaeological Society of Virginia.
2020b "State Plan and Research Design, Middle Archaic (6500 BC – 2500 BC)." In *The Archaeology of Virginia's First Peoples,* Elizabeth A. Moore and Bernard K. Means, Eds. Richmond: The Archaeological Society of Virginia.
2020c "State Plan and Research Design, Late Archaic (2500 BC – 1100 BC)." In *The Archaeology of Virginia's First Peoples,* Elizabeth A. Moore and Bernard K. Means, Eds. Richmond: The Archaeological Society of Virginia.

2020d "State Plan and Research Design, Early Woodland (1100 BC – 500 BC)." In *The Archaeology of Virginia's First Peoples,* Elizabeth A. Moore and Bernard K. Means, Eds. Richmond: The Archaeological Society of Virginia.

Egloff, Keith and Stephen R. Potter
1982 Indian Ceramics from Coastal Plain Virginia. *Archeology of Eastern North America* 10:95-117.

Egloff, Keith and Deborah Woodward
2006 *First People: The Early Indians of Virginia.* Second Edition. UVA Press, Richmond.

[The] Florida Museum
2024 "List of Types." *Historic Archaeology Type Collection* [web page]. Retrieved from <https://www.floridamuseum.ufl.edu/typeceramics/types/>.

Fry, Joshua and Peter Jefferson
1755 *A Map of the Most Inhabited Part of Virginia Containing the Whole Province of Maryland with Part of Pennsylvania, New Jersey, and North Carolina* [map]. London: Thomas Jeffreys. Library of Congress.

Gray and Pape, Inc. [Gray and Pape]
1999 *Phase I Archaeological Survey of the Proposed Solo Pipeline, Virginia.* Vol. 1-4. Prepared for Commonwealth Pipeline Corporation. On File: DHR.

Greenhorne & O'Mara, Inc. [Greenhorne & O'Mara]
2008 *Phase I Archaeological Survey of the North Hill Property in Fairfax County, Virginia.* Prepared for Fairfax County Department of Housing and Community Development. On File: DHR, Richmond, Virginia.

Hampton, Wade Maj. Gen.
1878 "Engagement at Sappony Church-Report of General Wade Hampton." From *Southern Historical Society Papers,* Vol. 7. J. William Jones, Ed. Tufts University: Perseus Digital Library.

Hantman, Jeffery L. and Deborah Gold
2002 "The Woodland in the Middle Atlantic: Ranking and Dynamic Political Stability." In *The Woodland Southeast,* edited by David Anderson and Robert Mainfort. The University of Alabama Press.

Hessler, Alex
2019 *Virginia's Home Garden Vegetable Planting Guide: Recommended Planting Dates and Amounts to Plant.* Blacksburg, VA: Virginia Cooperative Extension, Virginia Tech.

Historical Marker Database [HMDB.org]
2009 *Sappony Baptist Church.* The Historical Marker Database. Originally submitted by Bernard Fisher on May 11, 2009. Last updated on June 15, 2023.

Horn, Jonathon C.
2005 *Historic Artifact Handbook.* Alpine Archaeological Consultants, Inc., Montrose, Colorado.

Horning, Audrey
2004 *Cultural Overview of City Point.* Petersburg National Battlefield, Hopewell Virginia. Colonial Williamsburg Archaeological Reports.

Huff, Jennifer Marie
2012 "A Question of Indian Identity in the Plecker Era: The Monacan Indian Nation in the Twentieth Century." Master's Thesis. James Madison University. Pp. 240.

Jones, Olive and Catherine Sullivan
1989 *The Parks Canada Glass Glossary for the Description of Containers, Tableware, Flat Glass, and Closures.* Revised Edition. National Historic Parks and Sites, Canadian Parks Service, Environment Canada.

Klein, Michael J. and Thomas Klatka
1991 Late Archaic and Early Woodland Demography and Settlement Patterns. In *Late Archaic and Early Woodland Research in Virginia: A Synthesis*, edited by Theodore R. Reinhart and Mary Ellen N. Hodges, pp. 139–184. Special Publication No. 23. Archeological Society of Virginia, Richmond.

Lindsey, Bill
2024 *BLM/SHA Historic Glass Bottle Identification & Information Website* [web page]. Retrieved April 2024 from <https://sha.org/bottle/index.htm >.

Lutz, Francis Earle
1954 *Chesterfield: An Old Virginia County.* William Byrd Press, Inc., Richmond.

Maryland Archaeological Conservation Lab
2010 "Post-Colonial Ceramics." *Diagnostic Artifacts in Maryland* [web page]. Retrieved April 2022 from <https://apps.jefpat.maryland.gov/diagnostic/Post-Colonial%20Ceramics/index-PostColonialCeramics.htm>.

McAvoy, Joseph M.
1999 Personal Communication. Included in *Projectiles and Lithics: Nottoway River Quartzite.* DHR. Retrieved 2024 from <https://www.dhr.virginia.gov/projectiles-lithics/nottoway-river-quartzite/>.

McCann, Catherine
1983 "Prehistory." *North Central Chapter 8: Society for Pennsylvania Archaeology*. Accessed online at http://www.pennarchaeology.com/p/prehistory.html.

Myer, William
1925 *Indian Trails of the Southeast.* Yale University Library. New Haven, Connecticut. Retrieved online at <https://collections.library.yale.edu/catalog/12363218>.

Nash, Carole
2020 "Middle Woodland Research in Virginia: A Review of Post-1990 Studies." In *The Archaeology of Virginia's First Peoples*, Elizabeth A. Moore and Bernard K. Means, Eds. Richmond: The Archaeological Society of Virginia.

National Park Service [NPS]
n.d. "Sappony Church." *The Civil War: Battle Detail* [web page]. Retrieved on June 6, 2023 from <https://www.nps.gov/civilwar/search-battles-detail.htm?battleCode=va067>.
1983 *Secretary of Interior's Standards and Guidelines for Archeology and Historic Preservation.* [48 FR 44716].
1990 "Rose Bower." *National Register of Historic Places Registration Form.* U.S. Department of the Interior.
2009 *Civil War Sites Advisory Commission Report Update and Resurvey.* American Battlefield Protection Program.

Natural Resources Conservation Service [NRCS]
2023 Websoil Survey. Accessed online at https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm.

National Environmental Policy Act [NEPA]
1970 42 U.S.C. 4321§.

Nationwide Environmental Title Research, LLC. [NETR]
2023 *Historic Aerial Imagery, 1937-2016.* Retrieved 2023 https://www.historicaerials.com/viewer.

National Historic Preservation Act [NHPA]
1966 36 CFR 800.1-.16d. §, amended 2000.

National Oceanic and Atmospheric Administration [NOAA] National Centers for Environmental Information
n.d. *Climate at a Glance: County Time Series* [web page]. Retrieved May 2023 from <https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/county/time-series>.

OCM Partners
2014 U.S. Geological Survey CMGP LiDAR: Post Sandy (Virginia). NOAA National Centers for Environmental Information, https://www.fisheries.noaa.gov/inport/item/50135.

Page, Cliff
2018 *Stony Creek and Virginia History.* Blog. Abbeville Institute Press. Retrieved on June 7, 2023 from <https://www.abbevilleinstitute.org/stony-creek-and-virginia-history/#:~:text=Stony%20Creek%20was%20the%20hub,Stony%20Creek%20and%20below%20Petersburg.>.

Remmers, Vanessa
2018 *Nellie McLeod: The Woman who Pioneered the Desegregation of Chesterfield Schools.* Richmond Times Dispatch. Richmond.

Richards, Gertrude R.B.
1984 "Register of Albemarle Parish, Surry and Sussex Counties [Virginia], 1739-1778," *The National Society Colonial Dames of America in the Commonwealth of Virginia, Richmond, VA* 1958; reprinted, Southern Historical Press, Easley, SC.

Roundtree, Helen
1987 "The Termination and Dispersal of the Nottoway Indians of Virginia." *The Virginia Magazine of History and Biography.* 95 (2): 193-214. JSTOR.

Rummel, Klepper, and Kahl, LLP [RK&K]
2020 *Peer Review of Phase I Cultural Resource Survey of the Shands Energy Center, LLC.* Prepared for Shands Energy Center, LLC. On File, DHR.

Searles, Harry
2020 "Battle of Sappony Church Summary. *American History Central* [web page]. R. Squared Communications, LLC. Retrieved on May 26, 2023 from <www.americanhistorycentral.com>.

Spann, Barbara T.
1976 *Carlby.* Office of Comprehensive Planning and Fairfax County History Commission. Fairfax County: Fairfax County Office of Comprehensive Planning in cooperation with Fairfax County History Commission.

Stewart, Michael R.
2019 *Predictive Modeling Upper Delaware Valley Practices, In Regional Perspective.* Prepared for the New Jersey Historic Preservation Office. Trenton, NJ.

Sullivan, Alan P., and Kenneth C. Rozen.
1985 "Debitage analysis and archaeological interpretation." *American antiquity* 50.4: 755-779.

Sussex County

n.d. "Sussex History." *The History of Sussex County* [web page]. From *A Synopsis of the History of Sussex County* by Gary Williams, Sussex County Clerk of Court. Retrieved on June 5, 2023 from <https://www.sussexcountyva.gov/page/sussex-history/#:~:text=Sussex%20County%2C%20Virginia%20was%20created,river%20at%20Jamestown%20in%201607.>.

2023 Sussex VA GIS Viewer.

Sussex County Code

1991 Chapter 34 § 36. *Amendments*, as amended.

Thunderbird Archaeology (Thunderbird)

2018 *Pacific Boulevard Assemblage, Cultural Resources Site Assessment, Loudon County, Virginia.* On File, DHR, Richmond, Virginia.

2021 *Rock Hill Road, Loudon County, Virginia WSSI #31281.01: Phase I Cultural Resources Investigation.* On File: DHR, Richmond, Virginia.

TRC Environmental Corporation [TRC]

2021 *Survey Plan for Phase I Cultural Resource Surveys for the 360 Solar Center Project, Chesterfield County, Virginia.* On File, DHR, Richmond, Virginia.

Turner, E. Randolph, III

1989 "Paleoindian Settlement Patterns and Population Distribution in Virginia." In *Paleoindian Research in Virginia: A Synthesis*, edited by J. Mark Wittkofski and Theodore R. Reinhart, pp. 71-95.

Tyler-McGraw, Marie

2005 *Slavery and the Underground Railroad at the Eppes Plantations, Petersburg National Battlefield.* Northeast Region National Park Service. U.S. Department of the Interior.

United States Census Bureau (U.S. Census Bureau)

1920 *U.S. Federal Census: Stony Creek, Virginia.*

1940 *U.S. Federal Census: Stony Creek, Virginia.*

2010a *U.S. Federal Census: Stony Creek, Virginia.*

2010b *U.S. Federal Census: Sussex County, Virginia.*

2020 *U.S. Federal Census: Sussex County, Virginia.*

United States Geological Survey [USGS]

1919 Jarratt, Virginia, quad map, 15-minute series.

1921 McKenney, Virginia, quad map, 15-minute series.

1943 McKenney, Virginia, quad map, 15-minute series.

1950 Aerial Photo Single Frames.

1951 Jarratt, Virginia, quad map, 15-minute series.

1968 Aerial Photo Single Frames.

1973 Aerial Photo Single Frames.

1976 Aerial Photo Single Frames.

2019a Cherry Hill, quad map, 7.5-minute series.

2019b Stony Creek, quad map, 7.5-minute series.

Virginia Cultural Resources Information System [V-CRIS]

2023 *Virginia Cultural Resource Information System (V-CRIS).* Richmond.

Virginia Department of Conservation and Recreation [VDCR]
2021 *Overview of the Physiography and Vegetation of Virginia,* v. 2.0. Richmond: Virginia DCR Natural Heritage Program.
n.d. "Virginia's Major Watersheds," *Soil and Water Conservation* [web page]. Retrieved from <https://www.dcr.virginia.gov/soil-and-water/wsheds> on May 30, 2023.

Virginia Department of Education [VDOE]
n.d. "Nottoway Indian Tribe of Virginia." *Virginia's First People Past and Present* [web page]. Retrieved on May 31, 2023 from <https://www.doe.virginia.gov/teaching-learning-assessment/k-12-standards-instruction/history-and-social-science/virginia-s-first-people-past-and-present/today/nottoway-of-virginia>.

Virginia Department of Energy (Virginia Energy)
1993 *Geologic Map of Virginia: Virginia Division of Mineral Resources, Scale 1:500,000.* Capitol Heights, MD: Williams & Heintz Map Corporation. Accessed online at https://ngmdb.usgs.gov/Prodesc/proddesc_34878.htm.

Virginia Department of Historic Resources [DHR]
n.d. Site Files, various.
2011 *Guidelines for Conducting Historic Resources Survey in Virginia.* Richmond, Virginia. Rev. 2017.

Virginia Writers Program
1942 *Sussex County: A Tale of Three Centuries.* Sponsored by the Sussex County School Board. Waverly, VA: Virginia Conservation Commission.

Williams, Gary M.
n.d. "History of Sussex County, Virginia," From *Where We Came From: A Synopsis of the History of Sussex County.* Sussex County, Virginia Historical Society. Retrieved on June 2, 2023 from < https://sites.rootsweb.com/~vascvhs/History%20of%20Sussex%20County,%20Virginia.html>.

Weems, Robert E., J. Stephen Schindler, and William C. Lewis
2010 *Detailed Sections from Auger Holes in the Emporia 1:100,00-Scale Quadrangle, North Carolina and Virginia.* United States Geological Survey Open-File Report 2010-1121, 288 p.

White, Anta M., Lewis R. Binford, and Mark L. Papworth.
1963 *Miscellaneous Studies in Typology and classification.* Vol. 19. U OF M MUSEUM ANTHRO ARCHAEOLOGY.

APPENDIX A:
Project Plans

N/A

APPENDIX B: Shovel Test Log

STP	Level	Depth (cm)	Munsell	Color	Texture	Compact	Cultural Materials	Comments
1	DNE							In gravel track
2	DNE							In disturbed area, drainage, push piles
3	I	0-16	10YR 3/3	Dark Brown	silt loam		NCM	
	II	16-40	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
4	I	0-20	10YR 3/3	Dark Brown	silt loam		NCM	
	II	20-55	10YR 5/4	Yellowish Brown	sand		NCM	
	III	55-75	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
5	I	DNE						In gravel track
6	I	DNE						In gravel track
7	I	0-10	10YR 3/3	Dark Brown	silt loam		NCM	
	II	10-50	10YR 5/4	Yellowish Brown	sand		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
8	I	0-15	10YR 3/3	Dark Brown	silt loam		NCM	
	II	15-45	10YR 5/3	Brown	sand		NCM	
	III	45-55	10YR 6/3	Pale Brown	sandy clay	yes	NCM	BOE
9	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-48	10YR 7/2	Light Gray	loamy sand		NCM	
	III	48-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
10	I	0-18	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	18-65	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	65-75	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
11	I	0-13	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	13-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 8/6	Yellow	sandy clay	yes	NCM	BOE
12	DNE							In gravel track
13	DNE							In gravel track
14	I	0-20	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	20-40	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	BOE
15	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-53	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	53-65	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE

16	I	0-17	10YR 4/3	Brown	silt loam		NCM	
	II	16-40	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
17	I	0-20	10YR 3/4	Dark Yellowish Brown	sandy loam		NCM	
	II	20-56	10YR 5/3	Brown	loamy sand		NCM	
	III	56-66	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	Hydric. TOE
18	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-55	10YR 5/3	Brown	sandy clay loam		NCM	
	III	55-65	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
19	I	0-10	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	10-40	10YR 7/3	Very Pale Brown	sandy loam		NCM	Root Impasse TOE
20	DNE							In gravel track
21	I	0-12	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	12-38	10YR 7/3	Very Pale Brown	sandy loam		Whiteware	
	III	38-50	10YR 6/6	Brownish Yellow	sandy clay loam		NCM	BOE
22	I	0-16	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	16-64	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	64-78	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
23	I	0-16	10YR 3/3	Dark Brown	silt loam		NCM	
	II	16-56	10YR 6/3	Pale Brown	sandy loam		NCM	
	III	56-67	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
24	I	0-20	10YR 4/3	Brown	Silt Loam		NCM	TOE Root Impasse
25	I	0-16	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	16-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
26	DNE							In gravel track
27	DNE							In gravel track
28	I	0-12	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	12-68	10YR 5/3	Brown	sandy clay loam		NCM	
	III	68-80	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

29	I	0-9	10YR 3/2	Very Dark Grayish Brown	Silt Loam		NCM	
	II	9-63	10YR 5/3	Brown	Sandy Loam		NCM	
	III	63-73	10YR 6/3	Pale Brown	Sandy Clay		NCM	BOE, hydric.
30	I	0-13	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	13-48	10YR 7/2	Light Gray	sandy loam		NCM	
	III	48-59	10YR 6/8	Brownish Yellow	sandy clay loam		NCM	BOE
31	I	0-15	10YR 3/2	Very Dark Grayish Brown	silty clay loam		NCM	
	II	15-30	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	TOE Root Impasse
32	I	0-17	10YR 4/3	Brown	Silt Loam		NCM	
	II	17-39	10YR 5/4	Yellowish Brown	Sandy Loam		NCM	
	III	39-54	10YR 6/4	Light Yellowish Brown	Sandy Clay		NCM	BOE
33	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-63	10R 6/3	Pale Red	sandy clay loam		NCM	
	III	63-75	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
34	DNE							In gravel track
35	DNE							In gravel track
36	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-70	10YR 5/3	Brown	sandy clay loam		NCM	
	III	70-80	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
37	I	0-12	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	12-55	10YR 6/3	Pale Brown	sandy loam		NCM	
	III	55-69	10YR 7/3	Very Pale Brown	sandy clay		NCM	BOE 15% pebble gravel
38	I	0-16	10YR 3/3	Dark Brown	silty clay loam		NCM	
	II	16-44	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	44-54	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	BOE
39	I	0-12	10YR 3/3	Dark Brown	silt loam		NCM	
	II	12-35	10YR 7/2	Light Gray	sandy loam		NCM	
	III	35-45	10YR 6/8	Brownish Yellow	sandy clay loam		NCM	BOE
40	I	0-12	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	12-54	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	54-66	10YR 7/2 & 10YR 6/4	Light Gray & Light Yellowish Brown	sandy clay	yes	NCM	BOE 15% pebble gravel

41	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-62	10R 6/4	Pale Red	sandy clay loam		NCM	
	III	62-72	10YR 7/6	Yellow	sandy clay		NCM	BOE
42	DNE							In gravel track
43	I	0-13	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	13-96	10YR 5/3	Brown	sandy clay loam		NCM	
	III	96-106	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
44	I	0-11	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	11-43	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	43-55	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
45	I	0-13	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	13-28	10YR 7/3	Very Pale Brown	sandy loam		NCM	TOE Root Impasse
46	I	0-15	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	15-43	10YR 6/3	Pale Brown	sandy loam		NCM	
	III	43-54	10YR 6/8	Brownish Yellow	sandy clay loam		NCM	BOE
47	I	0-11	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	11-52	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	52-67	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
48	I	0-23	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	23-76	10YR 6/3	Pale Brown	sandy clay loam		NCM	
	III	76-90	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
49	I	0-14	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	14-40	10YR 6/4	Light Yellowish Brown	loamy sand		NCM	
	III	40-60	7.5YR 5/8	Strong Brown	sandy clay		NCM	BOE
50	DNE							In gravel track
51	I	0-18	10YR 3/3	Dark Brown	silt loam		NCM	
	II	18-60	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	60-73	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
52	I	0-17	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	17-61	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	61-72	10YR 6/6	Brownish Yellow	sandy clay loam		NCM	BOE
53	I	0-14	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	16-45	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	45-55	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	BOE

54	I	0-11	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	11-44	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	44-58	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
55	DNE							In gravel track
56	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-50	10YR 7/3	Very Pale Brown	loamy sand		NCM	Angular pebble gravel 70%
	III	50-70	7.5YR 5/6	Strong Brown	sandy clay		NCM	BOE
57	I	0-12	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	12-40	10YR 5/3	Brown	loamy sand		NCM	
	III	40-60	10YR 7/4	Very Pale Brown	sandy clay		NCM	TOE Hydric
58	DNE							In gravel track
59	I	0-15	10YR 4/3	Brown	silty clay loam		NCM	
	II	15-37	10YR 7/6	Yellow	sandy clay loam		NCM	
	III	37-49	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE Hydric
60	I	0-12	10YR 3/3	Dark Brown	silt loam		NCM	
	II	12-33	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	33-45	10YR 6/6	Brownish Yellow	sandy clay loam		NCM	BOE
61	I	0-10	10YR 3/3	Dark Brown	silt loam		NCM	TOE Root Impasse
62	I	0-18	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	18-50	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	50-64	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
63	DNE							In gravel track
64	DNE							Gravel track
65	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-18	10YR 7/3	Very Pale Brown	sand		NCM	
	III	18-25	10YR 8/3	Very Pale Brown	sand		NCM	
	IV	25-35	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
66	I	0-20	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	20-40	10YR 8/4	Very Pale Brown	sandy clay		NCM	
	III	40-50	10YR 5/8	Yellowish Brown	sandy clay		NCM	Hydric, BOE

67	I	0-12	10YR 4/3	Brown	silt loam		NCM	
	II	12-30	10YR 5/3	Brown	sandy loam		NCM	
	III	30-40	10YR 7/4	Very Pale Brown	sandy clay		NCM	
	IV	40-50	10YR 7/8	Yellow	sandy clay		NCM	BOE
68	I	0-13	10YR 5/1	Gray	clay loam		NCM	
	II	13-48	10YR 4/3	Brown	sandy clay		NCM	
	III	48-58	10YR 7/6	Yellow	sandy clay		NCM	Hydric, BOE
69	I	0-14	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	14-35	10YR 8/6	Yellow	sandy clay		NCM	
	III	35-45	10YR 6/8	Brownish Yellow	sandy clay		NCM	Coarse, BOE
70	I	0-20	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	20-30	7.5YR 6/6	Reddish Yellow	clay	yes	NCM	BOE
71	I	0-24	10YR 4/4	Dark Yellowish Brown	sandy loam		NCM	
	II	24-46	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	
	III	46-60	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
72	I	0-18	10YR 4/3	Brown	sandy loam		NCM	
	II	18-33	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	
	III	33-45	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE
73	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-24	10YR 4/4	Dark Yellowish Brown	sandy clay loam		NCM	
	III	24-37	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	
	IV	37-49	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
74	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-40	10YR 5/3	Brown	loam		NCM	
	III	40-80	10YR 7/3	Very Pale Brown	clay loam		NCM	
	IV	80-90	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
75	I	0-17	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	17-51	10YR 5/3	Brown	loamy sand		NCM	
	III	51-66	10YR 6/3	Pale Brown	loam		NCM	
	IV	66-DL	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE
76	I	0-16	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	16-40	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	40-76	10YR 6/4	Light Yellowish Brown	loam		NCM	
	IV	76-86	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE

77	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	I	15-40	10YR 5/3	Brown	loamy sand		NCM	
	II	40-69	DL	DL	clay loam		NCM	
	IV	69-80	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE
78	I	0-42	10YR 4/1	Dark Gray	silt loam		NCM	
	II	42-60	10YR 7/4	Very Pale Brown	sand		NCM	BOE
79	I	0-22	10YR 4/1	Dark Gray	silt loam		NCM	
	II	22-60	10YR 7/4	Very Pale Brown	sand		NCM	BOE
80	I	0-38	10YR 6/3	Pale Brown	sandy loam		NCM	
	II	38-44	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	44-54	10YR 7/4	Very Pale Brown	sandy clay		NCM	BOE
81	I	0-16	10YR 4/1	Dark Gray	silt loam		NCM	
	II	16-61	10YR 6/4	Light Yellowish Brown	sand		NCM	BOE
82	I	0-14	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	14-55	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	55-66	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
83	I	0-19	10YR 2/1	Black	silt loam		NCM	
	II	19-28	10YR 3/3	Dark Brown	sandy loam		NCM	
	III	28-50	10YR 7/3	Very Pale Brown	DL		NCM	
	IV	50-66	10YR 6/3	Pale Brown	sandy clay		NCM	BOE
84	I	0-15	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	15-40	10YR 7/2	Light Gray	sandy loam		NCM	
	III	40-52	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
85	I	0-15	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	15-38	10YR 6/3	Pale Brown	sandy loam		NCM	TOE Root Impasse
86	I	0-17	10YR 5/3	Brown	silt loam		NCM	
	II	17-38	10YR 6/3	Pale Brown	sandy loam		NCM	
	III	38-49	10YR 7/6	Yellow	sandy clay		NCM	BOE
87	I	0-14	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	14-41	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	41-55	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
88	I	0-11	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	11-45	10YR 7/4	Very Pale Brown	DL		NCM	
	III	45-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE

89	I	0-12	10YR 3/3	Dark Brown	silt loam		NCM	
	II	12-39	2.5Y 4/4	Olive Brown	DL		NCM	
	III	39-50	10YR 5/8	Yellowish Brown	sandy clay loam		NCM	BOE
90	I	0-9	10YR 4/1	Dark Gray	silt loam		NCM	
	II	9-31	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	34-45	7.5YR 5/8	Strong Brown	sandy clay		NCM	BOE
91	I	0-20	10YR 3/4	Dark Yellowish Brown	sandy loam		NCM	
	II	20-50	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	
	III	50-70	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
92	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-48	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	
	III	48-60	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
93	I	0-20	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	20-50	2.5Y 7/6	Yellow	sandy clay		NCM	TOE Hydric; large root in side wall.
94	I	0-18	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	18-40	10YR 6/3	Pale Brown	loamy sand		NCM	
	III	40-55	10YR 7/4	Very Pale Brown	sand		NCM	TOE Hydric
95	I	0-22	10YR 2/1	Black	silt loam		NCM	
	II	24-44	10YR 8/3	Very Pale Brown	sandy clay loam		NCM	BOE
96	I	0-26	7.5YR 4/1	Dark Gray	silt loam		NCM	
	II	26-46	5YR 5/6	Yellowish Red	clay	yes	NCM	BOE
97	I	0-10	10R 3/2	Dusky Red	silty clay loam		NCM	
	II	10-40	10YR 7/2	Light Gray	sandy loam		NCM	
	III	40-51	10YR 6/8	Brownish Yellow	sandy clay loam		NCM	BOE
98	I	0-9	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	9-46	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay loam		NCM	BOE
99	I	0-13	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	13-34	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	34-45	10YR 6/6	Brownish Yellow	sandy clay loam		NCM	BOE
100	I	0-12	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	12-38	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	
	III	38-50	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE

101	I	0-9	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	TOE Root Impasse
102	I	0-12	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	12-48	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	48-58	10YR 6/6	Brownish Yellow	sandy clay loam		NCM	BOE
103	I	0-10	10YR 3/1	Very Dark Gray	silt loam		NCM	
	II	10-41	10YR 7/2	Light Gray	sandy loam		NCM	
	III	41-52	10YR 6/6	Brownish Yellow	sandy clay loam		NCM	BOE Hydric
104	I	0-15	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	15-51	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	51-62	10YR 6/8	Brownish Yellow	sandy clay loam		NCM	BOE
105	I	0-23	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	21-46	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	46-60	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
106	I	0-15	10YR 4/1	Dark Gray	silt loam		NCM	
	II	15-47	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	
	III	47-57	10YR 7/6	Yellow	sandy clay	yes	NCM	BOE
107	I	0-33	7.5YR 4/1	Dark Gray	silt loam		NCM	TOE Bedrock
108	I	0-20	7.5YR 4/1	Dark Gray	silt loam		NCM	
	II	20-40	10YR 6/3	Pale Brown	sand		NCM	
	III	40-55	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
109	I	0-30	7.5YR 4/1	Dark Gray	silt loam		NCM	
	II	30-50	10YR 7/4	Very Pale Brown	sandy loam	yes	NCM	BOE
110	I	0-20	10YR 4/1	Dark Gray	silt loam		NCM	
	II	20-40	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	BOE
111	I	0-16	2.5Y 4/2	Dark Grayish Brown	silt loam		NCM	
	II	16-50	2.5Y 8/4	Pale Yellow	sand		NCM	BOE
112	I	0-8	2.5Y 4/2	Dark Grayish Brown	silt loam		NCM	
	II	8-40	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	40-50	10YR 7/6	Yellow	clay	yes	NCM	BOE
113	I	0-20	2.5Y 4/2	Dark Grayish Brown	silt loam		NCM	
	II	20-40	2.5Y 5/4	Light Olive Brown	sandy loam		NCM	BOE
114	I	0-20	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	20-40	10YR 7/2	Light Gray	sandy clay loam		NCM	BOE
115	I	0-50	7.5YR 7/8	Reddish Yellow	silty clay		NCM	BOE

116	I	0-24	10YR 4/1	Dark Gray	silt loam		NCM	
	II	24-44	10YR 8/4	Very Pale Brown	sandy clay loam	yes	NCM	BOE
117	I	0-20	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	20-50	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	BOE
118	I	0-45	5Y 4/2	Olive Gray	sandy loam		NCM	
	II	45-66	2.5Y 5/4	Light Olive Brown	sand		NCM	
	III	66-76	2.5Y 4/4	Olive Brown	sandy clay		NCM	BOE
119	I	0-17	10YR 4/3	Brown	loam		NCM	
	II	17-50	10YR 5/4	Yellowish Brown	sand		NCM	
	III	50-60	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
120	I	0-21	10YR 4/3	Brown	loam		NCM	
	II	21-50	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	50-60	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
121	I	0-16	10YR 3/3	Dark Brown	loam		NCM	
	II	16-56	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	56-66	10YR 7/6	Yellow	sandy clay		NCM	BOE
122	I	0-13	10YR 3/3	Dark Brown	loam		NCM	
	II	13-80	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	80-90	10YR 8/6	Yellow	sandy clay		NCM	BOE
123	I	0-13	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	13-38	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	38-48	10YR 7/6	Yellow	sandy clay		NCM	BOE
124	I	0-14	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	14-38	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	38-48	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
125	I	0-16	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	14-48	10YR 6/4	Light Yellowish Brown	sand		NCM	Coarse
	III	48-58	10YR 8/6	Yellow	sandy clay		NCM	Coarse BOE
126	I	0-24	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	24-48	10YR 6/4	Light Yellowish Brown	sand		NCM	TOE Root impasse

127	I	0-17	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	17-56	10YR 7/3	Very Pale Brown	sand		NCM	
	III	56-70	10YR 7/4	Very Pale Brown	sandy clay		NCM	Coarse BOE
128	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	12-56	10YR 7/3	Very Pale Brown	sand		NCM	TOE Root Impasse
	III	56-66	10YR 8/4	Very Pale Brown	sandy clay		NCM	Coarse BOE
129	I	0-15	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	15-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-60	7.5YR 6/6	Reddish Yellow	sandy clay		NCM	BOE
130	I	0-30	10YR 7/3	Very Pale Brown	sand		NCM	TOE, root impasse
131	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 7/6	Yellow	sandy clay loam		NCM	Coarse BOE
132	I	0-12	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	12-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 7/6	Yellow	sandy clay		NCM	Coarse, BOE
133	I	0-13	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	13-41	10YR 6/6	Brownish Yellow	sandy clay		NCM	70% pebbles
	III	41-51	7.5YR 6/8	Reddish Yellow	clay		NCM	BOE
134	I	0-16	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	16-29	10YR 6/6	Brownish Yellow	sandy clay		Slag	TOE Bedrock
135	I	0-15	10YR 3/3	Dark Brown	silt loam		NCM	
	II	15-44	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	44-56	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
136	I	0-10	10YR 3/3	Dark Brown	silt loam		NCM	
	II	10-30	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	30-42	10YR 6/8	Brownish Yellow	sandy clay		NCM	TOE Bedrock
137	I	0-20	10YR 4/2	Dark Grayish Brown	silty clay loam		NCM	TOE Root impasse
138	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-34	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	34-52	10YR 7/3	Very Pale Brown	sandy clay		NCM	BOE
139	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	12-43	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	43-53	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

140	I	0-10	10YR 5/2	Grayish Brown	sandy loam		NCM	
	II	10-39	10YR 6/3	Pale Brown	sandy loam		NCM	
	III	39-49	10R 6/6	Light Red	sandy clay		NCM	BOE
141	I	0-12	10YR 3/3	Dark Brown	silt loam		NCM	
	II	12-36	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	36-46	10YR 6/8	Brownish Yellow	sand	yes	NCM	BOE
142	I	0-13	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	13-35	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	35-50	10YR 6/3	Pale Brown	sand	yes	NCM	BOE
143	I	0-14	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	14-43	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	43-53	10YR 6/6	Brownish Yellow	sand	yes	NCM	BOE
144	I	0-12	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	12-39	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	44-53	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
145	I	0-7	10YR 2/1	Black	silt loam		NCM	
	II	8-22	10YR 6/3	Pale Brown	sandy loam		NCM	TOE Root Impasse
146	I	0-12	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	12-42	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	TOE Root Impasse
147	I	0-11	10YR 2/1	Black	silt loam		NCM	
	II	11-44	10YR 5/3	Brown	sandy loam		NCM	
	III	44-60	10YR 7/3	Very Pale Brown	sandy clay		NCM	BOE
148	I	0-10	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	10-53	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	TOE Rock Impasse
149	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-40	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	40-54	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
150	I	0-4	10YR 3/4	Dark Yellowish Brown	sandy loam		NCM	
	II	4-10	2.5Y 5/6	Light Olive Brown	sandy loam		NCM	
	III	10-14	10YR 4/4	Dark Yellowish Brown	sandy clay		NCM	BOE
151	I	0-16	10YR 4/4	Dark Yellowish Brown	sandy loam		NCM	
	II	16-38	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	38-48	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE

152	I	0-21	10YR 5/3	Brown	sandy loam		NCM	
	II	21-38	10YR 5/4	Yellowish Brown	sandy loam		NCM	
	III	38-48	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
153	I	0-4	10YR 4/4	Dark Yellowish Brown	sandy loam		NCM	
	II	4-30	10YR 5/4	Yellowish Brown	sandy loam		NCM	
	III	30-45	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
154	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-30	2.5YR 5/4	Reddish Brown	sandy loam		NCM	
	III	30-45	2.5Y 6/6	Olive Yellow	sandy clay		NCM	BOE
155	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-20	DL	DL	DL		NCM	TOE Root impasse
156	I	0-10	10YR 4/4	Dark Yellowish Brown	sandy loam		NCM	
	II	10-20	10YR 4/6	Dark Yellowish Brown	sandy loam		NCM	
	III	20-32	10YR 7/6	Yellow	sandy clay		NCM	BOE
157	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-67	2.5Y 6/4	Light Yellowish Brown	sandy clay loam		NCM	
	III	67-77	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
158	I	0-15	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	15-36	10YR 5/8	Yellowish Brown	sandy clay		NCM	
	III	36-49	7.5YR 5/8	Strong Brown	clay		NCM	BOE
159	I	0-12	10YR 3/4	Dark Yellowish Brown	sandy loam		NCM	Charcoal throughout
	II	12-55	10YR 5/4	Yellowish Brown	sandy loam		NCM	
	III	55-65	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
160	I	0-12	10YR 3/4	Dark Yellowish Brown	sandy loam		NCM	
	II	12-45	10YR 5/4	Yellowish Brown	sandy loam		NCM	
	III	45-56	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
161	DNE							Roadside disturbance
162	DNE							Roadside disturbance
163	DNE							Roadside disturbance
164	I	0-7	10YR 3/4	Dark Yellowish Brown	silt loam		NCM	
	II	7-38	10YR 5/4	Yellowish Brown	clay loam		NCM	
	III	38-52	10YR 6/3	Pale Brown	clay		NCM	TOE HYDRIC

165	I	0-7	10YR 5/1	Gray	silty clay loam		NCM	
	II	7-21	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	Wet
	III	21-31	2.5Y 4/4	Olive Brown	sandy clay		NCM	Hydric. BOE
166	I	0-10	10YR 3/3	Dark Brown	clay loam		NCM	
	II	10-46	10YR 5/4	Yellowish Brown	sandy clay		NCM	TOE Groundwater
167	DNE							Disturbed road berm
168	DNE							Disturbed road berm
169	I	0-10	10YR 4/3	Brown	sandy clay loam		NCM	
	II	10-39	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	39-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE, Hydric
170	I	0-8	10YR 4/1	Dark Gray	silt loam		NCM	
	II	8-40	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	40-50	2.5Y 5/6	Light Olive Brown	clay		NCM	BOE
171	I	0-8	10YR 4/2	Dark Grayish Brown	silty clay		NCM	
	II	8-10	2.5Y 6/4	Light Yellowish Brown	clay		NCM	TOE Hydric
172	DNE							Saturated soils
173	DNE							Saturated soils
174	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-55	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	55-65	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
175	DNE							In logging road
176	I	0-15	10YR 5/1	Gray	sandy loam		NCM	
	II	15-30	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
177	I	0-12	10YR 5/1	Gray	sandy loam		NCM	
	II	12-20	10YR 8/4	Very Pale Brown	sandy clay loam	yes	NCM	
	III	20-37	10YR 8/6	Yellow	sandy clay	yes	NCM	BOE
178	I	0-6	10YR 5/1	Gray	silty clay loam		NCM	
	II	6-35	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	35-45	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
179	I	0-5	10YR 5/1	Gray	silty clay loam		NCM	
	II	5-28	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	TOE Root impasse
180	I	0-12	2.5Y 4/1	Dark Gray	silty clay loam		NCM	TOE Groundwater
181	DNE							Saturated soils
182	DNE							Saturated soils

183	DNE							Push pile disturbance
184	DNE							Push pile disturbance
185	DNE							Push pile disturbance
186	I	0-10	10YR 4/3	Brown	silt loam		NCM	
	II	10-39	10YR 6/3	Pale Brown	sandy loam		NCM	
	III	39-50	7.5YR 6/6	Reddish Yellow	sandy clay		NCM	BOE
187	I	0-9	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	9-40	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	40-50	7.5YR 5/8	Strong Brown	sandy clay		NCM	BOE
188	I	0-15	10YR 4/3	Brown	silt loam		NCM	
	II	15-40	7.5YR 5/6	Strong Brown	clay		NCM	BOE 50% pebble gravel
189	DNE							Push pile disturbance
190	I	0-14	10YR 5/1	Gray	silt loam		NCM	
	II	14-41	10YR 7/3	Very Pale Brown	sandy loam		Clear Glass (disc.)	
	III	41-51	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
191	I	0-7	10YR 4/1	Dark Gray	silt loam		NCM	
	II	7-53	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	53-63	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
192	I	0-13	10YR 5/1	Gray	silt loam		NCM	
	II	13-26	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	TOE Root impasse
193	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-35	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	Hydric
	III	35-45	10YR 6/6	Brownish Yellow	clay		NCM	Hydric, BOE
194	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-20	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	TOE Hydric
195	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-20	10YR 5/4	Yellowish Brown	sandy clay		NCM	Hydric TOE
196	DNE							Saturated soils
197	DNE							Saturated soils
198	DNE							Saturated soils
199	DNE							Push pile disturbance
200	I	0-16	10YR 6/6	Brownish Yellow	sandy clay		NCM	Near pushpile, sub at surface, likley mechanical rolling

	II	16-25	10YR 4/3	Brown	clay loam		NCM	
	III	25-35	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
201	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-34	10YR 7/4	Very Pale Brown	sand	yes	NCM	
	III	34-44	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
202	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-27	10YR 7/4	Very Pale Brown	sand		NCM	
	III	27-37	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
203	I	0-30	10YR 7/4	Very Pale Brown	sandy clay		NCM	
	II	30-46	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	BOE
204	I	0-24	10YR 6/4	Light Yellowish Brown	silty clay		NCM	
	II	24-50	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	BOE
205	I	0-20	10YR 6/4	Light Yellowish Brown	silty clay		NCM	
	II	20-60	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	BOE
206	I	0-19	10YR 6/4	Light Yellowish Brown	silty clay		NCM	
	II	19-50	2.5Y 4/2	Dark Grayish Brown	sandy clay	yes	NCM	BOE
207	I	0-9	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	9-56	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	56-66	2.5Y 7/4 & 10YR 7/6	Pale Yellow	clay		NCM	BOE
208	I	0-12	10YR 4/3	Brown	silt loam		NCM	
	II	12-66	2.5Y 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	66-78	10YR 6/4 & 2.5Y 6/6	Light Yellowish Brown & Oli	sandy clay		NCM	BOE
209	DNE							disturbed road berm
210	DNE							In road
211	I	0-10	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	10-53	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	53-66	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
212	I	0-8	10YR 5/1	Gray	silt loam		NCM	
	II	8-44	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	44-54	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
213	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-35	10YR 7/3	Very Pale Brown	sandy clay		NCM	

	III	35-45	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
214	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-25	10YR 7/3	Very Pale Brown	sandy clay	yes	NCM	
	III	25-35	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
215	I	0-7	10YR 4/3	Brown	sandy loam		NCM	
	II	7-36	10YR 7/3	Very Pale Brown	sand		NCM	
	III	36-46	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
216	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-35	10YR 7/3	Very Pale Brown	sandy clay		Glass (disc.)	TOE Root Impasse
217	I	0-20	10YR 5/2	Grayish Brown	sandy clay		NCM	TOE Groundwater
218	I	0-10	10YR 5/2	Grayish Brown	sandy clay		NCM	TOE Groundwater
219	I	0-10	10YR 5/2	Grayish Brown	sandy clay		NCM	TOE Groundwater
220	DNE							Saturated soils
221	DNE							Saturated soils
222	DNE							Saturated soils
223	DNE							Push pile disturbance
224	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	BOE
225	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-45	10YR 5/3	Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
226	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/3	Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
227	I	0-14	10YR 3/3	Dark Brown	loam		NCM	
	II	14-23	10YR 5/4	Yellowish Brown	sandy loam		NCM	
	III	23-49	10YR 6/4	Light Yellowish Brown	sand		NCM	
	IV	49-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE

228	I	0-20	10YR 4/4	Dark Yellowish Brown	sandy loam		NCM	
	II	20-60	10YR 6/4	Light Yellowish Brown	loamy sand		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
229	I	0-20	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	20-57	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	57-70	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE
230	DNE							Push pile disturbance
231	DNE							high slope
232	I	0-10	10YR 3/3	Dark Brown	silt loam		NCM	
	II	10-20	10YR 6/4	Light Yellowish Brown	sand	yes	NCM	
	III	20-30	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE 20% sm rounded pebbles
233	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-40	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
234	I	0-5	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	5-40	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
235	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
236	I	0-15	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	15-48	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	48-52	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	TOE bedrock impasse
237	I	0-7	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	7-33	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	33-45	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
238	I	0-14	10YR 5/1	Gray	sandy loam		NCM	
	II	14-24	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
239	I	0-13	10YR 5/1	Gray	sandy loam		NCM	
	II	13-25	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
240	I	0-20	10YR 5/1	Gray	sandy loam		NCM	
	II	20-38	10YR 8/4	Very Pale Brown	loamy sand		NCM	TOE Hydric

241	I	0-33	10YR 5/1	Gray	silty clay loam		NCM	
	II	33-40	10YR 5/1	Gray	sandy clay loam		NCM	TOE Hydric
242	DNE							high slope
243	I	0-8	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	8-35	10YR 5/4	Yellowish Brown	clay loam		NCM	TOE Hydric
244	I	0-31	10R 3/6	Dark Red	silt loam		NCM	Humus
	II	34-49	10YR 4/4	Dark Yellowish Brown	sandy clay		NCM	TOE Hydric
245	DNE							Push pile disturbance
246	I	0-11	10YR 5/3	Brown	silty clay loam		NCM	
	II	11-48	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	
	III	48-58	10YR 8/2	Very Pale Brown	sandy loam	yes	NCM	BOE
247	I	0-12	10YR 5/2	Grayish Brown	silty clay loam		NCM	
	II	12-44	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	
	III	44-54	10YR 7/3	Very Pale Brown	sandy loam	yes	NCM	BOE
248	I	0-12	10YR 3/2	Very Dark Grayish Brown	silty clay loam		NCM	
	II	12-43	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	43-53	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	BOE
249	I	0-15	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	15-55	10YR 6/4	Light Yellowish Brown	sand	yes	NCM	
	III	55-70	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
250	I	0-15	10YR 2/1	Black	silt loam		NCM	
	II	15-40	10YR 5/6	Yellowish Brown	sand	yes	NCM	
	III	40-50	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
251	I	0-15	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	15-40	10YR 5/6	Yellowish Brown	sand		NCM	
	III	40-50	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
252	DNE							Push pile disturbance
253	DNE							high slope
254	I	0-10	10YR 3/6	Dark Yellowish Brown	loam		NCM	
	II	10-60	10YR 4/4	Dark Yellowish Brown	sandy loam	yes	NCM	
	III	60-70	10YR 5/6	Yellowish Brown	sandy clay loam	yes	NCM	BOE

255	I	0-10	10R 3/6	Dark Red	silt loam		NCM	
	II	10-25	10YR 5/8	Yellowish Brown	silty clay loam	yes	NCM	
	III	25-50	10YR 6/6	Brownish Yellow	clay loam	yes	NCM	BOE 20% gravel
256	I	0-7	10YR 4/3	Brown	silt loam		NCM	
	II	7-28	10YR 5/4	Yellowish Brown	loam		NCM	
	III	28-51	10YR 5/6	Yellowish Brown	silty clay loam	yes	NCM	BOE
257	DNE							High slope
258	DNE							High slope
259	DNE							Standing water
260	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-30	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	Wet
	III	30-40	10YR 6/6	Brownish Yellow	clay		NCM	TOE Groundwater
261	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-24	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	Wet
	III	24-36	10YR 6/6	Brownish Yellow	clay		NCM	TOE Hydric
262	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-36	10YR 6/6	Brownish Yellow	sandy clay		NCM	TOE Hydric
263	I	0-10	10YR 4/3	Brown	sandy clay loam		NCM	TOE Groundwater
264	DNE							Push pile disturbance
265	DNE							No dig- push piles
266	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-40	10YR 5/3	Brown	sandy clay loam		NCM	TOE Rock impasse
267	I						NCM	No dig- push piles
268	I	0-14	10YR 3/2	Very Dark Grayish Brown	silty clay loam		NCM	
	II	14-38	10YR 6/6	Brownish Yellow	sandy loam		NCM	
	III	38-48	7.5YR 5/8	Strong Brown	sandy clay	yes	NCM	BOE
269	I	0-17	10YR 3/2	Very Dark Grayish Brown	silty clay loam		NCM	
	II	17-36	10YR 6/3	Pale Brown	sandy loam		NCM	
	III	36-46	10YR 7/6	Yellow	sandy clay	yes	NCM	BOE
270	I	0-16	10YR 3/3	Dark Brown	silt loam		NCM	
	II	16-42	10YR 6/2	Light Brownish Gray	sandy loam		NCM	
	III	43-53	10YR 8/2	Very Pale Brown	sandy clay	yes	NCM	BOE
271	DNE							Push pile disturbance
	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	

272	II	10-65	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	65-75	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
273	DNE							Hydric floodplain
274	DNE							Hydric floodplain
275	I	0-12	10YR 5/1	Gray	silt loam		NCM	
	II	12-30	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE Truncated
276	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-36	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	36-46	10YR 6/6	Brownish Yellow	clay		NCM	BOE
277	I	0-13	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	13-60	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	60-72	10YR 7/4 & 10YR 6/6	Very Pale Brown & Brownisl	sandy clay		NCM	BOE
278	I	0-23	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	23-50	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	50-80	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
279	I	0-26	10YR 4/3	Brown	sandy loam		NCM	
	II	26-48	10YR 7/3	Very Pale Brown	sandy clay		NCM	
	III	48-63	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
280	I	0-20	10YR 5/3	Brown	silt loam		NCM	
	II	20-34	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	34-46	2.5Y 5/6	Light Olive Brown	sandy clay		NCM	BOE
281	I	0-10	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	10-20	2.5Y 4/2	Dark Grayish Brown	sandy loam		NCM	
	III	20-42	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	IV	42-52	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE Hydric
282	I	0-13	10YR 4/3	Brown	silt loam		NCM	
	II	13-31	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	31-42	10YR 5/6	Yellowish Brown	clay		NCM	BOE
283	I	0-11	10YR 4/3	Brown	clay loam		NCM	
	II	11-24	10YR 5/2	Grayish Brown	sandy clay		NCM	
	III	24-46	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE Hydric
284	DNE							Disturbed
	I	0-19	10YR 5/3	Brown	silt loam		NCM	Wet

285	II	19-25	10YR 7/3	Very Pale Brown	sandy clay loam	yes	NCM	
	III	25-26	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	TOE Compaction impasse
286	DNE							Push pile disturbance
287	I	0-24	10YR 4/2	Dark Grayish Brown	clay loam		NCM	
	II	24-55	10YR 6/3	Pale Brown	sandy clay		NCM	
	III	55-65	10YR 5/6	Yellowish Brown	clay		NCM	BOE
288	I	0-20	10YR 4/3	Brown	silt loam		NCM	
	II	20-43	10YR 7/4	Very Pale Brown	sand		NCM	
	III	43-53	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
289	I	0-20	10YR 4/3	Brown	clay loam		NCM	
	II	20-37	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	37-47	7.5YR 6/8	Reddish Yellow	clay	yes	NCM	BOE
290	I	0-14	10YR 3/4	Dark Yellowish Brown	silt loam		NCM	
	II	14-46	10YR 6/6	Brownish Yellow	sandy clay loam		NCM	
	III	46-60	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
291	I	0-8	10YR 4/3	Brown	silt loam		NCM	
	II	8-27	10YR 6/3	Pale Brown	sandy loam		NCM	
	III	27-39	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE 15% rounded pebbles
292	I	0-8	7.5YR 2.5/2	Very Dark Brown	silt loam		NCM	
	II	8-40	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	40-51	10R 6/6	Light Red	sandy clay		NCM	BOE
293	DNE							Push pile disturbance
294	DNE							Push pile disturbance
295	I	0-25	10YR 4/3	Brown	silt loam		NCM	Area disturbed
	II	25-36	2.5Y 6/4	Light Yellowish Brown	loam	yes	NCM	
	III	36-46	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
296	DNE							Disturbed
297	DNE							Disturbed
298	DNE							Disturbed
299	DNE							Disturbed
300	I	0-26	10YR 5/1	Gray	sandy loam		NCM	
	II	26-60	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
301	I	0-22	10YR 5/1	Gray	sandy loam		NCM	
	II	22-33	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric

302	I	0-20	10YR 5/1	Gray	sandy loam		NCM	
	II	20-30	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
303	I	0-20	10YR 5/1	Gray	sandy loam		NCM	
	II	20-36	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	36-48	10YR 8/6	Yellow	sandy clay	yes	NCM	BOE
304	DNE							Hydric floodplain
305	DNE							Hydric floodplain
306	DNE							Hydric floodplain
307	DNE							Hydric floodplain
308	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-24	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	HYDRIC
	III	24-38	5GY 4/1	Dark Greenish Gray	clay		NCM	TOE Hydric Clay
309	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-45	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	Hydric
	III	45-55	10YR 6/6	Brownish Yellow	clay		NCM	TOE Hydric
310	I	0-20	10YR 4/3	Brown	sandy clay loam		NCM	Hydric
	II	20-35	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	Hydric
	III	35-45	10YR 6/6	Brownish Yellow	sandy clay		NCM	TOE Hydric
311	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-40	10YR 7/3	Very Pale Brown	sandy clay		NCM	Hydric
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	Hydric, BOE
312	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-35	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	Hydric
	III	35-45	10YR 6/6	Brownish Yellow	sandy clay		NCM	Hydric BOE
313	I	0-21	10YR 5/1	Gray	silt loam		NCM	
	II	21-66	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	66-76	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
314	I	0-8	10YR 5/1	Gray	silty clay loam		NCM	
	II	8-30	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	30-40	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE

315	I	0-18	10YR 5/1	Gray	silty clay loam		NCM	
	II	18-40	10YR 7/3	Very Pale Brown	sandy clay		NCM	TOE Hydric
316	I	0-10	10YR 5/1	Gray	silty clay		NCM	TOE Groundwater
317	I	0-15	10YR 5/1	Gray	silty clay loam		NCM	TOE Groundwater
318	DNE							Disturbed
319	DNE							Disturbed
320	DNE							Disturbed
321	DNE							Disturbed
322	DNE							Disturbed
323	DNE							Disturbed
324	DNE							Disturbed
325	DNE							Disturbed
326	DNE							Push pile disturbance
327	DNE							Push pile disturbance
328	I	0-23	10YR 5/3	Brown	silt loam		NCM	
	II	23-39	10YR 8/3	Very Pale Brown	clay	yes	NCM	BOE
329	I	0-30	10YR 7/3	Very Pale Brown	clay	yes	NCM	BOE Disturbed
330	I	0-12	10YR 5/3	Brown	silt loam		NCM	
	II	12-50	10YR 7/6	Yellow	sand		NCM	
	III	20-50	10YR 8/3	Very Pale Brown	sand		NCM	
	IV	50-68	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	V	68-83	10YR 7/6	Yellow	clay	yes	NCM	BOE
331	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-50	10YR 5/3	Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
332	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
333	I	0-20	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	20-40	10YR 5/3	Brown	sandy loam	yes	NCM	
	III	40-50	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE

334	I	DL	DL	DL	DL		NCM	
	II	35-50	10YR 5/4	Yellowish Brown	sand	yes	NCM	
	III	50-60	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
335	I	0-21	10YR 4/3	Brown	silt loam		NCM	
	II	21-35	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	35-48	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
336	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-32	10YR 7/4 & 10YR 6/6	Very Pale Brown & Brownish Yellow	sandy clay	yes	NCM	TOE Compaction impasse
337	I	0-22	10YR 4/3	Brown	sandy loam		NCM	
	II	22-46	10YR 4/6	Dark Yellowish Brown	sand		NCM	
	III	46-56	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
338	I	0-17	2.5Y 4/2	Dark Grayish Brown	silty clay loam		NCM	
	II	17-29	2.5Y 7/4 & 2.5Y 6/6	Pale Yellow & Olive Yellow	sandy clay		NCM	
	III	29-46	2.5Y 6/6	Olive Yellow	sandy clay		NCM	BOE
339	I	0-20	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	20-34	2.5Y 7/4	Pale Yellow	sandy clay		NCM	
	III	34-46	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
340	I	0-17	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	17-50	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	TOE - hydric soils
341	I	0-6	10YR 4/1	Dark Gray	sandy loam		NCM	
	II	6-16	10YR 4/2	Dark Grayish Brown	clay		NCM	
	III	16-55	10YR 5/2	Grayish Brown	sandy clay		NCM	Toe, root impasse
342	I	0-15	2.5Y 4/2	Dark Grayish Brown	clay		NCM	
	II	15-53	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	TOE - Hydric soils
343	DNE							High slope
344	DNE							Hydric floodplain
345	DNE							Hydric floodplain
346	DNE							Hydric floodplain
347	DNE							High slope

348	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	12-45	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
349	I	0-9	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	9-56	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	56-66	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
350	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-26	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	26-36	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
351	DNE							In drainage
352	I	0-8	10YR 5/1	Gray	silt loam		NCM	
	II	8-44	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	44-54	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE Hydric
353	I	0-24	10YR 5/1	Gray	sandy loam		NCM	
	II	24-50	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	50-65	10YR 8/6	Yellow	sandy clay		NCM	BOE
354	I	0-20	10YR 5/1	Gray	sandy loam		NCM	
	II	23-37	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
355	I	0-32	10YR 5/1	Gray	sandy loam		NCM	
	II	32-42	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
356	I	0-19	10YR 5/1	Gray	sandy loam		NCM	TOE Groundwater
357	DNE							Saturated soils
358	I	0-23	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	23-36	10YR 4/3	Brown	sandy loam		NCM	
	III	36-50	10YR 5/4	Yellowish Brown	clay loam		NCM	BOE
359	I	0-18	10YR 3/3	Dark Brown	silt loam		NCM	
	II	18-37	10YR 5/4	Yellowish Brown	loam	yes	NCM	
	III	37-52	10YR 5/6	Yellowish Brown	sandy clay loam	yes	NCM	BOE
360	DNE							In road
361	I	0-15	10YR 3/3	Dark Brown	silty clay loam		NCM	
	II	15-38	10YR 4/2	Dark Grayish Brown	clay loam		NCM	
	III	38-50	10YR 5/6	Yellowish Brown	silty clay		NCM	BOE

362	I	0-10	10YR 3/4	Dark Yellowish Brown	clay loam		NCM	
	II	10-36	10YR 5/4	Yellowish Brown	silt loam		NCM	
	III	36-59	10YR 4/6	Dark Yellowish Brown	silty clay loam	yes	NCM	BOE
363	I	0-9	10YR 3/3	Dark Brown	silty clay loam		NCM	
	II	9-33	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	
	III	33-43	10YR 7/2	Light Gray	sandy clay		NCM	BOE
364	I	0-12	10YR 3/3	Dark Brown	silt loam		NCM	
	II	12-35	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	35-45	10YR 7/6	Yellow	sandy clay	yes	NCM	BOE
365	I	0-10	10YR 3/3	Dark Brown	silt loam		NCM	
	II	10-34	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	34-45	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
366	I	0-23	10YR 4/3	Brown	silt loam		NCM	
	II	23-47	10YR 6/3	Pale Brown	sandy loam		NCM	
	III	47-59	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
367	I	0-12	10YR 4/3	Brown	silt loam		NCM	
	II	12-53	10YR 7/3 & 10YR 6/4	Very Pale Brown & Light Yellowish Brown	sand		NCM	Colors banding
	III	53-63	2.5Y 6/4	Light Yellowish Brown	silty clay		NCM	Hydric BOE
368	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-48	10YR 7/4	Very Pale Brown	sand		NCM	
	III	48-58	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
369	I	0-7	10YR 3/3	Dark Brown	silt loam		NCM	
	II	7-33	10YR 6/3	Pale Brown	clay loam		NCM	
	III	33-50	10YR 6/6	Brownish Yellow	silty clay loam		NCM	BOE
370	I	0-10	10YR 3/4	Dark Yellowish Brown	sandy loam		NCM	
	II	10-36	10YR 7/4	Very Pale Brown	silt loam		NCM	
	III	36-55	10YR 5/6	Yellowish Brown	clay loam	yes	NCM	BOE
371	I	0-9	10YR 4/3	Brown	sandy loam		NCM	
	II	9-36	10YR 4/4	Dark Yellowish Brown	silt loam		NCM	
	III	36-54	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	BOE
372	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-65	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	65-75	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

373	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-40	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	TOE Root Impasse
374	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-70	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	TOE Groundwater
375	DNE							high slope
376	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-40	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	clay		NCM	Hydric BOE
377	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-40	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	clay		NCM	BOE Hydric
378	I	0-23	10YR 4/3	Brown	sandy loam		NCM	
	II	23-45	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	clay		NCM	BOE
379	I	0-18	10YR 4/3	Brown	sandy loam		NCM	
	II	18-40	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	clay	yes	NCM	Coarse, BOE
380	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-32	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	Root Impasse TOE
381	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-30	10YR 7/3	Very Pale Brown	sandy clay		NCM	
	III	30-40	10YR 6/6	Brownish Yellow	clay		NCM	BOE
382	I	0-11	10YR 4/3	Brown	sandy loam		NCM	
	II	11-35	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	35-45	10YR 6/6	Brownish Yellow	clay		NCM	Hydric BOE
383	I	0-24	10YR 4/3	Brown	sandy loam		NCM	
	II	24-52	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	52-62	10YR 6/6	Brownish Yellow	clay	yes	NCM	BOE
384	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-55	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	55-65	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
385	I	0-15	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	15-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	TOE Groundwater
386	I	0-20	10YR 5/2	Grayish Brown	sandy clay		NCM	TOE Groundwater

387	DNE							Saturated soils
388	I	0-21	10YR 5/1	Gray	silty clay loam		NCM	
	II	21-40	10YR 7/3	Very Pale Brown	sandy clay		NCM	TOE Groundwater
389	I	0-19	10YR 6/1	Gray	silt loam		NCM	
	II	19-26	2.5Y 7/3	Pale Yellow	sandy clay loam		NCM	
	III	26-36	2.5Y 6/6	Olive Yellow	sandy clay	yes	NCM	BOE
390	I	0-9	10YR 5/1	Gray	silt loam		NCM	
	II	9-21	2.5Y 7/3	Pale Yellow	sandy clay loam	yes	NCM	
	III	21-31	2.5Y 6/6	Olive Yellow	sandy clay	yes	NCM	BOE
391	I	0-10	10YR 5/1	Gray	silt loam		NCM	
	II	10-19	2.5Y 7/3	Pale Yellow	sandy clay loam	yes	NCM	
	III	19-29	2.5Y 6/8	Olive Yellow	sandy clay	yes	NCM	BOE
392	I	0-10	10YR 5/1	Gray	silt loam		NCM	
	II	10-54	2.5Y 7/3	Pale Yellow	sandy clay loam		NCM	
	III	54-64	2.5Y 6/8	Olive Yellow	sandy clay	yes	NCM	BOE
393	I	0-15	10YR 4/3	Brown	silt loam		NCM	
	II	15-55	10YR 7/3 & 10YR 6/4	Very Pale Brown & Light Yel	sand		NCM	
	III	55-65	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	HYDRIC BOE
394	I	0-12	10YR 4/3	Brown	silt loam		NCM	
	II	12-30	10YR 7/3	Very Pale Brown	sand		NCM	
	III	30-40	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
395	I	0-17	10YR 4/3	Brown	silt loam		NCM	
	II	17-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
396	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-30	10YR 7/3	Very Pale Brown	sand		NCM	
	III	30-40	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
397	I	0-15	10YR 4/3	Brown	silt loam		NCM	
	II	14-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
398	DNE							High slope

399	I	0-13	10YR 3/3	Dark Brown	silt loam		NCM	
	II	13-40	10YR 7/6	Yellow	sandy clay	yes	NCM	BOE
400	I	0-24	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	24-70	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	70-80	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
401	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-45	10YR 5/3	Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
402	I	0-22	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	22-45	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	BOE
403	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-50	10YR 5/3	Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
404	I	0-18	10YR 3/3	Dark Brown	silt loam		NCM	
	II	18-35	10YR 8/4	Very Pale Brown	sandy clay	yes	NCM	BOE
405	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-25	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	25-45	7.5YR 5/6	Strong Brown	sandy clay	yes	NCM	BOE
406	I	0-13	10YR 3/3	Dark Brown	silt loam		NCM	
	II	13-35	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	
	III	35-52	10YR 6/6	Brownish Yellow	clay	yes	NCM	BOE
407	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
408	I	0-5	10YR 3/4	Dark Yellowish Brown	sandy loam		NCM	
	II	5-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
409	I	0-15	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	15-55	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	55-65	10YR 6/6	Brownish Yellow	clay	yes	NCM	BOE
410	I	0-10	10YR 3/4	Dark Yellowish Brown	sandy loam		NCM	
	II	10-45	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE

411	I	0-10	10YR 3/4	Dark Yellowish Brown	sandy loam		NCM	
	II	10-40	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
412	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
413	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-40	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	TOE Groundwater
414	I	0-5	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	5-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
415	DNE							High slope
416	I	0-10	10YR 5/1	Gray	silt loam		NCM	
	II	10-22	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	BOE
417	I	0-24	10YR 5/1	Gray	silt loam		NCM	
	II	24-46	10YR 8/4	Very Pale Brown	sandy clay loam	yes	NCM	TOE Hydric
418	I	0-42	10YR 5/1	Gray	sandy loam		NCM	TOE Hydric
419	I	0-12	10YR 5/1	Gray	silt loam		NCM	
	II	12-35	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
420	I	0-24	10YR 3/3	Dark Brown	silt loam		NCM	
	II	24-60	10YR 8/4	Very Pale Brown	sandy clay	yes	NCM	
	III	60-80	10YR 8/6	Yellow	clay	yes	NCM	BOE
421	I	0-28	10YR 5/1	Gray	sandy loam		NCM	
	II	28-46	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
422	I	0-24	10YR 4/3	Brown	silt loam		NCM	TOE Groundwater
423	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-55	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	55-65	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
424	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	Soils extremely wet.
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE Hydric
425	I	0-15	10YR 3/1	Very Dark Gray	sandy loam		NCM	
	II	15-40	10YR 5/4	Yellowish Brown	sandy clay		NCM	TOE Groundwater
	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	

426	II	10-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 5/4	Yellowish Brown	sandy clay		NCM	BOE
427	DNE							Disturbed push piles
428	I	0-26	10YR 4/3	Brown	sandy loam		NCM	
	II	26-56	2.5Y 5/6	Light Olive Brown	sandy clay loam		NCM	
	III	56-66	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
429	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-37	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	37-50	10YR 5/6	Yellowish Brown	clay		NCM	BOE
430	DNE							In road
431	I	0-16	10YR 4/3	Brown	silt loam		NCM	
	II	16-66	2.5Y 5/4	Light Olive Brown	clay loam		NCM	
	III	66-77	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
432	I	0-11	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	11-31	10YR 7/2	Light Gray	sandy loam		NCM	
	III	31-41	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
433	I	0-13	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	13-30	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	30-42	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	BOE
434	I	0-12	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	12-31	10YR 7/2	Light Gray	sandy loam		NCM	
	III	31-40	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
435	I	0-9	10YR 3/3	Dark Brown	silt loam		NCM	
	II	9-46	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	46-56	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
436	I	0-11	10YR 3/3	Dark Brown	silt loam		NCM	
	II	11-29	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	29-40	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
437	I	0-21	10YR 4/3	Brown	silt loam		NCM	
	II	20-64	10YR 6/6	Brownish Yellow	sandy loam		NCM	
	III	64-75	7.5YR 5/8	Strong Brown	sandy clay loam	yes	NCM	BOE

438	I	0-18	10YR 4/3	Brown	silt loam		NCM	
	II	17-42	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	42-61	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
439	DNE							High slope
440	DNE							High slope
441	DNE							High slope
442	I	0-28	10YR 3/3	Dark Brown	silt loam		NCM	
	II	28-46	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	TOE Rock impasse
443	I	0-20	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	20-30	10YR 5/4	Yellowish Brown	sand		NCM	
	III	30-50	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
444	I	0-15	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	15-30	10YR 5/6	Yellowish Brown	sand	yes	NCM	
	III	30-50	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
445	I	0-15	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	15-40	10YR 5/6	Yellowish Brown	sand	yes	NCM	
	III	40-50	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
446	I	0-20	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	20-40	10YR 5/6	Yellowish Brown	sand		NCM	
	III	40-50	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
447	I	0-15	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	15-40	10YR 5/6	Yellowish Brown	sand		NCM	
	III	40-50	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
448	I	0-23	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	23-47	10YR 5/3	Brown	sand		NCM	
	III	47-65	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
449	I	0-15	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	15-40	10YR 6/4	Light Yellowish Brown	sand	yes	NCM	
	III	40-50	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	BOE
450	I	0-10	10YR 3/3	Dark Brown	silt loam		NCM	
	II	10-42	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	42-55	2.5Y 5/4	Light Olive Brown			NCM	BOE

451	I	0-12	10YR 4/3	Brown	silt loam		NCM	
	II	12-49	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	49-60	10YR 4/6 & 10YR 6/4	Dark Yellowish Brown & Light Yellowish Brown			NCM	BOE
452	I	0-20	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	20-41	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	41-51	10YR 5/6	Yellowish Brown	clay		NCM	BOE
453	I	0-27	10YR 5/3	Brown	silt loam		NCM	
	II	27-59	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	59-75	7.5YR 5/8	Strong Brown	clay	yes	NCM	BOE, 20-30% gravel
454	I	0-18	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	18-55	10YR 6/3	Pale Brown	sandy clay		NCM	TOE Hydric
455	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-38	10YR 7/4	Very Pale Brown	sandy clay		NCM	Gravel and pebbles throughout
	III	38-49	2.5Y 5/6	Light Olive Brown	sandy clay		NCM	BOE, Gravel throughout
456	I	0-18	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	18-47	2.5YR 7/4	Light Reddish Brown	sandy clay		NCM	Gravel and pebbles throughout
	III	47-58	10YR 6/8 & 10YR 6/4	Brownish Yellow & Light Yellowish Brown	sandy clay		NCM	BOE, gravel and pebbles throughout
457	DNE							high slope
458	I	0-12	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	12-18	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	18-30	10YR 6/8	Brownish Yellow	sandy clay		NCM	Rocky 15%. BOE
459	I	0-17	10YR 5/1	Gray	silt loam		NCM	
	II	17-36	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	Hydric
	III	36-46	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE 10% pebbles
460	I	0-14	10YR 5/1	Gray	silt loam		NCM	
	II	14-38	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	38-48	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE Hydric
461	I	0-19	10YR 5/1	Gray	silt loam		NCM	
	II	19-35	10YR 7/3	Very Pale Brown	sandy clay		NCM	TOE Hydric

462	I	0-18	10YR 5/1	Gray	silt loam		NCM	
	II	18-62	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	62-72	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
463	I	0-18	10YR 5/1	Gray	silt loam		NCM	
	II	18-51	10YR 7/3	Very Pale Brown	sandy clay loam	yes	NCM	
	III	51-61	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
464	I	0-20	10YR 5/1	Gray	sandy loam		NCM	
	II	20-45	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
465	I	0-10	10YR 5/1	Gray	sandy loam		NCM	
	II	10-30	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
466	I	0-19	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	Hydric soil
	II	19-40	10YR 8/6	Yellow	sandy clay loam	yes	NCM	
	III	40-48	10YR 5/1	Gray	sandy clay		NCM	TOE Hydric
467	I	0-16	10YR 5/1	Gray	sandy loam		NCM	
	II	16-41	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	41-57	10YR 8/6	Yellow	sandy clay		NCM	BOE
468	DNE							Saturated soils
469	I	0-8	10YR 6/1	Gray	silt loam		NCM	
	II	9-19	2.5Y 7/3	Pale Yellow	sandy clay loam	yes	NCM	
	III	19-30	2.5Y 6/8	Olive Yellow	sandy clay	yes	NCM	BOE
470	I	0-8	10YR 6/1	Gray	silt loam		NCM	
	II	8-31	2.5Y 7/3	Pale Yellow	sandy clay loam		NCM	
	III	31-40	2.5Y 6/6	Olive Yellow	sandy clay	yes	NCM	BOE
471	I	0-15	10YR 6/1	Gray	silt loam		NCM	
	II	11-35	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	35-45	2.5Y 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
472	I	0-7	10YR 4/3	Brown	silt loam		NCM	
	II	7-13	2.5Y 5/4	Light Olive Brown	sandy clay loam		NCM	
	III	13-23	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
473	I	0-11	10YR 4/3	Brown	silt loam		NCM	
	II	11-40	2.5Y 5/4	Light Olive Brown	sandy clay loam		NCM	
	III	40-50	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE

474	I	0-15	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	15-34	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	34-44	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
475	I	0-12	10YR 4/3	Brown	silt loam		NCM	
	II	12-37	10YR 6/4	Light Yellowish Brown	loamy sand		NCM	
	III	37-48	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
476	I	0-14	10YR 6/1	Gray	silty clay loam		NCM	
	II	14-39	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	39-50	10YR 5/4	Yellowish Brown	sandy clay		NCM	BOE
477	I	0-9	10YR 5/2	Grayish Brown	sandy loam		NCM	
	II	9-32	10YR 7/3	Very Pale Brown	sandy loam		NCM	15-20% rounded cobbles with small pebbles
	III	32-45	10YR 5/6	Yellowish Brown	sandy clay		NCM	15-20% rounded cobbles with small pebbles BOE
478	I	0-21	10YR 4/3	Brown	silt loam		NCM	
	II	21-60	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	60-65	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE NCM - granite rock impasse
479	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-51	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	51-62	10YR 5/6	Yellowish Brown	sandy clay		NCM	Compact, boe
480	I	0-12	10YR 3/2	Very Dark Grayish Brown	silt loam		NCM	
	II	12-25	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	TOE Bedrock
481	I	0-12	10YR 4/3	Brown	silt loam		NCM	
	II	12-37	10YR 5/6	Yellowish Brown	sandy clay		NCM	
	III	37-51	7.5YR 6/8	Reddish Yellow	sandy clay		NCM	BOE
482	I	0-14	10YR 2/1	Black	silt loam		NCM	
	II	14-55	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	55-70	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
483	DNE							High slope
484	I	0-8	10YR 4/3	Brown	sandy loam		NCM	
	II	8-22	10YR 7/3	Very Pale Brown	sand		NCM	
	III	22-40	10YR 6/6	Brownish Yellow	sandy clay		NCM	Coarse, BOE

485	I	0-11	10YR 4/3	Brown	sandy loam		NCM	
	II	11-30	10YR 7/4	Very Pale Brown	sand		NCM	
	III	30-40	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
486	I	0-19	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	19-36	10YR 7/6	Yellow	sandy loam	yes	NCM	TOE Bedrock
487	I	0-18	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	18-59	2.5Y 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	59-64	10YR 7/2	Light Gray	sandy clay	yes	NCM	TOE Bedrock
488	I	0-16	10YR 3/2	Very Dark Grayish Brown	silty clay loam		NCM	
	II	16-40	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	40-50	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
489	I	0-18	10YR 4/3	Brown	sandy loam		NCM	
	II	18-58	10YR 7/3	Very Pale Brown	sand		NCM	
	III	58-68	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
490	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-37	10YR 7/4	Very Pale Brown	sand	yes	NCM	Coarse
	III	37-47	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
491	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-43	10YR 7/4	Very Pale Brown	sand		NCM	
	III	43-53	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
492	I	0-20	10YR 4/3	Brown	sandy loam		NCM	
	II	20-67	10YR 7/3	Very Pale Brown	sand		NCM	
	III	67-77	10YR 7/8	Yellow	sandy clay		NCM	BOE
493	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-43	10YR 7/3	Very Pale Brown	sand		NCM	
	III	43-53	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
494	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	BOE
495	I	0-18	10YR 4/3	Brown	sandy loam		NCM	
	II	14-43	10YR 7/3	Very Pale Brown	sand		NCM	
	III	43-53	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

496	I	0-20	10YR 3/3	Dark Brown	silt loam		NCM	
	II	20-42	10YR 5/4	Yellowish Brown	clay loam		NCM	
	III	42-63	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
497	I	0-19	10YR 4/3	Brown	loamy sand		NCM	
	II	19-40	10YR 6/4	Light Yellowish Brown	loam		NCM	
	III	40-58	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	BOE
498	I	0-21	10YR 4/3	Brown	silt loam		NCM	
	II	21-39	10YR 5/3	Brown	clay loam		NCM	
	III	39-52	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
499	I	0-31	10YR 4/3	Brown	silt loam		NCM	
	II	31-47	10YR 6/3	Pale Brown	sandy clay loam	yes	NCM	30% gravel
	III	47-57	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
500	I	0-9	10YR 3/4	Dark Yellowish Brown	silt loam		NCM	
	II	9-33	10YR 5/4	Yellowish Brown	clay loam		NCM	
	III	33-50	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	NCM
501	I	0-20	10YR 3/3	Dark Brown	silt loam		NCM	
	II	20-33	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	33-50	10YR 3/6	Dark Yellowish Brown	sandy clay	yes	NCM	BOE 20% gravel
502	I	0-21	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	21-38	10YR 6/6	Brownish Yellow	silt loam		NCM	
	III	38-52	10YR 5/8	Yellowish Brown	clay loam	yes	NCM	BOE
503	DNE							High slope
504	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-50	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
505	I	0-20	10YR 4/3	Brown	sandy loam		NCM	
	II	20-43	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	TOE Bioturbation
506	DNE							High slope
507	DNE							High slope
508	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-50	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	Hydric TOE

509	I	0-23	10YR 4/3	Brown	sandy loam		NCM	
	II	23-50	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	50-55	10YR 6/6	Brownish Yellow	sandy clay		NCM	TOE Hydric
510	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-40	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	TOE Hydric
511	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	14-45	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	clay		NCM	TOE Hydric
512	I	0-10	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	10-35	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	TOE Root Impasse
513	I	0-30	10YR 5/1	Gray	sandy loam		NCM	
	II	30-50	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	BOE
514	I	0-17	10YR 5/1	Gray	sandy loam		NCM	TOE Hydric
515	I	0-14	10YR 5/1	Gray	sandy loam		NCM	
	II	14-38	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	38-50	10YR 8/6	Yellow	sandy clay		NCM	BOE
516	DNE							Saturated soils
517	I	0-14	10YR 4/4	Dark Yellowish Brown	loamy sand		NCM	
	II	14-43	10YR 5/4	Yellowish Brown	silt loam		NCM	
	III	43-61	10YR 6/4	Light Yellowish Brown	silty clay loam		NCM	BOE
518	I	0-10	10YR 4/3	Brown	silt loam		NCM	
	II	10-25	2.5Y 5/2	Grayish Brown	sandy clay	yes	NCM	
	III	25-36	2.5Y 6/8	Olive Yellow	sandy clay		NCM	BOE
519	DNE							In road
520	I	0-19	10YR 5/4	Yellowish Brown	silt loam		NCM	
	II	19-31	10YR 6/4	Light Yellowish Brown	silty clay loam		NCM	
	III	31-52	10YR 6/6	Brownish Yellow	clay loam		NCM	BOE
521	I	0-14	10YR 3/3	Dark Brown	silt loam		NCM	
	II	14-26	10YR 5/4	Yellowish Brown	silt		NCM	
	III	14-DL	10YR 5/6	Yellowish Brown	clay loam		NCM	BOE

522	I	0-22	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	22-43	10YR 6/3	Pale Brown	loamy sand		NCM	
	III	43-54	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
523	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-40	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	40-85	10YR 5/4	Yellowish Brown	silty clay loam		NCM	
	IV	85-100	10YR 6/6	Brownish Yellow	silty clay	yes	NCM	BOE
524	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
525	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-50	10YR 6/3	Pale Brown	sandy clay		NCM	
	III	50-78	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
526	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
527	I	0-70	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
528	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
529	I	0-20	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	20-50	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	50-65	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	TOE Rock impasse
530	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-55	10YR 5/6	Yellowish Brown	sandy clay loam	yes	NCM	35-40% pea gravels thru out strat II.
	II	55-65	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
531	I	0-20	10YR 2/2	Very Dark Brown	loamy sand		NCM	
	II	20-50	10YR 5/4	Yellowish Brown	sandy clay	yes	NCM	TOE Rock impasse
532	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
533	I	0-60	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE

534	I	0-7	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	7-48	10YR 7/2	Light Gray	silt loam		NCM	
	III	48-63	10YR 6/6	Brownish Yellow	sandy clay loam		NCM	BOE
535	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-36	10YR 7/3	Very Pale Brown	sand		NCM	
	III	36-46	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
536	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-44	10YR 7/3	Very Pale Brown	sand		NCM	
	III	44-54	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
537	I	0-20	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	20-70	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	70-80	10YR 6/6	Brownish Yellow	sandy clay loam	yes	NCM	BOE
538	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-36	10YR 7/4	Very Pale Brown	sand		NCM	
	III	36-46	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
539	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
540	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
541	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-53	10YR 7/3	Very Pale Brown	sand		NCM	
	III	53-63	7.5YR 6/8	Reddish Yellow	sandy clay	yes	NCM	BOE
542	I	0-14	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	14-33	10YR 6/4	Light Yellowish Brown	sand	yes	NCM	Highly compact, small rounded pebbles and cobbles, about 25-30% rock.
	III	33-69	10YR 5/6	Yellowish Brown	sandy clay	yes	5 flakes	Many small rounded pebbles
	IV	69-89	7.5YR 6/8	Reddish Yellow	sandy clay		Netherstone	Bulk of artifacts, including ground stone, came from interface, 2 flakes found towards bottom of first ten centimeters of strat 4. BOE.

S42-7.5-N	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-29	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	30% rounded pebbles and cobbles
	III	29-43	10YR 5/6	Yellowish Brown	sandy clay		NCM	5% gravel
	IV	43-55	7.5YR 5/6	Strong Brown	clay		NCM	BOE
S42-7.5-E	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-65	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	60-80% gravels thru out entire Strat II.
	III	65-75	7.5YR 5/6	Strong Brown	sandy clay	yes	NCM	BOE
S42-7.5-S	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-50	10YR 7/3	Very Pale Brown	sand		NCM	15% rounded pebbles
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	40% rounded pebbles, BOE
S42-7.5W	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-50	10YR 7/3	Very Pale Brown	sand		NCM	Coarse
	III	50-67	7.5YR 6/6	Reddish Yellow	sandy clay		NCM	40% rounded pebbles, BOE
S43	I	0-14	10YR 5/3	Brown	silt loam		NCM	
	II	14-44	10YR 6/3	Pale Brown	sandy clay		NCM	
	III	44-54	10YR 6/6 & 10YR 4/6	Brownish Yellow	sandy clay		NCM	BOE
S44	I	0-12	10YR 4/1	Dark Gray	silt loam		NCM	
	II	12-62	10YR 6/3	Pale Brown	sandy clay		Guilford point	Point in bottom of strat 2 at interface with b horizon.
	III	62-76	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
S44-7.5-N	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-50	10YR 7/3	Very Pale Brown	sand		Guilford point	
	III	50-60	7.5YR 6/6	Reddish Yellow	sandy clay	yes	NCM	BOE
S44-7.5-E	I	0-20	10YR 4/3	Brown	sandy loam		NCM	
	II	20-70	10YR 7/3	Very Pale Brown	sand		NCM	
	III	70-80	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
S44-7.5-S	I	0-10	10YR 5/1	Gray	silt loam		NCM	
	II	10-47	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	47-57	10YR 6/8	Brownish Yellow	sandy clay loam	yes	NCM	BOE

544-7.5-W	I	0-15	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	15-44	10YR 7/3	Very Pale Brown	loamy sand		Flake	
	III	44-56	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
544-22.5-N	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	Coarse, BOE
544-22.5-W	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-65	7.5YR 6/8	Reddish Yellow	sandy clay		NCM	Coarse, BOE
545	I	0-23	10YR 4/3	Brown	silt loam		NCM	
	II	23-57	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	57-70	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
546	I	0-11	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	11-50	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	50-62	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
547	I	0-19	10YR 4/3	Brown	silt loam		NCM	
	II	19-50	10YR 6/3	Pale Brown	sand		NCM	
	III	50-62	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
548	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-46	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	46-58	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
549	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-65	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	65-75	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
550	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-65	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	65-75	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
551	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-65	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	65-75	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
552	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-55	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	55-65	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

553	I	0-19	10YR 6/1	Gray	silty clay loam		NCM	
	II	19-26	2.5Y 7/4	Pale Yellow	sandy clay loam		NCM	
	III	26-36	2.5Y 7/8	Yellow	sandy clay	yes	NCM	BOE
554	DNE							High slope
555	DNE							high slope
556	DNE							High slope
557	DNE							High slope
558	I	0-22	10YR 5/1	Gray	sandy loam		NCM	
	II	22-44	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	BOE
559	I	0-30	10YR 5/1	Gray	silt loam		NCM	
	II	30-41	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
560	I	0-25	10YR 5/1	Gray	silt loam		NCM	
	II	25-40	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
561	I	0-24	10YR 5/1	Gray	sandy loam		NCM	
	II	24-43	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
562	I	0-28	10YR 5/1	Gray	silt loam		NCM	
	II	28-41	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Root Impasse
563	I	0-15	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	15-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	TOE Groundwater
564	I	0-15	10YR 3/1	Very Dark Gray	sandy loam		NCM	
	II	15-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	TOE Groundwater
565	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-55	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	55-65	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
566	I	0-10	10YR 3/1	Very Dark Gray	sandy loam		NCM	
	II	10-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
567	DNE							Saturated soils
568	I	0-10	10YR 4/3	Brown	silt loam		NCM	
	II	10-44	10YR 6/3	Pale Brown	sandy clay		NCM	
	III	44-54	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE

569	I	0-14	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	14-53	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	53-64	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
570	DNE							In road
571	I	0-10	10YR 5/1	Gray	silt loam		NCM	
	II	10-37	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	
	III	37-48	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
572	I	0-20	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	22-45	10YR 5/4	Yellowish Brown	loamy sand		NCM	
	III	45-60	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
573	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-30	10YR 7/3	Very Pale Brown	sand		NCM	
	III	30-40	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
574	I	0-13	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	13-41	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	41-52	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
575	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	12-29	10YR 7/2	Light Gray	sandy loam		NCM	
	III	29-40	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
576	I	0-11	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	11-35	10YR 7/2	Light Gray	sandy loam		NCM	
	III	35-45	10YR 6/6	Brownish Yellow	sandy clay loam	yes	NCM	BOE
577	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	11-33	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	33-44	10YR 6/6	Brownish Yellow	sandy clay loam	yes	NCM	BOE
578	I	0-18	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	17-44	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	33-45	10YR 6/8	Brownish Yellow	sandy clay loam	yes	NCM	BOE
579	I	0-13	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	13-34	10YR 7/3	Very Pale Brown	sandy loam		NCM	Rounded rocks 20%
	III	34-49	10YR 6/6	Brownish Yellow	sandy clay loam	yes	NCM	BOE
580	I	0-15	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	15-35	10YR 5/3	Brown	sand		NCM	
	III	35-55	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE

581	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-80	10YR 5/3	Brown	sandy clay loam		NCM	
	III	80-90	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
582	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-85	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	85-95	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
583	I	0-12	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	12-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
584	I	0-20	10YR 3/3	Dark Brown	sandy loam		Debitage	
	II	20-57	10YR 8/4	Very Pale Brown	sand		Debitage	
	III	57-70	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
585	I	0-12	10YR 3/3	Dark Brown	sandy loam		Flake	
	II	12-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	40% gravels and fist sized stones between bottom of strat II and top of strat III.
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
586	I	0-15	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	15-60	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	60-70	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
587	I	0-25	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	25-45	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	45-60	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
588	I	0-15	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	15-35	10YR 4/4	Dark Yellowish Brown	sand		NCM	
	III	35-50	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
589	I	0-20	10YR 4/3	Brown	silt loam		NCM	
	II	20-32	10YR 6/3	Pale Brown	sandy clay		NCM	
	III	32-43	10R 5/6	Red	clay		NCM	BOE
590	I	0-13	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	13-46	10YR 7/3	Very Pale Brown	sandy clay		NCM	
	III	46-58	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE

591	I	0-12	10YR 4/1	Dark Gray	silt loam		NCM	
	II	12-60	10YR 6/3	Pale Brown	sandy clay		1 flake	
	III	60-76	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
592	I	0-9	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	9-28	10YR 6/3	Pale Brown	sandy clay		NCM	
	III	28-40	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
593	I	0-16	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	16-40	10YR 6/4	Light Yellowish Brown	loamy sand		NCM	
	III	40-54	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
594	I	0-20	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	20-35	10YR 6/3	Pale Brown	loamy sand		NCM	
	III	35-52	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
595	I	0-12	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	12-24	10YR 7/3	Very Pale Brown	sand	yes	NCM	Hardpan
	III	24-35	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	TOE Hardpan
596	I	0-9	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	9-19	10YR 5/3	Brown	sandy clay loam		NCM	
	III	19-53	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	IV	53-65	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
597	I	0-22	10YR 5/2	Grayish Brown	sandy loam		NCM	
	II	22-77	10YR 6/3	Pale Brown	sandy clay		NCM	
	III	77-89	10YR 5/8 & 10YR 6/6	Yellowish Brown & Brownis	sandy clay		NCM	BOE
598	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	12-65	2.5Y 5/4	Light Olive Brown	sandy clay		Flake	
	III	65-80	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
598-7.5-N	I	0-17	10YR 5/1	Gray	silt loam		NCM	
	II	17-40	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
598-7.5-E	I	0-24	10YR 4/3	Brown	sandy loam		NCM	
	II	24-58	10YR 6/3	Pale Brown	sandy clay		NCM	Hydric
	III	58-68	7.5YR 6/6	Reddish Yellow	clay		NCM	Hydric, BOE
598-7.5-S	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-60	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE

598-7.5-W	I	0-26	10YR 5/1	Gray	sandy loam		NCM	
	II	26-42	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	42-61	10YR 8/6	Yellow	sandy clay	yes	NCM	BOE
599	I	0-12	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	12-47	10YR 7/4	Very Pale Brown	sandy clay		NCM	
	III	47-51	10YR 6/6	Brownish Yellow	sandy clay		NCM	TOE Hydric
600	I	0-10	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	10-39	2.5Y 7/4	Pale Yellow	sandy clay		NCM	Toe, hydric
601	DNE							High slope
602	DNE							High slope
603	DNE							High slope
604	DNE							High slope
605	DNE							High slope
606	DNE							High slope
607	I	0-15	10YR 5/1	Gray	silt loam		NCM	
	II	15-53	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	Wet
	III	53-63	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE Hydric
608	I	0-16	10YR 4/1	Dark Gray	silt loam		NCM	
	II	17-44	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	44-54	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
609	I	0-17	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	17-51	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	51-61	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
610	I	0-15	10YR 4/1	Dark Gray	silt loam		NCM	
	II	15-48	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	47-57	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
611	I	0-16	10YR 4/1	Dark Gray	silt loam		NCM	
	II	16-47	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	47-57	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
612	I	0-13	10YR 5/1	Gray	silt loam		NCM	
	II	13-42	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	42-52	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

613	I	0-12	10YR 5/1	Gray	silt loam		NCM	
	II	12-62	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	62-72	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
614	I	0-10	10YR 5/1	Gray	silt loam		NCM	
	II	10-47	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	47-57	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
615	DNE							High slope
616	I	0-12	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	12-49	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	49-59	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
617	I	0-21	10YR 5/1	Gray	silt loam		NCM	
	II	21-35	10YR 8/4	Very Pale Brown	sand		NCM	
	III	35-50	10YR 8/8	Yellow	sandy clay	yes	NCM	BOE
618	I	0-18	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	18-33	2.5Y 5/4	Light Olive Brown	sandy clay	yes	NCM	
	III	33-44	2.5Y 5/6	Light Olive Brown	sandy clay		NCM	BOE
619	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-30	10YR 7/2 & 2.5Y 6/2	Light Gray & Light Brown	sandy clay	yes	NCM	
	III	30-40	10YR 6/6	Brownish Yellow	clay	yes	NCM	BOE
620	I	0-10	10YR 5/1	Gray	silt loam		NCM	
	II	10-22	10YR 8/4	Very Pale Brown	sandy clay	yes	NCM	
	III	22-33	10YR 8/8	Yellow	sandy clay loam	yes	NCM	BOE
621	I	0-4	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	4-8	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	8-20	10YR 5/6 & 7.5YR 6/8	Yellowish Brown & Reddish	sandy clay		NCM	BOE
622	I	0-17	10YR 5/1	Gray	silt loam		NCM	
	II	17-36	10YR 8/4	Very Pale Brown	sandy clay		NCM	
	III	36-54	10YR 8/6	Yellow	sandy clay loam	yes	NCM	BOE
623	I	0-18	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	18-33	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	33-43	2.5Y 5/6	Light Olive Brown	sandy clay		NCM	
	IV	43-60	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE

624	I	0-25	10YR 5/1	Gray	silt loam		NCM	
	II	25-46	10YR 8/4	Very Pale Brown	sand		NCM	
	III	46-64	10YR 8/6	Yellow	sandy clay	yes	NCM	BOE
625	I	0-20	10YR 5/1	Gray	silt loam		NCM	
	II	20-35	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	35-60	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	BOE
626	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
627	I	0-16	10YR 5/1	Gray	silt loam		NCM	
	II	16-37	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	37-47	10YR 6/6	Brownish Yellow	sand	yes	NCM	BOE
628	I	0-11	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	11-50	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	50-65	10YR 5/6	Yellowish Brown	clay		NCM	BOE
629	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-55	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	55-65	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
630	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	TOE Root Impasse
631	I	0-14	10YR 5/1	Gray	silt loam		NCM	
	II	14-55	10YR 7/2	Light Gray	sandy loam		NCM	
	III	55-66	10YR 6/6	Brownish Yellow	sandy clay loam	yes	NCM	BOE
632	I	0-18	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	18-49	10YR 7/4	Very Pale Brown	sandy loam		Flakes	Flakes found at roughly 30-40cm
	III	49-61	10YR 6/8	Brownish Yellow	sandy clay loam	yes	NCM	Pebble gravel 30%. BOE.
633	I	0-16	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	16-48	10YR 7/2	Light Gray	sandy loam		NCM	
	III	48-59	10YR 6/8	Brownish Yellow	sandy clay loam	yes	NCM	BOE
634	I	0-12	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	12-29	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	29-40	10YR 6/6	Brownish Yellow	sandy clay loam	yes	NCM	BOE. Rounded stones 15%

635	I	0-25	10YR 3/3	Dark Brown	sandy loam		NCM	Bio turbation
	II	25-70	10YR 5/3	Brown	sandy clay loam		NCM	Bio turbation
	III	70-80	10YR 6/3	Pale Brown	sandy clay	yes	NCM	BOE
636	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-60	10YR 5/3	Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/3	Pale Brown	sandy clay	yes	NCM	BOE
637	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-75	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	75-85	10YR 6/3	Pale Brown	sandy clay	yes	NCM	BOE
638	I	0-15	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	15-60	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	60-80	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
639	I	0-15	10YR 2/2	Very Dark Brown	silt loam		Flake	
	II	15-50	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	50-60	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
640	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
641	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-57	10YR 7/3	Very Pale Brown	sand		NCM	
	III	57-67	7.5YR 6/8	Reddish Yellow	sandy clay	yes	NCM	Hardpan, BOE
642	I	0-14	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	14-30	10YR 6/4	Light Yellowish Brown	loamy sand		NCM	
	III	30-44	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
643	I	0-12	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	12-40	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	40-51	10YR 6/8	Brownish Yellow	sandy clay loam	yes	NCM	BOE
644	I	0-8	10YR 4/3	Brown	sandy loam		NCM	
	II	8-34	10YR 6/3	Pale Brown	silt loam		NCM	TOE-root impasse
645	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

646	I	0-24	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	24-39	10YR 6/3	Pale Brown	sandy loam	yes	NCM	20% gravel
	III	39-53	10YR 5/6	Yellowish Brown	sandy clay loam	yes	NCM	BOE
647	I	0-17	10YR 3/3	Dark Brown	silt loam		NCM	
	II	17-42	10YR 6/4	Light Yellowish Brown	clay loam		NCM	
	III	42-56	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	BOE
648	I	0-23	10YR 4/3	Brown	sandy loam		NCM	
	II	23-41	10YR 5/3	Brown	clay loam		NCM	
	III	41-56	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	BOE
649	DNE							High slope
650	DNE							High slope
651	DNE							High slope
652	DNE							High slope
653	DNE							High slope
654	DNE							High slope
655	I	0-14	10YR 4/1	Dark Gray	silt loam		NCM	
	II	14-45	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	45-55	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE Hydric
656	I	0-15	10YR 4/1	Dark Gray	silt loam		NCM	TOE Root Impasse
657	I	0-11	10YR 4/1	Dark Gray	silt loam		NCM	
	II	11-44	10YR 7/2	Light Gray	sandy clay loam		NCM	
	III	44-54	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	Smooth stones 10% BOE
658	I	0-12	10YR 4/1	Dark Gray	silt loam		NCM	
	II	12-34	10YR 6/3	Pale Brown	sandy clay loam		NCM	TOE Root Impasse
659	I	0-10	10YR 4/1	Dark Gray	silt loam		NCM	
	II	10-25	10YR 6/2	Light Brownish Gray	sandy clay loam		NCM	
	III	25-35	7.5YR 5/8	Strong Brown	sandy clay	yes	NCM	BOE
660	I	0-19	10YR 5/1	Gray	silt loam		NCM	
	II	19-44	10YR 8/4	Very Pale Brown	loamy sand		NCM	
	III	44-61	10YR 8/3	Very Pale Brown	sandy clay	yes	NCM	BOE
661	I	0-20	10YR 5/1	Gray	silt loam		NCM	
	II	20-50	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	50-60	10YR 8/6	Yellow	sandy clay	yes	NCM	BOE
662	DNE							High slope

663	I	0-15	10YR 5/1	Gray	silt loam		NCM	
	II	15-40	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	40-58	10YR 8/6	Yellow	sandy clay		NCM	BOE
664	I	0-12	10YR 5/1	Gray	silt loam		NCM	
	II	12-47	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	47-57	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
665	I	0-11	10YR 5/1	Gray	silt loam		NCM	
	II	11-34	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	34-44	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
666	I	0-17	2.5Y 7/1	Light Gray	sandy clay		NCM	Wet
	II	17-25	2.5Y 7/6	Yellow	clay		NCM	TOE Groundwater
667	I	0-9	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	9-27	10YR 7/4	Very Pale Brown	sandy clay loam	yes	NCM	
	III	27-38	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
668	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-33	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	33-43	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
669	I	0-11	10YR 5/1	Gray	silt loam		NCM	
	II	11-39	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	39-49	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
670	I	0-11	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	11-48	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	48-58	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
671	I	0-16	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	16-41	10YR 7/6	Yellow	sandy loam		NCM	
	III	41-51	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
672	I	0-12	10YR 5/1	Gray	silt loam		NCM	
	II	12-34	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	34-44	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
673	I	0-18	10YR 4/3	Brown	silt loam		NCM	
	II	18-40	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	40-56	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE

674	I	0-16	10YR 3/3	Dark Brown	silt loam		NCM	
	II	16-48	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	48-59	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
675	I	0-14	10YR 4/3	Brown	silt loam		NCM	
	II	14-46	2.5YR 5/4	Reddish Brown	sandy clay		NCM	
	III	46-56	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
676	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-42	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	
	III	42-52	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
677	I	0-15	10YR 4/3	Brown	silt loam		NCM	
	II	15-38	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	38-50	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
678	I	0-11	10YR 4/3	Brown	sandy loam		4 flakes	
	II	11-59	10YR 7/3	Very Pale Brown	loamy sand		4 flakes	
	III	59-79	10YR 6/8	Brownish Yellow	sandy clay		1 flake	BOE
679	I	0-13	10YR 4/4	Dark Yellowish Brown	sandy loam		NCM	
	II	13-50	10YR 6/4	Light Yellowish Brown	sandy clay		1 core, 10 flakes	
	III	50-62	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE
680	I	0-15	10YR 4/3	Brown	sandy loam		2 flakes	
	II	15-53	10YR 6/4	Light Yellowish Brown	sandy clay		11 flakes	
	III	53-73	10YR 5/8	Yellowish Brown	sandy clay		2 flakes	BOE
681	I	0-13	10YR 4/3	Brown	silt loam		NCM	
	II	13-49	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	49-61	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
682	I	0-16	10R 5/1	Reddish Gray	silt loam		NCM	
	II	16-65	10YR 7/3	Very Pale Brown	sandy clay		1 flake	Flake found near interface w B
	III	65-80	10YR 7/4 & 10YR 6/6	Very Pale Brown & Brownis	sandy clay		NCM	BOE
683	I	0-16	10YR 5/1	Gray	silt loam		NCM	
	II	16-64	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	64-74	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE

684	I	0-13	10YR 5/1	Gray	silt loam		NCM	
	II	13-50	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	50-61	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE 10% pebble gravel
685	I	0-16	10YR 5/1	Gray	silt loam		NCM	
	II	16-37	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	37-47	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE 10% pebble gravel
686	I	0-16	10YR 5/1	Gray	silt loam		NCM	
	II	16-71	10YR 7/4	Very Pale Brown	sandy clay loam		Flakes	
	III	71-81	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
687	I	0-21	10YR 5/1	Gray	silty clay loam		NCM	
	II	21-48	10YR 7/4	Very Pale Brown	sandy loam		Quartz flake	
	III	48-58	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	Rocky 15% BOE
688	I	0-23	10YR 5/1	Gray	sandy loam		NCM	
	II	23-60	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
689	I	0-25	10YR 5/1	Gray	sandy loam		NCM	
	II	25-45	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
690	I	0-10	10YR 5/1	Gray	sandy loam		NCM	
	II	10-40	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Hydric
691	I	0-22	10YR 5/1	Gray	sandy loam		NCM	
	II	22-39	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	39-53	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
692	I	0-20	10YR 5/1	Gray	silt loam		NCM	
	II	20-58	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	58-63	10YR 8/6	Yellow	sandy clay	yes	NCM	TOE Hydric
693	DNE							High slope
694	DNE							High slope
695	DNE							High slope
696	DNE							High slope
697	DNE							High slope
698	DNE							High slope

699	I	0-18	10YR 4/3	Brown	silt loam		NCM	
	II	18-70	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	70-85	10YR 5/6	Yellowish Brown	sandy loam		NCM	BOE
700	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-41	2.5Y 5/4	Light Olive Brown	sandy clay	yes	NCM	
	III	41-51	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE
701	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-50	2.5Y 5/4	Light Olive Brown	silty clay loam		NCM	
	III	50-60	2.5YR 5/4 & 10YR 5/6	Reddish Brown & Yellowish Brown	sandy clay		NCM	BOE
702	I	0-10	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	10-62	2.5Y 5/4	Light Olive Brown	sandy clay loam		NCM	
	III	62-70	2.5Y 6/2 & 7.5YR 5/8	Light Brownish Gray & Strong Brown	sandy clay		NCM	TOE Hydric
703	I	0-9	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	9-47	10YR 5/4	Yellowish Brown	sandy clay		NCM	TOE Root Impasse
704	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
705	I	0-15	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	Floodplain.
	II	20-60	2.5Y 5/2	Grayish Brown	sandy clay loam		NCM	TOE Groundwater
706	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-34	10YR 7/3	Very Pale Brown	sand		Kirk Point	
	III	34-44	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
706-7.5-N	I	0-19	10R 4/1	Dark Reddish Gray	silt loam		NCM	
	II	19-53	2.5YR 6/2	Pale Red	sandy clay		NCM	
	III	53-65	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
706-7.5-E	I	0-9	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	9-21	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	
	III	21-31	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
706-7.5-S	I	0-11	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	11-37	10YR 6/3	Pale Brown	silt loam	yes	NCM	
	III	37-50	10YR 5/4	Yellowish Brown	clay loam	yes	NCM	BOE

706-7.5-W	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-45	10YR 7/2	Light Gray	sand		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
707	I	0-20	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	20-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	45-50% gravels thru out
	III	50-60	7.5YR 5/6	Strong Brown	sandy clay	yes	NCM	BOE
708	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-40	10YR 7/3	Very Pale Brown	sand		NCM	60% pebbles, TOE compaction
709	DNE							High slope
710	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-43	10YR 7/3	Very Pale Brown	sand		NCM	
	III	43-53	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
711	I	0-15	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	Some charcoal
	II	15-55	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	55-65	7.5YR 5/6	Strong Brown	sandy clay	yes	NCM	BOE
712	I	0-10	10YR 4/3	Brown	silt loam		NCM	
	II	10-50	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	50-60	2.5Y 5/6 & 10YR 4/6	Light Olive Brown & Dark Yellowish Brown	clay		NCM	BOE
713	DNE							Standing water
714	I	0-11	10YR 4/3	Brown	sandy loam		NCM	
	II	11-36	5Y 7/2	Light Gray	sandy clay		NCM	Hydric
	III	36-46	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE Hydric
715	I	0-7	10YR 2/2	Very Dark Brown	silt loam		NCM	Humus
	II	7-20	10YR 4/2	Dark Grayish Brown	silty clay loam		NCM	
	III	20-38	10YR 5/4 & 10YR 5/2	Yellowish Brown & Grayish	sandy clay loam	yes	NCM	BOE
716	I	0-5	10YR 2/2	Very Dark Brown	silt loam		NCM	90% organic
	II	5-15	10YR 5/3	Brown	sandy loam		NCM	
	III	15-38	10YR 5/8 & 10YR 6/3	Yellowish Brown & Pale Brown	sandy clay		NCM	BOE

717	I	0-11	10YR 3/4	Dark Yellowish Brown	silt loam		NCM	
	II	11-31	10YR 5/4	Yellowish Brown	silt	yes	NCM	
	III	31-41	10YR 5/4	Yellowish Brown	silty clay loam	yes	NCM	TOE- hard pan
718	I	0-18	10YR 3/3	Dark Brown	silt loam		NCM	
	II	18-35	10YR 5/4	Yellowish Brown	sandy loam	yes	NCM	33% gravel
	III	35-58	10YR 4/6	Dark Yellowish Brown	sandy clay loam	yes	NCM	BOE
719	I	0-20	10YR 3/3	Dark Brown	silt loam		NCM	
	II	20-50	10YR 4/4	Dark Yellowish Brown	silty clay loam	yes	NCM	
	III	50-60	10YR 4/6	Dark Yellowish Brown	sandy clay	yes	NCM	BOE
720	I	0-21	10YR 5/1	Gray	silt loam		NCM	
	II	21-34	10YR 7/2	Light Gray	sandy clay loam		NCM	
	III	34-44	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
721	I	0-19	10YR 5/1	Gray	silt loam		NCM	
	II	19-36	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	36-47	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
722	I	0-15	10YR 5/1	Gray	silt loam		NCM	
	II	15-38	10YR 7/2	Light Gray	sandy loam		NCM	
	III	38-50	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
723	I	0-11	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	11-45	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
724	I	0-9	10YR 5/1	Gray	silt loam		NCM	
	II	9-27	10YR 7/3	Very Pale Brown	sandy loam		NCM	TOE Root Impasse
725	I	0-18	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	18-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-63	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
726	I	0-16	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	16-60	10YR 7/4	Very Pale Brown	sand		NCM	
	III	60-74	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
727	I	0-21	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	12-38	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	38-53	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE

729	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 7/6	Yellow	sandy clay		NCM	BOE
730	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-42	10YR 7/2	Light Gray	sand		NCM	
	III	42-52	7.5YR 6/6	Reddish Yellow	sandy clay		NCM	BOE
731	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-45	10YR 7/3	Very Pale Brown	sand		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
732	I	0-18	10YR 4/3	Brown	sandy loam		NCM	
	II	15-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
733	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
734	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-75	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	75-85	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
735	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
736	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
737	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	TOE Groundwater
738	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
739	I	0-22	10YR 5/1	Gray	silty clay loam		NCM	
	II	22-47	10YR 7/6	Yellow	sandy clay		NCM	TOE Groundwater
740	DNE							High slope
741	DNE							High slope

742	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-38	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	TOE Hydric
743	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-35	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	35-45	10YR 6/6	Brownish Yellow	sandy clay		NCM	TOE Hydric
744	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-33	10YR 7/3	Very Pale Brown	sandy clay		NCM	HYDRIC TOE
745	I	0-15	10YR 4/3	Brown	sandy loam		NCN	
	II	15-38	10YR 7/2	Light Gray	sandy clay		NCM	Hydric
	III	38-48	10YR 6/6	Brownish Yellow	clay		NCM	BOE
746	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-46	10YR 7/3	Very Pale Brown	sandy clay		NCM	
	III	46-56	10YR 6/6	Brownish Yellow	sandy clay		NCM	Hydric BOE
747	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-43	10YR 7/2	Light Gray	sandy clay		NCM	
	III	43-53	10YR 6/6	Brownish Yellow	clay		NCM	Hydric, BOE
748	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-50	10YR 7/3	Very Pale Brown	sandy clay		3 flakes	Flakes not recovered
	III	50-60	10YR 6/6	Brownish Yellow	clay		NCM	Hydric, BOE
749	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-43	10YR 7/2	Light Gray	sandy clay		NCM	
	III	43-53	10YR 6/6	Brownish Yellow	clay		NCM	Hydric BOE
750	I	0-12	10YR 4/3	Brown	silt loam		NCM	
	II	12-46	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	46-58	10YR 5/6 & 10YR 7/3	Yellowish Brown & Very Pal	clay		NCM	BOE
751	I	0-12	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	12-38	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	38-48	10YR 5/6	Yellowish Brown	clay		NCM	BOE
752	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-40	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	40-53	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
753	DNE							High slope

754	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-48	10YR 7/3	Very Pale Brown	sand		NCM	
	III	48-58	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
755	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
756	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-30	10YR 7/3	Very Pale Brown	sand		NCM	
	III	30-40	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
757	I	0-10	10YR 4/3	Brown	clay loam		NCM	Poorly drained
	II	10-30	10YR 7/3	Very Pale Brown	sandy clay		NCM	
	III	30-40	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
758	DNE							Standing water
759	I	0-13	10YR 4/3	Brown	clay loam		NCM	
	II	13-28	5YR 7/2	Pinkish Gray	sandy clay		NCM	
	III	28-38	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
760	I	0-12	10YR 4/3	Brown	clay loam		NCM	
	II	12-36	5Y 8/2	Pale Yellow	sandy clay	yes	NCM	
	III	36-46	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
761	DNE							In road
762	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
763	I	0-13	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	13-39	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	39-49	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
764	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-33	10YR 8/6	Yellow	sandy clay		NCM	
	III	33-43	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
765	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-38	10YR 7/3	Very Pale Brown	sand		NCM	
	III	38-48	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE

766	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-33	10YR 7/3	Very Pale Brown	sand	yes	NCM	Hardpan
	III	33-36	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	Hardpan Impasse TOE
767	I	0-20	10YR 5/4	Yellowish Brown	sandy loam		NCM	
	II	20-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
768	I	0-20	10YR 4/3	Brown	sandy loam		NCM	
	II	20-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
769	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
770	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
771	I	0-5	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	5-35	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	35-45	7.5YR 5/6	Strong Brown	sandy clay	yes	NCM	BOE
772	I	0-5	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	5-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	7.5YR 5/6	Strong Brown	sandy clay	yes	NCM	BOE
773	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
774	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
775	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-35	10YR 7/3	Very Pale Brown	sand		NCM	
	III	35-45	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
776	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-35	10YR 7/3	Very Pale Brown	sand		NCM	
	III	35-45	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

777	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
778	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
779	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-34	10YR 7/3	Very Pale Brown	sand		NCM	
	III	34-44	7.5YR 6/8	Reddish Yellow	sandy clay		NCM	BOE
780	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	7.5YR 5/8	Strong Brown	sandy clay		NCM	BOE
781	I	0-27	10YR 4/3	Brown	sandy loam		NCM	
	II	27-44	10YR 7/3	Very Pale Brown	sand		NCM	
	III	44-54	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
782	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
783	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-45	10YR 7/3	Very Pale Brown	sand		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
784	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
785	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-40	10YR 6/3	Pale Brown	sandy clay		NCM	Hydric
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	Hydric BOE
786	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-34	10YR 6/3	Pale Brown	sandy clay		NCM	Hydric
	III	34-44	10YR 6/6	Brownish Yellow	sandy clay		NCM	Hydric BOE
787	DNE							Hydric slope
788	DNE							Hydric slope
789	DNE							High slope
790	DNE							Hydric slope

791	DNE							Hydric slope
792	DNE							Hydric slope
793	DNE							Hydric; slope down to creek
794	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	14-40	10YR 7/3	Very Pale Brown	sand		NCM	Hydric
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	Hydric, BOE
795	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-50	10YR 7/3	Very Pale Brown	sand		NCM	Hydric
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	Hydric BOE
796	I	0-15	10YR 5/1	Gray	silt loam		NCM	
	II	15-42	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	42-52	10YR 8/6	Yellow	sandy clay		NCM	BOE
797	I	0-21	10YR 3/3	Dark Brown	silt loam		NCM	
	II	21-44	10YR 6/3	Pale Brown	silt loam		NCM	
	III	44-54	10YR 5/4	Yellowish Brown	silty clay loam	yes	NCM	BOE
798	I	0-13	10YR 5/1	Gray	silt loam		NCM	
	II	13-34	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	34-47	10YR 8/6	Yellow	sandy clay	yes	NCM	BOE
799	I	0-11	10YR 5/1	Gray	silt loam		NCM	
	II	11-30	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	TOE Root Impasse
800	I	0-15	10YR 2/1	Black	sandy loam		NCM	
	II	15-33	10YR 5/4	Yellowish Brown	loamy sand	yes	4 flakes	
	III	33-43	10YR 6/4	Light Yellowish Brown	sandy clay loam	yes	NCM	20% gravel BOE
801	I	0-19	10YR 4/3	Brown	sandy loam		NCM	
	II	19-41	10YR 5/4	Yellowish Brown	sandy loam		Charcoal	
	III	41-54	10YR 4/6	Dark Yellowish Brown	silt loam	yes	NCM	BOE
802	I	0-15	10YR 3/3	Dark Brown	silt loam		NCM	
	II	15-46	10YR 5/3	Brown	silty clay loam		Flake	
	III	46-56	10YR 6/3	Pale Brown	silty clay	yes	NCM	BOE

803	I	0-18	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	18-51	10YR 5/3	Brown	silt loam		2 flakes	
	III	51-64	10YR 5/4	Yellowish Brown	sandy clay loam	yes	NCM	BOE
804	I	0-5	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	5-17	10YR 3/4	Dark Yellowish Brown	loamy sand		NCM	
	III	17-50	10YR 6/4	Light Yellowish Brown	silt loam	yes	NCM	BOE
805	I	0-15	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	15- 50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
806	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-55	10YR 5/4	Yellowish Brown	sandy clay loam	yes	NCM	Very compact. Sterile soils.
	III	55-65	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
807	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
808	I	0-18	10YR 4/3	Brown	sandy loam		NCM	
	II	18-33	10YR 7/3	Very Pale Brown	sand		NCM	
	III	33-43	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
809	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/3	Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
810	DNE							In road
811	I	0-12	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	12-60	10YR 5/4	Yellowish Brown	sandy clay loam		1 flake	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
811-7.5-N	I	0-17	10YR 5/1	Gray	silt loam		NCM	
	II	17-23	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	23-41	10YR 8/6	Yellow	sandy clay	yes	NCM	BOE
811-7.5-E	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE

811-7.5-S	I	0-14	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	14-48	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	48-59	10YR 5/6	Yellowish Brown	clay		NCM	BOE
811-7.5-W	I	0-5	10YR 3/3	Dark Brown	silt loam		NCM	
	II	5-42	10YR 5/6	Yellowish Brown	sand		NCM	
	III	42-57	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
812	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
813	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-40	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
814	DNE							In road
815	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	7.5YR 5/6	Strong Brown	sandy clay	yes	NCM	BOE
816	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
817	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-70	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
818	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-65	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	65-75	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE Gravel
819	I	0-12	10YR 4/3	Brown	silt loam		NCM	
	II	12-43	10YR 6/4	Light Yellowish Brown	sandy clay loam		NCM	
	III	43-58	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
820	I	0-8	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	8-55	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	55-65	10YR 5/4	Yellowish Brown	sandy clay	yes	NCM	BOE
821	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-75	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	75-85	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

822	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-60	10YR 5/3	Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
823	I	0-16	10YR 4/3	Brown	silt loam		Flake	
	II	16-34	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	34-50	5YR 5/8	Yellowish Red	sandy clay		NCM	BOE
824	I	0-20	10YR 4/3	Brown	silt loam		NCM	
	II	20-40	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	40-54	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
825	I	0-20	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	20-45	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	45-60	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
826	I	0-23	10YR 4/3	Brown	silt loam		NCM	
	II	23-65	10YR 6/3	Pale Brown	sandy clay		NCM	
	III	65-75	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
827	I	0-13	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	13-88	10YR 7/3	Very Pale Brown	sand		NCM	
	III	88-103	10YR 6/6 & 10YR 4/6	Brownish Yellow	sandy clay		NCM	BOE
828	I	0-20	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	20-30	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	30-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
829	I	0-23	10YR 3/3	Dark Brown	silt loam		NCM	
	II	23-43	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	43-55	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
830	I	0-22	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	22-50	10YR 7/4	Very Pale Brown	sand		NCM	
	III	50-60	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
831	I	0-20	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	20-40	10YR 7/4	Very Pale Brown	sand		NCM	
	III	40-53	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE

832	I	0-18	10YR 4/3	Brown	sandy loam		NCM	
	II	18-45	10YR 5/4	Yellowish Brown	sandy loam		NCM	
	III	45-62	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	BOE
833	I	0-22	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	22-32	10YR 7/4	Very Pale Brown	sand		NCM	
	III	32-50	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
834	I	0-20	10YR 4/1	Dark Gray	silt loam		NCM	
	II	20-40	10YR 7/4	Very Pale Brown	sand		NCM	
	III	40-73	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
835	I	0-16	10YR 5/1	Gray	silt loam		NCM	
	II	16-43	10YR 7/4	Very Pale Brown	sand		NCM	
	III	43-66	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
836	I	0-22	10YR 4/3	Brown	silt loam		NCM	
	II	22-40	10YR 7/4	Very Pale Brown	sand		NCM	
	III	40-70	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
837	DNE							High slope
838	I	0-15	10YR 3/3	Dark Brown	sandy loam		1 biface, 15 flakes	
	II	15-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
839	I	0-11	10YR 3/3	Dark Brown	silt loam		NCM	
	II	11-52	2.5Y 6/4	Light Yellowish Brown	sandy clay		Core	
	III	52-66	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
840	I	0-12	10YR 4/3	Brown	sandy loam		1 flake	
	II	12-45	2.5Y 6/4	Light Yellowish Brown	sandy clay		1 flake	
	III	45-58	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
841	I	0-10	10YR 5/1	Gray	silt loam		NCM	
	II	10-46	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	46-56	10YR 5/6	Yellowish Brown	sandy clay		NCM	TOE Bedrock
842	I	0-12	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	12-30	2.5Y 5/4	Light Olive Brown	sandy clay		1 flake	
	III	30-46	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE

843	I	0-7	10YR 4/3	Brown	silt loam		NCM	
	II	7-32	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	32-46	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
844	I	0-12	10YR 4/3	Brown	silt loam		NCM	
	II	12-58	2.5Y 5/4	Light Olive Brown	sandy clay loam		1 flake	
	III	58-68	10YR 5/6	Yellowish Brown	sandy clay		NCM	Large cobbles (8cms in diameter) present at top of level. BOE
845	I	0-20	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	20-39	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	TOE Root Impasse
846	I	0-9	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	9-44	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	44-55	7.5YR 5/6	Strong Brown	sandy clay		NCM	BOE
847	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
848	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
849	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
850	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
851	DNE							High slope
852	DNE							High slope
853	DNE							High slope
854	DNE							High slope
855	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

856	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-60	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	Cobble layer
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
857	I	0-15	10YR 3/3	Dark Brown	loam		NCM	
	II	15-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
858	DNE							High slope
859	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	12-63	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	63-75	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
860	I	0-14	10YR 2/1	Black	silt loam		NCM	
	II	14-75	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	75-86	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
861	I	0-17	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	17-59	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	59-78	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
862	I	0-14	10YR 5/1	Gray	silt loam		NCM	
	II	14-52	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	52-64	10YR 6/6 & 10YR 6/3	Brownish Yellow & Pale Bro	sandy clay		NCM	BOE
863	I	0-14	10R 4/2	Weak Red	silt loam		NCM	
	II	14-50	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	50-65	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
864	I	0-13	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	13-59	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	59-69	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
865	I	0-19	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	19-55	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	55-68	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE
866	I	0-12	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	12-48	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	48-59	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	BOE

867	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	12-49	2.5Y 5/4	Light Olive Brown	sandy clay		NCM	
	III	49-60	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE
868	I	0-14	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	14-38	10YR 7/4	Very Pale Brown	sandy loam		2 flakes, 1 core	
	III	38-49	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
869	DNE							In road
870	I	0-15	10YR 4/3	Brown	silt loam		NCM	
	II	15-30	10YR 6/4	Light Yellowish Brown	sand	yes	NCM	
	III	3-50	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
871	I	0-17	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	17-30	10YR 6/4	Light Yellowish Brown	sand	yes	NCM	
	III	30-53	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	BOE
872	I	0-17	10YR 4/3	Brown	silt loam		NCM	
	II	17-32	10YR 7/4	Very Pale Brown	sand	yes	NCM	
	III	32-54	10YR 7/6	Yellow	sandy clay	yes	NCM	BOE
873	I	0-22	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	22-45	10YR 5/4	Yellowish Brown	loamy sand		NCM	
	III	45-70	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
874	I	0-12	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	12-30	10YR 5/4	Yellowish Brown	loamy sand		NCM	
	III	30-46	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	Hydric, bog iron deposits. BOE
875	I	0-15	10YR 5/1	Gray	silty clay loam		NCM	
	II	15-49	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	
	III	49-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE NCM
876	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	12-33	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	Wet
	III	33-44	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
877	DNE							High slope

878	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-60	10YR 7/3	Very Pale Brown	sand		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
879	I	0-23	10YR 4/3	Brown	sandy loam		NCM	
	II	23-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
880	I	0-16	10YR 3/3	Dark Brown	silt loam		NCM	
	II	16-55	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	55-70	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
881	I	0-13	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	13-70	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	70-84	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
882	I	0-16	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	16-50	10YR 6/3	Pale Brown	sandy clay	yes	NCM	
	III	50-60	10YR 6/3 & 10YR 5/6	Pale Brown & Yellowish Bro	sandy clay	yes	NCM	BOE
883	I	0-12	10YR 5/3	Brown	silt loam		NCM	
	II	12-44	10YR 7/4	Very Pale Brown	sandy clay		NCM	
	III	44-54	10YR 6/6 & 10YR 7/4	Brownish Yellow & Very Pal	sandy clay	yes	NCM	BOE
884	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		1 flake	
	II	10-54	10YR 5/4	Yellowish Brown	sandy clay		12 flakes	
	III	54-73	7.5YR 4/6 & 2.5YR 4/6	Strong Brown & Red	clay		2 flakes	BOE
885	I	0-12	10YR 3/3	Dark Brown	silt loam		NCM	
	II	12-41	10YR 6/4	Light Yellowish Brown	sandy clay		1 flake	
	III	41-55	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE
886	I	0-13	10YR 4/2	Dark Grayish Brown	silt loam		3 flakes	
	II	13-40	10YR 6/4	Light Yellowish Brown	sandy clay		5 flakes	
	III	40-57	7.5YR 4/6	Strong Brown	sandy clay		2 flakes	BOE
887	I	0-14	10YR 4/3	Brown	silt loam		1 flake	
	II	14-43	10YR 6/4	Light Yellowish Brown	sandy clay		1 flake	
	III	43-56	10YR 6/6	Brownish Yellow	clay	yes	NCM	BOE
888	DNE							In access road

889	DNE							High slope
890	DNE							High slope
891	DNE							High slope
892	I	0-10	10YR 5/1	Gray	silt loam		NCM	
	II	10-41	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	
	III	41-51	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	Pebble Gravel 10% BOE
893	I	0-11	10YR 4/1	Dark Gray	silt loam		NCM	
	II	11-40	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
894	I	0-12	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	12-43	10YR 7/4	Very Pale Brown	sandy clay loam		Lithic flake	
	III	43-53	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
895	DNE							High slope
896	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-45	10YR 7/3	Very Pale Brown	sand		NCM	
	III	45-65	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
897	I	0-61	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
898	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-51	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	51-61	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
899	I	0-8	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	8-47	10YR 7/4	Very Pale Brown	sandy loam		Quartz flake	
	III	47-57	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
900	I	0-9	10YR 5/1	Gray	silt loam		NCM	
	II	9-52	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	52-62	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
901	I	0-8	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	8-41	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	41-51	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE

902	I	0-10	10YR 5/1	Gray	silt loam		NCM	
	II	10-47	2.5Y 7/4	Pale Yellow	sandy loam		NCM	
	III	45-55	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
903	I	0-11	10YR 5/1	Gray	silty clay loam		NCM	
	II	11-45	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	Pebble gravel 15% BOE
904	I	0-12	10YR 5/1	Gray	silt loam		NCM	
	II	12-33	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	33-45	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	Pebble gravel 20%. BOE
905	I	0-8	10YR 5/1	Gray	silt loam		NCM	
	II	9-42	10YR 7/6	Yellow	sandy loam		Lithic flakes	
	III	42-52	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
906	DNE							In access road
907	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-35	10YR 7/3	Very Pale Brown	sand		NCM	
	III	35-45	7.5YR 6/8	Reddish Yellow	sandy clay		NCM	BOE
908	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10R 5/4	Weak Red	sandy clay loam		NCM	
	III	50-60	7.5YR 6/6	Reddish Yellow	sandy clay	yes	NCM	BOE
909	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-55	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	55-65	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
910	I	0-5	10YR 3/3	Dark Brown	sandy loam		2 flakes	
	II	5-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
911	DNE							push piles & tree falls.
912	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-75	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	75-85	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
913	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-55	10YR 5/3	Brown	sandy clay loam		NCM	
	III	55-65	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE

914	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-60	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
915	I	0-12	10YR 5/1	Gray	silt loam		NCM	
	II	12-44	10YR 7/4	Very Pale Brown	sandy clay		NCM	Wet
	III	44-54	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
916	I	0-17	10YR 5/1	Gray	silt loam		NCM	
	II	17-38	10YR 7/4	Very Pale Brown	sandy clay loam		NCM	
	III	38-49	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
917	I	0-11	10YR 5/1	Gray	silt loam		NCM	
	II	11-45	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	Wet
	III	45-55	10YR 6/8	Brownish Yellow	sandy clay		NCM	Pebble gravel 10% BOE
918	DNE							High slope
919	I	0-43	10YR 6/4	Light Yellowish Brown	sand		NCM	
	II	43-53	7.5YR 6/6	Reddish Yellow	sandy clay		NCM	BOE
920	I	0-20	10YR 3/3	Dark Brown	sandy loam		1 flake @ 10-15cmbs	
	II	20-75	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	75-85	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
921	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-53	10YR 7/3	Very Pale Brown	sand		3 lithic flakes	
	III	53-63	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
922	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-65	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	65-75	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
923	I	0-12	10YR 5/1	Gray	silt loam		NCM	
	II	12-46	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	46-56	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
924	I	0-9	10YR 5/1	Gray	silty clay loam		NCM	
	II	9-28	10YR 7/4	Very Pale Brown	sandy loam		NCM	
	III	28-38	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

925	I	0-10	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	10-46	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	46-56	10YR 6/4	Light Yellowish Brown	sandy clay	yes	NCM	BOE
926	I	0-16	10YR 4/2	Dark Grayish Brown	silty clay loam		NCM	
	II	16-58	10YR 7/2	Light Gray	sandy clay loam		NCM	
	III	58-68	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
927	I	0-13	10YR 4/2	Dark Grayish Brown	silty clay loam		NCM	
	II	13-51	10YR 7/2	Light Gray	sandy clay loam		NCM	
	III	51-61	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	Pebble Gravel 10%. BOE
928	I	0-13	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	13-44	10YR 7/3	Very Pale Brown	sandy clay loam		NCM	
	III	44-54	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
929	I	0-12	10YR 5/1	Gray	silt loam		NCM	
	II	13-27	10YR 7/3	Very Pale Brown	sandy loam		Lithic flakes	
	III	27-37	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	10% pebble gravel. BOE
930	I	0-12	10YR 5/2	Grayish Brown	silt loam		NCM	
	II	12-41	10YR 7/2	Light Gray	sandy loam		NCM	
	III	41-51	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	10% pebble gravel. BOE
931	DNE							In access road
932	DNE							High slope
933	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-35	10YR 7/3	Very Pale Brown	sand		2 lithic flakes	
	III	35-45	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
934	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-35	10YR 7/3	Very Pale Brown	sandy clay		Charcoal	
	III	35-45	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
935	I	0-14	10YR 4/3	Brown	sandy loam		NCM	
	II	14-40	10YR 7/3	Very Pale Brown	sandy clay		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
936	I	0-25	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	15-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE

937	I	0-16	10YR 4/3	Brown	sandy loam		NCM	
	II	16-45	10YR 7/3	Very Pale Brown	sand		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
938	I	0-13	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	13-35	10YR 7/3	Very Pale Brown	sand		NCM	
	III	35-45	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
939	I	0-17	10YR 4/3	Brown	sandy loam		Flake, Point	
	II	17-37	10YR 7/3	Very Pale Brown	sand		NCM	
	III	37-47	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
940	I	0-17	10YR 4/3	Brown	sandy loam		NCM	
	II	17-47	10YR 7/3	Very Pale Brown	sand		NCM	
	III	47-57	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
941	I	0-165	10YR 4/3	Brown	sandy loam		NCM	
	II	15-55	10YR 7/3	Very Pale Brown	sand		NCM	
	III	55-65	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
942	I	0-20	10YR 4/3	Brown	sandy loam		NCM	
	II	20-40	10YR 7/3	Very Pale Brown	sand		NCM	TOE root impasse
943	DNE							High slope
944	DNE							High slope
945	I	0-13	10YR 5/1	Gray	silt loam		Flake	
	II	13-26	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	26-33	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	
946	I	0-17	10YR 5/1	Gray	silt loam		NCM	
	II	17-26	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	TOE Rock Impasse
947	I	0-17	10YR 5/1	Gray	silt loam		NCM	
	II	17-37	10YR 8/4	Very Pale Brown	sandy clay loam		NCM	
	III	37-50	10YR 8/6	Yellow	sandy clay	yes	NCM	BOE
948	DNE							High slope
949	DNE							High slope
950	DNE							High slope

951	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-43	10YR 7/3	Very Pale Brown	sand		NCM	
	III	43-53	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
952	I	0-15	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	15-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	7.5YR 5/3	Brown	sandy clay	yes	NCM	BOE
953	I	0-20	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	20-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
954	I	0-25	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	25-65	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	
	III	65-75	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
955	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-65	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	65-75	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
956	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
957	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-45	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	45-55	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
958	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-50	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	
	III	50-60	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
959	I	0-10	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	10-58	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	
	III	58-70	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
960	I	0-12	10R 3/3	Dusky Red	sandy loam		NCM	
	II	12-60	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	
	III	60-70	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
961	ONE							High slope

962	I	0-20	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	20-34	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	Disturbed.
	III	34-50	5YR 5/8	Yellowish Red	clay		NCM	Hydric. BOE
963	DNE							In access road
964	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	14-40	10YR 7/3	Very Pale Brown	sand		NCM	70% rounded pebbles
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	80% rounded pebbles, BOE
965	I	0-13	10YR 4/3	Brown	sandy loam		NCM	
	II	13-36	10YR 7/3	Very Pale Brown	sand		NCM	
	III	36-46	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
966	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
967	I	0-14	10YR 3/2	Very Dark Grayish Brown	sandy loam		NCM	
	II	14-54	10YR 7/3	Very Pale Brown	sand		NCM	
	III	54-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	TOE Rock Impasse
968	I	0-15	10YR 4/3	Brown	sandy loam		Biface	
	II	15-45	10YR 7/3	Very Pale Brown	sand		NCM	
	III	45-55	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
969	I	0-10	10YR 4/3	Brown	sandy loam		NCM	
	II	10-35	10YR 7/3	Very Pale Brown	sand		NCM	
	III	35-45	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
970	I	0-20	10YR 4/3	Brown	sandy loam		3 flakes	
	II	20-40	10YR 7/3	Very Pale Brown	sand		NCM	Hydric
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE Hydric
971	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-45	10YR 7/3	Very Pale Brown	sand		7 flakes	
	III	45-55	10YR 7/6	Yellow	sandy clay		NCM	BOE

972	I	0-13	10YR 4/3	Brown	silt loam		1 flake	
	II	13-57	10YR 7/3	Very Pale Brown	sandy loam		3 flakes	
	III	57-69	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
973	I	0-15	10YR 4/2	Dark Grayish Brown	silt loam		1 flakes	
	II	15-54	10YR 6/4	Light Yellowish Brown	sandy clay		23 flakes	
	III	54-75	10YR 5/6	Yellowish Brown	clay		1 flake	BOE
974	I	0-16	10YR 4/3	Brown	silt loam		NCM	
	II	16-48	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	48-70	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
975	I	0-18	10YR 4/3	Brown	silt loam		1 flake	
	II	18-52	10YR 7/4	Very Pale Brown	sandy clay		NCM	
	III	52-66	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
976	I	0-20	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	20-40	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	40-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
977	I	0-20	10YR 4/3	Brown	silt loam		NCM	
	II	20-36	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	36-60	10YR 7/8	Yellow	sandy clay		NCM	BOE
978	I	0-20	10YR 4/2	Dark Grayish Brown	sandy loam		NCM	
	II	20-45	10YR 6/4	Light Yellowish Brown	sand		Flakes; Core	
	III	45-60	10YR 5/6	Yellowish Brown	sandy clay		NCM	Hydric. BOE
979	I	0-20	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	20-42	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	42-56	10YR 6/4	Light Yellowish Brown	sandy clay		NCM	BOE
980	I	0-15	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	15-31	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	31-50	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
981	I	0-24	10YR 4/3	Brown	silt loam		NCM	
	II	24-36	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	36-58	10YR 7/8	Yellow	sandy clay	yes	NCM	BOE
982	I	0-19	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	19-35	10YR 6/4	Light Yellowish Brown	sand		NCM	
	III	35-56	10YR 7/8	Yellow	sandy clay	yes	NCM	BOE

983	I	0-20	10YR 4/3	Brown	silt loam		Flake	
	II	20-40	10YR 7/4	Very Pale Brown	sand		NCM	
	III	40-62	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
984	I	0-23	10YR 4/3	Brown	sandy loam		NCM	
	II	23-43	10YR 7/3	Very Pale Brown	sand		Lithic flake	
	III	43-53	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
985	DNE							In access road
986	I	0-22	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	22-47	10YR 5/6	Yellowish Brown	sandy clay loam		NCM	
	III	47-63	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
987	I	0-20	10YR 2/2	Very Dark Brown	sandy loam		NCM	
	II	22-44	10YR 5/6	Yellowish Brown	loamy sand		NCM	
	III	44-56	10YR 5/8	Yellowish Brown	sandy clay		NCM	BOE
988	DNE							High slope
989	DNE							High slope
990	DNE							High slope
J1	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-27	10YR 5/4	Yellowish Brown	sand		NCM	
	III	27-48	10YR 7/4	Very Pale Brown	sand		NCM	
	IV	48-66	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
J2	I	0-14	10YR 4/4	Dark Yellowish Brown	silt loam		NCM	
	II	14-59	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	III	59-70	7.5YR 5/8	Strong Brown	sandy clay		NCM	Coarse, BOE
J3	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		Clear glass	
	II	10-28	10YR 6/4	Light Yellowish Brown	sandy clay		Stonewear, clear glass, aqua glass	
	III	28-42	7.5YR 5/8	Strong Brown	sandy clay	yes	NCM	BOE
J4	I	0-13	10YR 5/3	Brown	silt loam		Amber glass	
	II	13-30	10YR 7/4	Very Pale Brown	sand		Clear glass, amber glass, nail	
	III	30-40	7.5YR 5/8	Strong Brown	sandy clay	yes	NCM	BOE

J5	I	0-16	10YR 4/3	Brown	silt loam		Glass, metal fragment, ww, amber glass	
	II	16-34	10YR 6/4	Light Yellowish Brown	sand		Nails, brick, clear glass, asphalt	Asphalt in wall at 16cm
	III	34-44	7.5YR 5/8	Strong Brown	sandy clay	yes	NCM	BOE
J6	I	0-16	10YR 5/3	Brown	silt loam		NCM	
	II	16-50	10YR 7/4	Very Pale Brown	sand		NCM	
	III	50-60	7.5YR 5/8	Strong Brown	sandy clay		NCM	BOE
J7	I	0-20	10YR 4/3	Brown	silt loam		Stonewear, clear glass, asphalt	
	II	20-46	10YR 7/3	Very Pale Brown	sand		NCM	
	III	46-56	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
J8	I	0-16	10YR 4/4	Dark Yellowish Brown	sandy loam		NCM	
	II	16-30	10YR 7/4	Very Pale Brown	loamy sand		NCM	
	III	30-48	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
J9	I	0-16	10YR 5/3	Brown	sandy loam		Glass	
	II	16-38	10YR 7/4	Very Pale Brown	loamy sand		NCM	
	III	38-53	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
J10	I	0-22	10YR 4/3	Brown	silt loam		clear glass, brick, nail, stone wear, aqua glass	
	II	22-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/8	Brownish Yellow	sandy clay	yes	NCM	BOE
J11	I	0-27	10YR 4/3	Brown	silt loam		Ww, clear glass	
	II	27-43	10YR 7/3	Very Pale Brown	sand		NCM	
	III	43-53	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE

J12	I	0-30	10YR 6/4	Light Yellowish Brown	sandy loam		NCM	
	II	30-38	10YR 8/4	Very Pale Brown	sand	yes	NCM	
	III	38-50	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	BOE
J13	I	0-33	10YR 4/3	Brown	silt loam		Glass asphalt ceramic brick metal	
	II	33-40	10YR 7/4	Very Pale Brown	sand	yes	Ceramic	
	III	40-50	10YR 7/6	Yellow	sandy clay	yes	NCM	BOE
J14	I	0-19	10YR 4/3	Brown	silt loam		Clear glass, amber glass (disc)	
	II	19-55	10YR 7/3	Very Pale Brown	sand		Nail	
	III	55-65	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
J15	I	0-30	10YR 4/3	Brown	silt loam		Clear glass, ww	
	II	30-45	10YR 7/8	Yellow	sandy clay	yes	NCM	BOE
J16	I	0-30	10YR 3/3	Dark Brown	sandy loam		Glass, brick	
	II	30-43	10YR 6/4	Light Yellowish Brown	loamy sand		NCM	
	III	43-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	Hydric TOE
J17	I	0-25	10YR 5/3	Brown	sandy loam		Glass, Brick, Asphalt, Metal, Ceramic	
	II	25-40	10YR 7/3	Very Pale Brown	sandy clay	yes	NCM	BOE

J18	I	0-29	10YR 3/3	Dark Brown	silt loam		White Ceramic, white/brown ceramic	
	II	29-48	10YR 7/3	Very Pale Brown	sand		Clear glass	
	III	48-63	10YR 5/8	Yellowish Brown	sandy clay	yes	NCM	BOE
J19	I	0-26	10YR 4/3	Brown	silt loam		Nail, ceramic, clear glass, milk glass	
	II	26-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-55	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
J20	I	0-33	10YR 5/4	Yellowish Brown	sandy loam		Glass ceramic metal brick asphalt	
	II	33-50	10YR 7/4	Very Pale Brown	sandy clay	yes	Asphalt	BOE
J21	I	0-33	10YR 4/3	Brown	silt loam		Clear glass, salt glaze stone wear	
	II	33-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
J22	I	0-29	10YR 4/4	Dark Yellowish Brown	sandy loam		Asphalt glass	
	II	29-50	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	BOE
J23	I	0-30	10YR 4/3	Brown	silt loam		Clear glass, cobalt glass	
	II	30-56	10YR 7/3	Very Pale Brown	sand		NCM	
	III	56-66	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
J24	I	0-28	10YR 3/3	Dark Brown	sandy loam		Glass, WW	
	II	28-38	10YR 6/4	Light Yellowish Brown	loamy sand		NCM	
	III	38-52	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE

J25	I	0-30	10YR 4/3	Brown	silt loam		Nail, clear glass	
	II	30-46	10YR 7/3	Very Pale Brown	sand	yes	NCM	
	III	46-56	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
J26	I	0-27	10YR 4/3	Brown	silt loam		Glass brick asphalt ceramic	
	II	27-50	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	BOE
J27	I	0-30	10YR 4/2	Dark Grayish Brown	silt loam		Nail	
	II	30-40	10YR 7/4	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
J28	I	0-29	10YR 5/4	Yellowish Brown	sandy loam		NCM	
	II	29-50	10YR 7/4	Very Pale Brown	sand	yes	Ceramic	BOE
J29	I	0-23	10YR 4/3	Brown	sandy loam		Glass	
	II	23-55	10YR 7/4	Very Pale Brown	sand		NCM	
	III	55-67	10YR 4/6	Dark Yellowish Brown	sandy clay		NCM	BOE
J30	I	0-25	10YR 5/3	Brown	sandy loam		NCM	
	II	25-50	10YR 7/4	Very Pale Brown	sandy clay	yes	NCM	BOE
J31	I	0-20	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	20-35	10YR 7/4	Very Pale Brown	loamy sand		NCM	
	III	35-53	10YR 5/6	Yellowish Brown	sandy clay		NCM	BOE
J32	I	0-28	10YR 4/3	Brown	silt loam		Clear glass	
	II	28-46	10YR 7/3	Very Pale Brown	sand		NCM	
	III	46-56	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
J34	I	0-34	10YR 4/3	Brown	silt loam		NCM	
	II	34-47	10YR 7/3	Very Pale Brown	sand		NCM	
	III	47-57	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
J35	I	0-30	10YR 4/3	Brown	silt loam		NCM	
	II	30-40	10YR 7/3	Very Pale Brown	sand	yes	NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
J36	I	0-28	10YR 4/3	Brown	silt loam		NCM	
	II	28-49	10YR 7/3	Very Pale Brown	sand		NCM	Mottling
	III	49-60	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE

J37	I	0-25	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	25-34	10YR 7/4	Very Pale Brown	loamy sand		NCM	
	III	34-51	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
J38	I	0-13	10R 4/3	Weak Red	silt loam		NCM	
	II	13-33	10YR 5/3	Brown	sand	yes	NCM	
	III	33-50	10YR 5/6	Yellowish Brown	sandy clay	yes	NCM	BOE
J39	I	0-28	10YR 5/4	Yellowish Brown	silt loam		NCM	
	II	28-50	10YR 6/3	Pale Brown	silty clay	yes	NCM	BOE
J40	I	0-25	10YR 4/3	Brown	sandy loam		NCM	
	II	25-48	10YR 7/4	Very Pale Brown	sand	yes	NCM	
	III	48-58	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
J41	I	0-28	10YR 4/3	Brown	sandy loam		NCM	
	II	24-40	10YR 7/3	Very Pale Brown	sand	yes	NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
J42	I	0-13	10YR 3/3	Dark Brown	sandy loam		Ceramic, glass	
	II	13-38	10YR 7/4	Very Pale Brown	loamy sand		NCM	
	III	38-56	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE
J43	I	0-38	10YR 6/4	Light Yellowish Brown	sandy loam		Nail, cobalt glass, brick, clear glass	
	II	38-73	10YR 4/3	Brown	sand		NCM	
	III	73-100	10YR 8/4	Very Pale Brown	sandy clay		NCM	Hydric, BOE
J44	I	0-30	10YR 5/3	Brown	silt loam		NCM	
	II	30-43	5YR 6/8	Reddish Yellow	sandy clay	yes	NCM	BOE
J45	I	0-29	10YR 4/3	Brown	sandy loam		NCM	
	II	29-82	10YR 6/4	Light Yellowish Brown	sand		NCM	Hydric TOE
J46	I	0-13	10YR 5/3	Brown	sandy loam		NCM	
	II	13-44	10YR 7/4	Very Pale Brown	sand		NCM	
	III	44-62	10YR 6/3	Pale Brown	sand		NCM	
	IV	62-72	10YR 8/4	Very Pale Brown	sandy clay		NCM	Hydric, TOE
J47	I	0-20	10YR 3/3	Dark Brown	silt loam		Charcoal	
	II	20-40	10YR 6/3	Pale Brown	sand		NCM	
	III	40-60	10YR 6/8	Brownish Yellow	sandy clay		NCM	BOE

J48	I	0-10	10YR 4/2	Dark Grayish Brown	silt loam		NCM	
	II	10-53	10YR 7/3	Very Pale Brown	sandy clay		NCM	
	III	53-65	10YR 5/6 & 10YR 7/2	Yellowish Brown & Light Gray	sandy clay		NCM	BOE
J49	I	0-12	10YR 4/3	Brown	sandy loam		NCM	
	II	12-40	10YR 7/3	Very Pale Brown	sand		NCM	
	III	40-50	10YR 6/6	Brownish Yellow	sandy clay	yes	NCM	BOE
J50	I	0-13	10YR 5/1	Gray	silt loam		NCM	
	II	13-39	10YR 7/3	Very Pale Brown	sandy loam		NCM	
	III	39-50	10YR 6/6	Brownish Yellow	sandy clay loam	yes	NCM	BOE
J51	I	0-15	10YR 3/3	Dark Brown	sandy loam		NCM	
	II	15-50	10YR 5/4	Yellowish Brown	sandy clay loam		NCM	60-75% gravel
	III	50-60	7.5YR 4/6	Strong Brown	sandy clay	yes	NCM	BOE
J52	I	0-22	10YR 2/2	Very Dark Brown	silt loam		NCM	
	II	22-53	10YR 7/4	Very Pale Brown	sand		NCM	
	III	53-66	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
J53	I	0-15	10YR 4/3	Brown	sandy loam		NCM	
	II	15-50	10YR 7/3	Very Pale Brown	sand		NCM	
	III	50-60	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE
J54	I	0-18	10YR 4/4	Dark Yellowish Brown	sandy loam		NCM	
	II	18-40	2.5Y 6/4	Light Yellowish Brown	sandy clay		NCM	
	III	40-54	10YR 6/6	Brownish Yellow	sandy clay		NCM	BOE

APPENDIX C:
Artifact Catalog

Shovel Test	Depth (cm bgs)	Level	Count	Period	Group	Artifact Material	Artifact Class	Artifact Type	Type	Description	Comments / Measurements
21	12-38	II	1	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Handle	Fragment	2.5 cm long, 7 mm wide
134	16-29	II	1	Undiagnostic	Domestic	Iron	Slag	N/A	Undiagnostic	Fragment	5 cm diameter
542	33-69	III	5	Precontact	Processing/Extraction	Quartz	Debitage	Flake	Tertiary	Undiagnostic	<1 cm diameter
	69	IV	1	Precontact	Processing/Extraction	Quartzite	Tool	Ground-Stone	Grinding Slab	Undiagnostic	Grinding slab or other netherstone. Shallow cupule in center with pitting around. Found at III/IV transition. 18 cm by 11 cm cobble
544	12-62	I	1	Precontact	Processing/Extraction	Quartzite	Biface	Projectile Point	Guilford Round Base	Nottoway Quartzite	Resharpened. 6.5 cm long, 2 cm wide at shoulder
544-7.5-N	13-50	II	1	Precontact	Processing/Extraction	Quartzite	Biface	Projectile Point	Guilford Round Base	Nottoway Quartzite	5 cm long, 2.5 cm wide at shoulder
544-7.5-W	15-44	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	2 by 1 cm
584	0-20	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	4 cm by 2 cm
			3	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1-4 cm diameter
	20-57	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Nottoway Quartzite	1 cm diameter
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 cm diameter
585	0-12	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	Potentially worked. 2.5 cm diameter
591	12-60	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	3 cm by 2 cm
598	12-65	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	3 cm diameter
632	18-49	II	5	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	1-4 cm diameter
639	0-15	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	3 by 1.5 cm
678	0-11	I	4	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	1-2 cm diameter
	11-59	II	2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	2 cm diameter
			2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Nottoway Quartzite	1-2 cm diameter
	59-79	III	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	4 by 2 cm
679	13-50	II	1	Precontact	Subsistence/Agriculture	Quartz	Thermally Altered	FCR	Fragment	Undiagnostic	FCR. 5 cm diameter
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	4 by 3 cm w/ cortex
			2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Nottoway Quartzite	2 cm diameter
			1	Precontact	Processing/Extraction	Quartz	Debitage	Flake	Tertiary	Vein Quartz	1 cm diameter
			6	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1-3 cm diameter
680	0-15	I	2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1-2 cm diameter
	15-53	II	1	Precontact	Processing/Extraction	Chert	Debitage	Flake	Secondary	Undiagnostic	1.5 cm diameter
			2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Nottoway Quartzite	1.5-3 cm diameter
			8	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1-4 cm diameter
	53-73	III	2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 cm diameter
682	16-65	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 cm diameter
686	16-71	II	4	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1.5-2.5 cm diameter
			1	Precontact	Processing/Extraction	Quartz	Debitage	Flake	Secondary	Vein Quartz	3 by 2 cm
687	21-48	II	1	Precontact	Processing/Extraction	Quartz	Debitage	Flake	Tertiary	Vein Quartz	5 by 3 cm
706	13-34	II	1	Precontact	Processing/Extraction	Quartzite	Biface	Projectile Point	Kirk Corner Notched	Nottoway Quartzite	44mm length, 21mm shoulder, 13mm base
800	15-33	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Primary	Undiagnostic	3 by 2 cm
			2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	3-4 cm in length
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Nottoway Quartzite	Broken. 5 by 3 cm
801	19-41	II	1	Undiagnostic	Organic	Wood	Charcoal	N/A	N/A	Sample	Charcoal sample
802	15-46	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	4 cm by 3 cm
803	18-51	II	2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	2-3 cm diameter
811	12-30	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Nottoway Quartzite	4 cm by 2 cm

Shovel Test	Depth (cm bgs)	Level	Count	Period	Group	Artifact Material	Artifact Class	Artifact Type	Type	Description	Comments / Measurements
823	0-16	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	Coarse grain, poor material. 2 cm by 2.5 cm
838	0-15	I	3	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Primary	Undiagnostic	2-4 cm diameter
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Nottoway Quartzite	4 cm diameter
			3	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	3-4 cm diameter
			8	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 cm to 5 cm diameter
839	11-52	II	1	Precontact	Subsistence/Agriculture	Quartz	Thermally Altered	FCR	Fragment	Undiagnostic	8 cm long, 5.5 cm wide, 4 cm thick
840	0-12	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 by 0.5 cm
	12-45	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Primary	Undiagnostic	4 cm diameter
842	12-30	II	1	Precontact	Processing/Extraction	Quartzite	Biface	Preform	Undiagnostic	Undiagnostic	Lateral snap. 4 cm by 4 cm triangular
844	12-58	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Nottoway Quartzite	3 cm by 2 cm
868	14-38	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Nottoway Quartzite	6.5 by 4.5 cm, 1.5 cm thick
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 cm diameter
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Core	Discard	Nottoway Quartzite	5 cm diameter, 3 cm thick
884	0-10	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	2.5 by 2 cm
	10-54	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Primary	Undiagnostic	3 by 2 cm
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	2 by 1.5 cm
			2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Nottoway Quartzite	2-3.5 cm diameter
			2	Precontact	Processing/Extraction	Quartz	Debitage	Flake	Tertiary	Vein Quartz	2-4 cm diameter
			6	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	0.5-3 cm diameter
	54-73	III	2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 cm diameter
885	12-41	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	2 by 1 cm
886	0-13	I	3	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	0.5-4 cm diameter
	13-40	II	5	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	2-3 cm diameter
	40-57	III	2	Precontact	Processing/Extraction	Quartz	Debitage	Flake	Tertiary	Vein Quartz	1-2 cm diameter
887	0-14	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	2.5 by 1 cm
	14-43	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	3 by 4 cm
894	12-43	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	2 by 2 cm
899	8-47	II	1	Precontact	Processing/Extraction	Quartz	Debitage	Flake	Tertiary	Vein Quartz	1 cm diameter
905	9-42	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Nottoway Quartzite	2 cm diameter
			4	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 cm diameter
910	0-5	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	2 cm diameter
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Shatter	N/A	Nottoway Quartzite	2 by 2 cm
920	0-15	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	2 cm diameter
921	15-53	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	1.5 cm diameter
			2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 cm by 0.5 cm
929	13-27	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	3 cm diameter
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Shatter	N/A	Nottoway Quartzite	2.5 by 2 cm
933	15-35	II	2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1-2 cm diameter
934	17-35	II	1	Undiagnostic	Organic	Wood	Charcoal	N/A	N/A	Sample	Charcoal sample
939	0-17	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Nottoway Quartzite	1 cm by 2 cm
			1	Late Woodland	Processing/Extraction	Quartz	Biface	Projectile Point	Clarksville	Vein Quartz	Fractured corner. 2.5 cm by 1.5 cm
945	0-13	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Primary	Undiagnostic	6 cm by 4 cm. Cortex on reverse.
968	0-15	I	1	Precontact	Processing/Extraction	Quartzite	Biface	Preform	Undiagnostic	Nottoway Quartzite	Fragment. 5 cm long 2.5 cm wide. Transverse Snap.

Shovel Test	Depth (cm bgs)	Level	Count	Period	Group	Artifact Material	Artifact Class	Artifact Type	Type	Description	Comments / Measurements
970	0-20	I	2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	3 cm diameter
			1	Precontact	Processing/Extraction	Rhyolite	Debitage	Flake	Tertiary	Undiagnostic	2 cm diameter
971	15-45	II	2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Primary	Undiagnostic	Primary cobble reduction. 3-4 cm diameter
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	2 cm by 2cm
			3	Precontact	Processing/Extraction	Rhyolite	Debitage	Flake	Tertiary	Undiagnostic	2-3 cm diameter
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Shatter	N/A	Undiagnostic	2 cm diameter
972	0-13	I	1	Precontact	Processing/Extraction	Quartz	Debitage	Flake	Tertiary	Vein Quartz	2 cm by 2cm
	13-57	II	1	Precontact	Processing/Extraction	Quartz	Debitage	Shatter	N/A	Vein Quartz	3 cm long, 1 cm wide
			1	Precontact	Processing/Extraction	Quartz	Debitage	Flake	Tertiary	Vein Quartz	1 cm diameter
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1.5 by 1 cm
973	0-15	I	3	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 by 0.5 cm
	15-54	II	2	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Nottoway Quartzite	0.5 to 1 cm diameter
			3	Precontact	Processing/Extraction	Quartz	Debitage	Flake	Tertiary	Vein Quartz	<1 cm diameter
			12	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1-2 cm diameter
			4	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Nottoway Quartzite	1-2 cm diameter
	54-75	III	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 cm diameter
975	0-18	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	1 by 0.5 cm
978	20-45	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Core	Discard	Nottoway Quartzite	5 cm diameter, 2 cm thick. Multi directional.
			2	Precontact	Processing/Extraction	Rhyolite	Debitage	Flake	Tertiary	Undiagnostic	2-4 cm diameter
			1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	3 cm by 2 cm
			17	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Tertiary	Undiagnostic	0.5 cm - 3 cm diameter
			1	Undiagnostic	Organic	Wood	Charcoal	N/A	N/A	Sample	<1 cm diameter
983	0-20	I	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Secondary	Undiagnostic	3 by 2 cm
984	23-43	II	1	Precontact	Processing/Extraction	Quartzite	Debitage	Flake	Primary	Nottoway Quartzite	4 cm diameter
J3	0-10	I	1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	1 cm diameter
	10-28	II	1	1900-1920	Kitchen	Glass	Container	Aqua	Machine-Made	Shard	1 cm diameter
			1	Recent	Kitchen	Glass	Container	Amber	Beer Bottle	Shard	1 cm diameter
			1	1860-1920	Kitchen	Ceramic	Stoneware	Alkaline Glaze	Interior Slip	Sherd	2 cm by 1 cm triangular
J4	0-13	I	1	Recent	Kitchen	Glass	Container	Amber	Beer Bottle	Shard	1 cm diameter
	13-30	II	1	Recent	Kitchen	Glass	Container	Amber	Beer Bottle	Shard	0.5 cm diameter
			2	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shards	1-3 cm diameter
			1	Historic	Architecture	Iron	Hardware	Nail	Undiagnostic	Oxidized	1 cm long
J5	0-16	I	1	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Undiagnostic	Flatware	2 cm by 1 cm
			1	Recent	Kitchen	Glass	Container	Amber	Beer Bottle	Shard	1.5 cm by 0.5 cm
			1	1880-1920	Kitchen	Glass	Container	Sun-Colored Amethyst	Undiagnostic	Shard	2 cm diameter
			3	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shards	1-2 cm diameter
			1	Historic	Domestic	Iron	Slag	N/A	Undiagnostic	Oxidized	Triangular, 4.5 x 6 cm
	16-34	II	5	Historic	Architecture	Iron	Hardware	Nail	Undiagnostic	Oxidized	Up to 2 cm long
			1	Historic	Architecture	Ceramic	Earthenware	Brick	Undiagnostic	Fragment	5 cm diameter
			1	Recent	Architecture	Bitumin	Asphalt	N/A	N/A	Chunk	Discarded.
			4	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shards	1-2 cm diameter
J7	0-20	I	2	Recent	Architecture	Bitumin	Asphalt	N/A	N/A	Chunk	Discarded.
			1	Historic	Architecture	Iron	Hardware	Flat	Undiagnostic	Oxidized	4 cm by 2.5 cm, 5 mm thick
			3	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shards	1-1.5 cm diameter
			1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	4 cm by 1 cm
			1	1860-1920	Kitchen	Ceramic	Stoneware	Salt-Glazed	Interior Slip	Sherd	4 cm by 2 cm, 5 mm thick

Shovel Test	Depth (cm bgs)	Level	Count	Period	Group	Artifact Material	Artifact Class	Artifact Type	Type	Description	Comments / Measurements
J9	0-16	I	1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	4 cm by 2 cm
J10	0-22	I	1	Historic	Architecture	Ceramic	Earthenware	Brick	Undiagnostic	Fragment	3 cm diameter, 1.5 cm thick, dark color on exterior
			1	1900s-Present	Architecture	Iron	Hardware	Nail	Wire	Oxidized	6 cm long, 1 cm diameter head
			6	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shards	1-2 cm diameter
			2	1900-1920	Kitchen	Glass	Container	Aqua	Machine-Made	Shards	1-2 cm diameter
			6	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shards	1-4 cm diameter
			1	1880-1920	Kitchen	Ceramic	Stoneware	Albany Slip	Interior Slip	Rim Sherd	4 cm diameter, pronounced lip
J11	0-27	I	1	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shard	1 cm diameter
			1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	1 cm diameter
			1	1815-1830	Kitchen	Ceramic	Earthenware	Pearlware	Painted	Cobalt-Blue	Cobalt-blue painted rim, 2.5 cm x 2 cm
J13	0-33	I	1	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Undiagnostic	Flatware	1 cm diameter
			1	Historic	Architecture	Ceramic	Earthenware	Brick	Undiagnostic	Fragment	1 cm diameter
			1	Historic	Architecture	Iron	Hardware	Nail	Undiagnostic	Oxidized	4 cm long
			3	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shard	1 cm diameter
			3	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	1-2 cm diameter
	33-40	II	1	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Undiagnostic	Undiagnostic	0.5 by 1 cm, paste fragment
J14	0-19	I	1	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shard	2 cm by 1.5 cm, 3 mm thick
	19-55	II	1	Historic	Architecture	Iron	Hardware	Nail	Undiagnostic	Oxidized	2 cm long, 1 cm diameter head
J15	0-30	I	3	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shards	1-4 cm diameter
			1	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Undiagnostic	Plate Base Sherd	2 cm by 1 cm
			1	Recent	Kitchen	Glass	Container	Colorless	Soda	Shards	2 cm by 1.5 cm
J16	0-30	I	1	Historic	Architecture	Ceramic	Earthenware	Brick	Undiagnostic	Fragment	1 cm diameter
			2	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shard	1-4 cm diameter
J17	0-25	I	1	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shard	4 cm by 0.5 cm
			1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	1 cm diameter
			1	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Plate	Rim Sherd	4 cm by 4 cm triangular
			2	Historic	Architecture	Iron	Hardware	Nail	Undiagnostic	Oxidized	1-2 cm long
			1	1829-1859	Kitchen	Ceramic	Earthenware	Pearlware	Printed	Green	1 cm diameter rim sherd
J18	0-29	I	1	1900-1920	Kitchen	Ceramic	Stoneware	Bristol Glaze	Jug Handle	Fragment	4 cm by 4 cm, 1 cm thick
			1	1900-1920	Kitchen	Ceramic	Stoneware	Bristol Glaze	Interior Slip	Rim Sherd	4 cm diameter. Grooved Interior.
	29-48	II	1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	1 cm diameter
J19	0-26	I	1	1870-1920	Domestic	Glass	Container	Milk	Undiagnostic	Shard	Embossed, thick-walled. 5 cm long, 3 cm wide, 1 cm thick
			4	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	1-4 cm diameter
			1	1860-1920	Kitchen	Ceramic	Stoneware	Buff Brown	Undiagnostic	Sherd	1 cm diameter paste sherd
			1	Historic	Architecture	Iron	Hardware	Nail	Undiagnostic	Oxidized	Nail head. Oxidized ball. 1 cm diameter
J20	0-33	I	1	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shard	1 cm by 0.5 cm
			2	1880-1920	Kitchen	Glass	Container	Sun-Colored Amethyst	Undiagnostic	Shard	2 cm by 1 cm
			3	Historic	Architecture	Ceramic	Earthenware	Brick	Undiagnostic	Fragment	Small chunks, <1cm diameter
			1	Pre-1900s	Architecture	Iron	Hardware	Nail	Cut	Oxidized	5 cm long, 1 cm head
J21	0-33	I	1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	1.5 cm diameter
			1	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shard	1 cm by 0.5 cm
			1	1860-1920	Kitchen	Ceramic	Stoneware	Salt-Glazed	No Inteiror Slip	Wheel Spun	2 cm diameter body sherd
J22	0-29	I	1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	2 cm by 1 cm

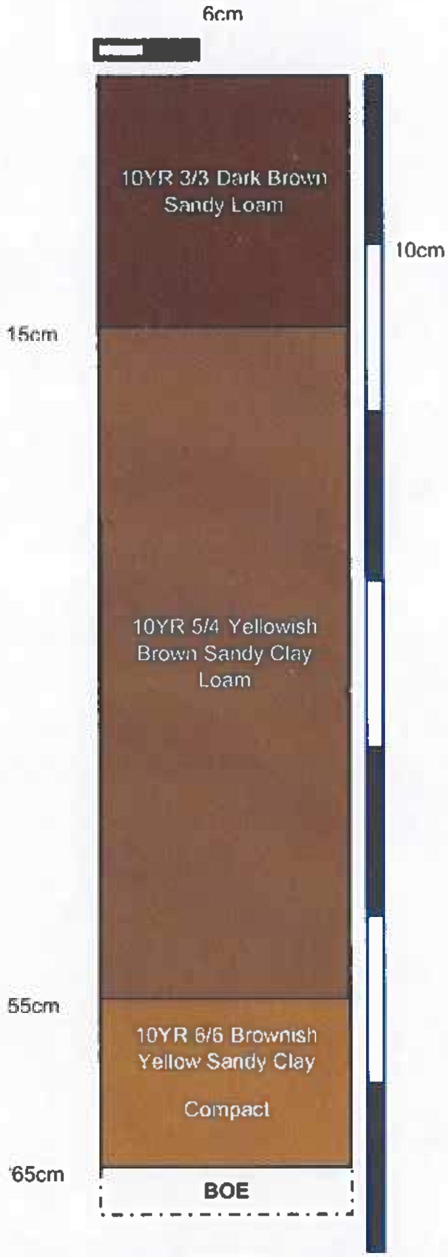
Shovel Test	Depth (cm bgs)	Level	Count	Period	Group	Artifact Material	Artifact Class	Artifact Type	Type	Description	Comments / Measurements
J23	0-30	I	1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	1 cm diameter
			1	Recent	Kitchen	Glass	Container	Colorless	Jar	Rim Sherd	2 cm by 4 cm
			1	1880-1920	Domestic	Glass	Container	Cobalt-Blue	Machine-Made	Shard	Embossed "7." 1 cm diameter.
J24	0-20	I	1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	2-3 cm diameter
			1	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Undiagnostic	Sherd	1.5 cm diameter
J25	0-30	I	1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	2 cm diameter
			1	Historic	Architecture	Iron	Hardware	Nail	Undiagnostic	Oxidized	4 cm long, no head
J26	0-27	I	1	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Undiagnostic	Sherd	1 by 1.5 cm
			2	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shard	1-4 cm diameter, one base frag
			2	1910s-Present	Kitchen	Glass	Container	Amber	Undiagnostic	Refit sherds	Older amber color, flatware base frag
			1	Historic	Architecture	Ceramic	Earthenware	Brick	Undiagnostic	Fragment	7 cm diameter
J27	0-30	I	1	1900s-Present	Architecture	Iron	Hardware	Nail	Wire	Oxidized	4 cm long 0.5 cm head
J28	29-50	II	1	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Undiagnostic	Sherd	1 cm by 0.5 cm
J29	0-23	I	1	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shard	1.5 cm diameter
J32	0-28	I	1	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shard	2 cm diameter
			1	1880-1920	Kitchen	Glass	Container	Sun-Colored Amethyst	Undiagnostic	Shard	2 cm diameter, mold blown
J42	0-13	I	1	Historic	Architecture	Iron	Hardware	Nail	Undiagnostic	Oxidized	1.5 cm long
			1	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Undiagnostic	Flatware	4 cm by 2 cm
			1	1880-1920	Kitchen	Glass	Container	Sun-Colored Amethyst	Undiagnostic	Shard	2 cm diameter
M3	0-38	I	1	Recent	Architecture	Glass	Flat	Window	Undiagnostic	Shard	4 cm diameter, 5 mm thick
			2	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shards	1 cm diameter
			1	Historic	Architecture	Iron	Hardware	Nail	Undiagnostic	Oxidized	Heavily oxidized. 5 cm long no head
			1	Historic	Architecture	Ceramic	Earthenware	Brick	Undiagnostic	Fragment	5 cm diameter
			1	1880-1920	Domestic	Glass	Container	Cobalt-Blue	Machine-Made	Shard	2 cm by 1 cm
M7	0-20	I	1	Undiagnostic	Organic	Wood	Charcoal	N/A	N/A	Sample	Sample from Level I
Transect 13	0	N/A	1	Historic	Architecture	Ceramic	Earthenware	Brick	Undiagnostic	Fragment	4 cm diameter
			2	1910-1920	Kitchen	Glass	Container	Aqua	Machine-Made	Shards	Full body seam, stippling. 2-4 cm diameter
			1	1880-1920	Domestic	Glass	Container	Cobalt-Blue	Machine-Made	Shard	Seam visible. 4 cm by 2 cm
			2	1830s to Present	Kitchen	Ceramic	Earthenware	Whiteware	Undiagnostic	Flatware	2 cm diameter each
Transect 14	0	N/A	1	Recent	Kitchen	Glass	Container	Colorless	Undiagnostic	Shards	1.5 cm by 1 cm
Transect 17	0	N/A	1	Precontact	Domestic	Sandstone	Tool	Ground-Stone	Spinning Tool	Fire-Drill Cap	4 cm thick, 7 cm wide 1 cm diameter cupule.
Near 151	0	N/A	2	1880-1915	Kitchen	Glass	Container	Sun-Colored Amethyst	Machine-Made	Tooled Finish	Two refit fragments of medicinal bottle. Rectangular cross-section, patent lip tooled finish, mold blown, no embossing

Shovel Test	Depth (cm bgs)	Level	Count	Period	Group	Artifact Material	Artifact Class	Artifact Type	Type	Description	Comments / Measurements
Bottle Dump A	0	N/A	1	1955-1960	Domestic	Glass	Container	Cobalt Blue	Machine-Made	Screw Top	Intact. Phillips Milk of Magnesia. Embossed, machine scar on base
			1	1946	Kitchen	Glass	Container	Amber	Machine-Made	Cork Top	Liquor Bottle "Federal Law" embossing. Owens-Illinois Glass Co. Logo on base, stippling. Date code "46."
			1	1935-1949	Kitchen	Glass	Container	Amber	Machine-Made	Screw Top	One-Gallon "carboy." Metro Glass Bottle Co.
Near 242	0	N/A	1	1890-1920	Kitchen	Ceramic	Stoneware	Bristol Glaze	Albany Slip	Jug	Nearly Intact. Sloping shoulders (albany slip) ending in flat tooled ledge (brostol white).

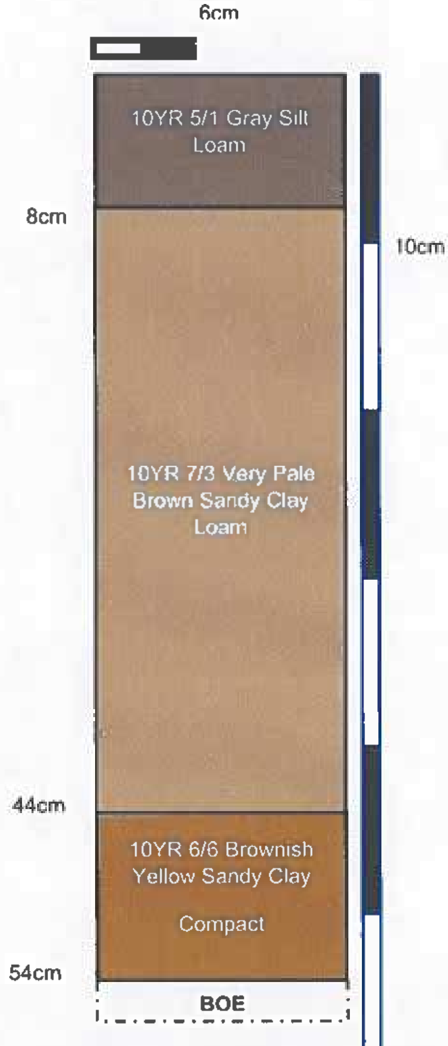
Total	361

APPENDIX D:
Representative Shovel Test Profiles

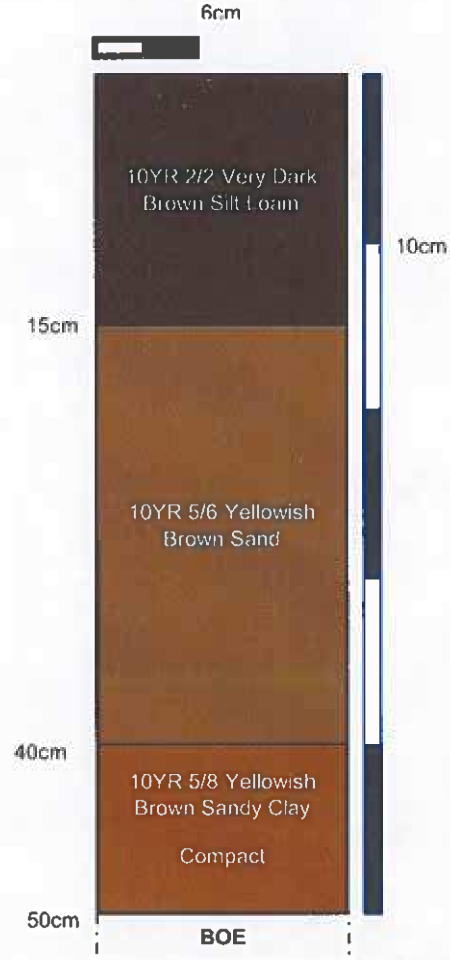

6cm
10YR 3/3 Dark Brown Sandy Loam
10cm
15cm
10YR 5/3 Brown Sandy Clay Loam
55cm
10YR 6/4 Light Yellowish Brown Sandy Clay
Compact
65cm
BOE
STP 18
6cm
10YR 3/2 Very Dark Grayish Brown Silt Loam
10cm
12cm
10YR 7/4 Very Pale Brown Sandy Loam
48cm
10YR 6/6 Brownish Yellow Sandy Clay Loam
58cm
BOE
STP 102
6cm
10YR 3/2 Very Dark Grayish Brown Silt Loam
10cm
14cm
10YR 7/4 Very Pale Brown Sandy Loam
43cm
10YR 6/6 Brownish Yellow Sand
Compact
53cm
BOE
STP 143



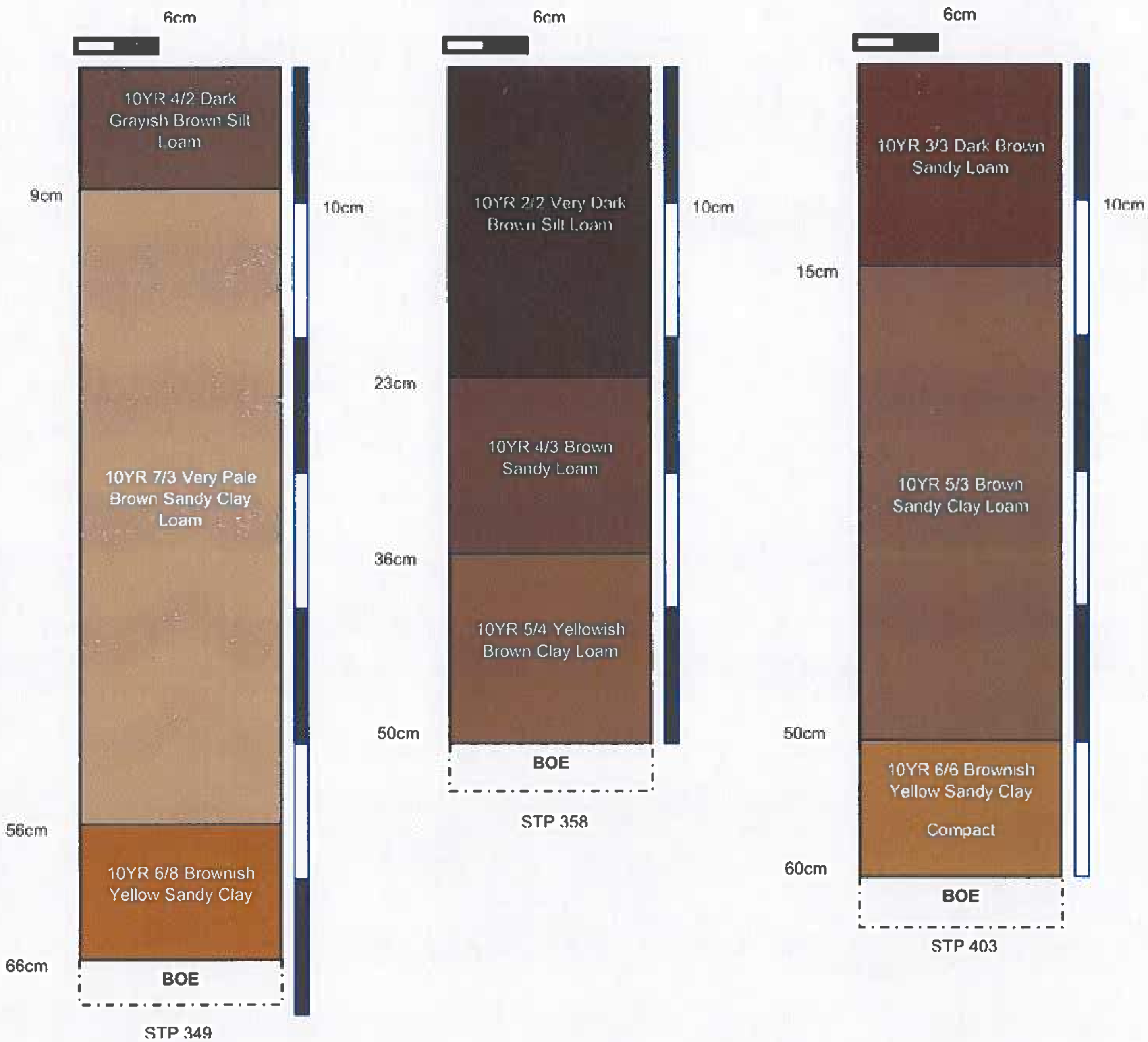
STP 174

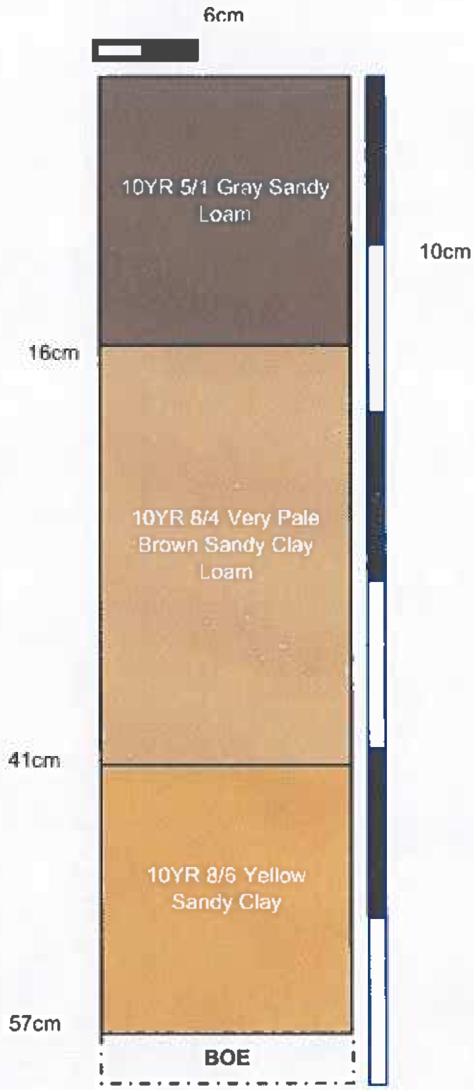


STP 212

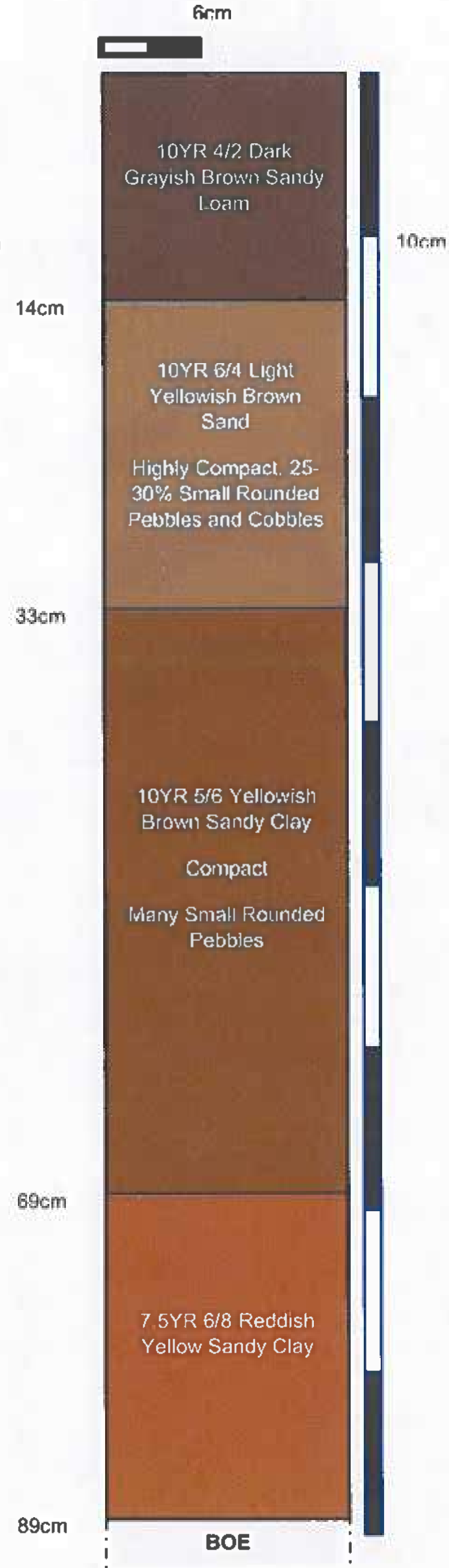


STP 251


6cm
10YR 4/2 Dark Grayish Brown Silt Loam
9cm
10cm
10YR 7/3 Very Pale Brown Sandy Clay Loam
56cm
10YR 6/8 Brownish Yellow Sandy Clay
66cm
BOE
STP 349
6cm
10YR 2/2 Very Dark Brown Silt Loam
10cm
23cm
10YR 4/3 Brown Sandy Loam
36cm
10YR 5/4 Yellowish Brown Clay Loam
50cm
BOE
STP 358
6cm
10YR 3/3 Dark Brown Sandy Loam
10cm
15cm
10YR 5/3 Brown Sandy Clay Loam
50cm
10YR 6/6 Brownish Yellow Sandy Clay
Compact
60cm
BOE
STP 403

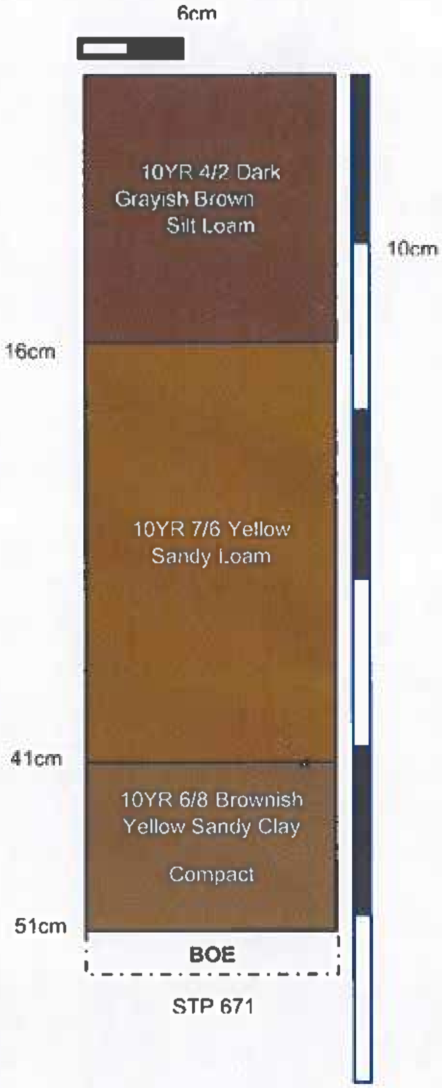


STP 467



STP 542

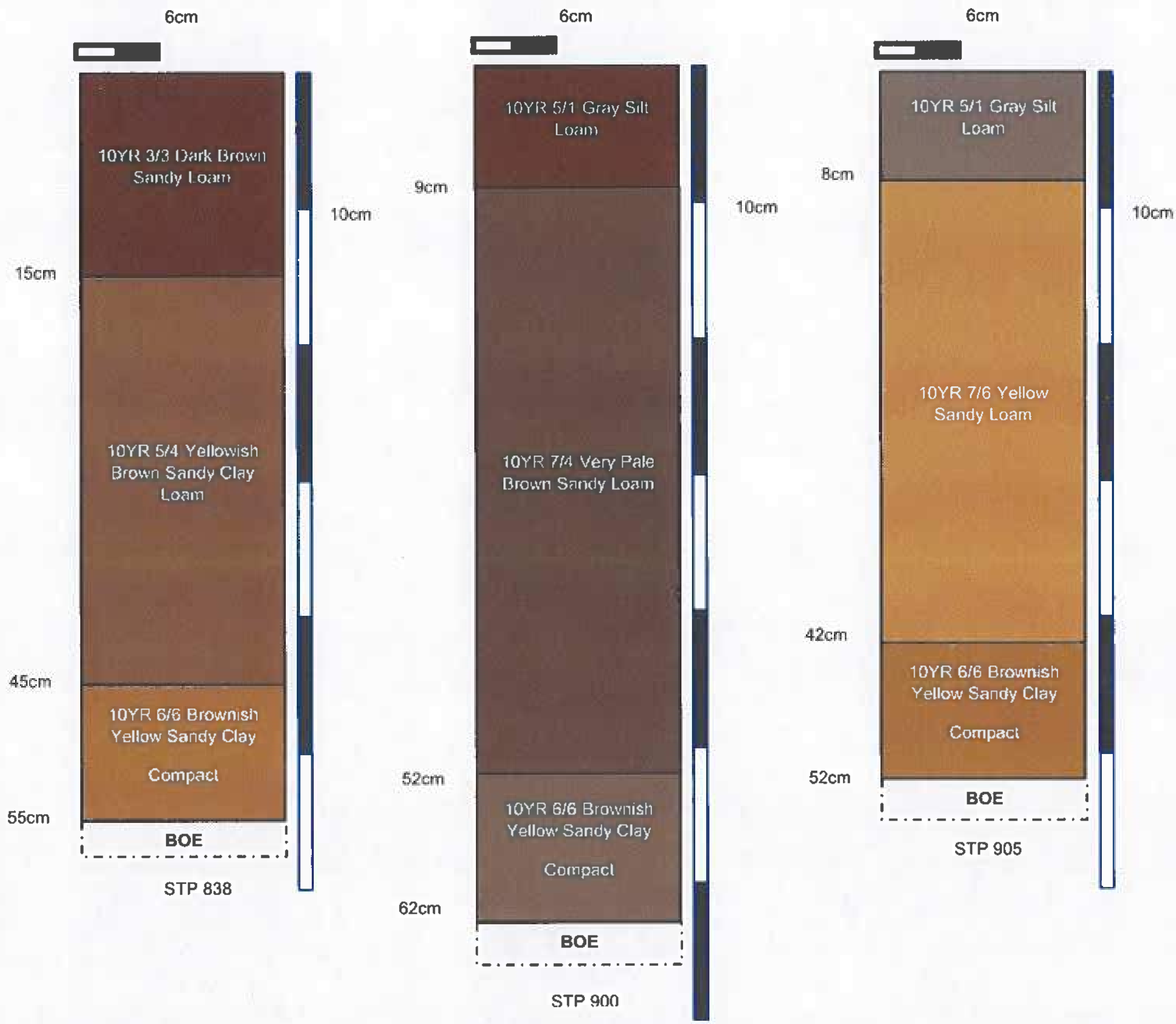
STP 544



STP 671

STP 706

STP 803


6cm
10YR 3/3 Dark Brown Sandy Loam
15cm
10cm
10YR 5/4 Yellowish Brown Sandy Clay Loam
45cm
10YR 6/6 Brownish Yellow Sandy Clay
Compact
55cm
BOE
STP 838
6cm
10YR 5/1 Gray Silt Loam
9cm
10cm
10YR 7/4 Very Pale Brown Sandy Loam
52cm
10YR 6/6 Brownish Yellow Sandy Clay
Compact
62cm
BOE
STP 900
6cm
10YR 5/1 Gray Silt Loam
8cm
10cm
10YR 7/6 Yellow Sandy Loam
42cm
10YR 6/6 Brownish Yellow Sandy Clay
Compact
52cm
BOE
STP 905


6cm
10YR 4/3 Brown Sandy Loam
10cm
15cm
10YR 7/3 Very Pale Brown Sand
45cm
10YR 6/6 Brownish Yellow Sandy Clay
55cm
BOE
STP 968
6cm
10YR 4/3 Brown Silt Loam
10cm
33cm
10YR 7/3 Very Pale Brown Sand
50cm
10YR 6/6 Brownish Yellow Sandy Clay
Compact
60cm
BOE
STP J21
6cm
10YR 2/2 Very Dark Brown Silt Loam
10cm
19cm
10YR 7/4 Very Pale Brown Sand
53cm
10YR 6/6 Brownish Yellow Sandy Clay
66cm
BOE
STP J52

APPENDIX E: Archaeological Site Forms

Snapshot

Date Generated: March 27, 2024

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	1861 - 1865, 1866 - 1916, 1917 - 1945, 1946 - 1991
Site Type(s):	Artifact scatter
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Locational Information

USGS Quad:	STONY CREEK
County/Independent City:	Sussex (County)
Physiographic Province:	Coastal Plain
Elevation:	140 feet
Aspect:	Flat
Drainage:	Albemarle-Chowan
Slope:	0-2%
Acreage:	2.970
Landform:	Ridge Finger
Ownership Status:	Private
Government Entity Name:	No Data

Site Components

Component 1

Category:	Domestic
Site Type:	Artifact scatter
Cultural Affiliation:	Euro-American
Cultural Affiliation Detail:	No Data
DHR Time Period:	Civil War (1861 - 1865), Reconstruction and Growth (1866 - 1916), World War I to World War II (1917 - 1945), The New Dominion (1946 - 1991)
Start Year:	1860
End Year:	1976
Comments:	No Data

Bibliographic Information

Bibliography:

2024. Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File, DHR.

United States Geological survey (USGS)
1919 Jarratt, Virginia quad map, 15-minute series
1921 Jarratt, Virginia quad map, 15-minute series
1943 Jarratt, Virginia quad map, 15-minute series
1950 Aerial Photo Single Frames
1951 Jarratt, Virginia quad map, 15-minute series
1968 Aerial Photo Single Frames
1973 Aerial Photo Single Frames
1976 Aerial Photo Single Frames

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Principle Investigator: Michael Navarro, RPA
Project Manager: Zachary J. Davis, RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Dewberry

Investigator: Michael Navarro

Survey Date: 2/19/2024

Survey Description:

Chaney Enterprises proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia. The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95. Dewberry Engineers Inc. is providing a Phase I archaeological survey of the proposed disturbance zones in accordance with a Sussex County Re-Zoning Application.

Current Land Use	Date of Use	Comments
Agricultural field	3/26/2024	No Data

Threats to Resource: Development

Site Conditions: Surface Deposits Present But With No Subsurface Integrity

Survey Strategies: Subsurface Testing, Surface Testing, Historic Map Projection

Specimens Collected: Yes

Specimens Observed, Not Collected: Yes

Artifacts Summary and Diagnostics:

A total of 140 historic to recent period artifacts belonging to Architectural, Kitchen, and Domestic functional groups. These included ceramic, iron, glass, and asphalt. 64% of artifacts are from the recent period, 36% from the historic period (pre-1974). Of historic artifacts, 17% date to a particular historic time period. The majority of these date to between 1860 and 1920, corresponding with a known residence at this location which appears on historic maps between 1919 and 1976. Artifacts collected during systematic surface survey and judgemental shovel tests spaced at 15-meter intervals. Artifacts generally appeared intermixed within the disturbed Ap-horizon (Level I). Two bottle/refuse dumps containing historic to recent vessels are included within the site.

Summary of Specimens Observed, Not Collected:

Recent refuse and glass vessels within two bottle dumps at eastern and southern extremes of site. Samples taken from bottle dumps in order to date deposits. Bottle dumps lack integrity and historic significance.

Current Curation Repository: Dewberry Engineers Inc., Raleigh NC

Permanent Curation Repository: Landowner

Field Notes: Yes

Field Notes Repository: Dewberry Engineers Inc., Raleigh NC

Photographic Media: Digital

Survey Reports: Yes

Survey Report Information:

Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR. 2024.

Survey Report Repository: DHR

DHR Library Reference Number: No Data

Significance Statement: Following demolition and removal of the structure between 1973 and 1976, historic aerial imagery shows the former house site was plowed and incorporated into the surrounding agricultural field. Plowing, harvesting, and replanting has continued at the site annually through the present. Given the significant level of disturbance observed within the Ap-horizon and mixture of recent and historic material throughout the Ap and E-horizons, the research potential of the site has been exhausted following Dewberry's Phase IB survey. This site is recommended not eligible for listing in the National Register at the Phase I level; no further archaeological work is recommended at the site.

Surveyor's Eligibility Recommendations: Recommended Not Eligible

Surveyor's NR Criteria Recommendations: No Data

Surveyor's NR Criteria Considerations: No Data

Snapshot

Date Generated: March 27, 2024

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	6500 - 3001 B.C.E
Site Type(s):	Lithic scatter
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Locational Information

USGS Quad:	STONY CREEK
County/Independent City:	Sussex (County)
Physiographic Province:	Coastal Plain
Elevation:	140 feet
Aspect:	Flat
Drainage:	Albemarle-Chowan
Slope:	0-2%
Acreage:	0.040
Landform:	Terrace
Ownership Status:	Private
Government Entity Name:	No Data

Site Components

Component 1

Category:	Industry/Processing/Extraction
Site Type:	Lithic scatter
Cultural Affiliation:	Native American
Cultural Affiliation Detail:	No Data
DHR Time Period:	Middle Archaic Period (6500 - 3001 B.C.E)
Start Year:	No Data
End Year:	No Data
Comments:	Site date based on two Guilford Round Base projectile points found in adjacent shovel tests.

Bibliographic Information

Bibliography:

2024. Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR.

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Principle Investigator: Michael Navarro, RPA
Project Manager: Zachary J. Davis, RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Dewberry

Investigator: Michael Navarro

Survey Date: 2/19/2024

Survey Description:

Chaney Enterprises proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia. The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95. Dewberry Engineers Inc. is providing a Phase I archaeological survey of the proposed disturbance zones in accordance with a Sussex County Re-Zoning Application.

Current Land Use	Date of Use	Comments
Forest	3/26/2024	Agricultural pine forest

Threats to Resource: Development

Site Conditions: Subsurface Integrity

Survey Strategies: Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

Two Guilford Round Base projectile points and one tertiary quartzite flake collected from the Ap-horizon and Bt1-horizon in three adjacent shovel tests spaced at 7.5-meter intervals. Both projectile points are composed of local Nottoway Quartzite.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Dewberry Engineers Inc., Raleigh NC

Permanent Curation Repository: Landowner

Field Notes: Yes

Field Notes Repository: Dewberry Engineers Inc., Raleigh, NC

Photographic Media: Digital

Survey Reports: Yes

Survey Report Information:

Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR, 2024.

Survey Report Repository: DHR

DHR Library Reference Number: No Data

Significance Statement: Given that the site contains two projectile points dating to the Middle Archaic Period (c. 6,200-5,000 BP) and one tertiary reduction flake located within intact soil profiles that correspond with the known soil pedon, there exists the potential for the site to yield new information about the Middle Archaic Period in Sussex County. Therefore, the site has potential significance and is unevaluated for inclusion in the National Register at the Phase I level.

Surveyor's Eligibility Recommendations: Recommended for Further Survey

Surveyor's NR Criteria Recommendations: No Data

Surveyor's NR Criteria Considerations: No Data

Snapshot

Date Generated: March 27, 2024

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	No Data
Site Type(s):	Lithic scatter
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Locational Information

USGS Quad:	STONY CREEK
County/Independent City:	Sussex (County)
Physiographic Province:	Coastal Plain
Elevation:	140 feet
Aspect:	Facing South
Drainage:	Albemarle-Chowan
Slope:	0-2%
Acreage:	0.010
Landform:	Terrace
Ownership Status:	Private
Government Entity Name:	No Data

Site Components

Component 1

Category:	Industry/Processing/Extraction
Site Type:	Lithic scatter
Cultural Affiliation:	Native American
Cultural Affiliation Detail:	No Data
DHR Time Period:	Pre-Contact
Start Year:	No Data
End Year:	No Data
Comments:	Grind stone and flake scatter; no temporally diagnostic artifacts recovered.

Bibliographic Information

Bibliography:

2024. Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR.

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Principle Investigator: Michael Navarro, RPA
Project Manager: Zachary J. Davis, RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Dewberry

Investigator: Michael Navarro

Survey Date: 2/19/2024

Survey Description:

Chaney Enterprises proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia. The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95. Dewberry Engineers Inc. is providing a Phase I archaeological survey of the proposed disturbance zones in accordance with a Sussex County Re-Zoning Application.

Current Land Use	Date of Use	Comments
Forest	3/26/2024	Agricultural pine forest

Threats to Resource: Development

Site Conditions: Subsurface Integrity

Survey Strategies: Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

Five quartz tertiary flakes and one quartzite grinding slab recovered from one shovel test at interface of Bt1 and Bt2-horizons. Radially positioned shovel tests at 7.5-meter intervals failed to recover additional cultural material. No temporally diagnostic material recovered.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Dewberry Engineers Inc., Raleigh NC

Permanent Curation Repository: Landowner

Field Notes: Yes

Field Notes Repository: Dewberry Engineers Inc., Raleigh, NC

Photographic Media: Digital

Survey Reports: Yes

Survey Report Information:

Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR. 2024.

Survey Report Repository: DHR

DHR Library Reference Number: No Data

Significance Statement: Given that greater than three artifacts were recovered from intact soil horizons within shovel test 542, Site 3 was established around the positive shovel test. There exists the potential for the Site 3 to yield new information about the pre-contact period in Sussex County. Therefore, Site 3 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level..

Surveyor's Eligibility Recommendations: Recommended for Further Survey

Surveyor's NR Criteria Recommendations: No Data

Surveyor's NR Criteria Considerations: No Data

Snapshot

Date Generated: March 27, 2024

Site Name: No Data
Site Classification: Terrestrial, open air
Year(s): No Data
Site Type(s): Lithic scatter
Other DHR ID: No Data
Temporary Designation: No Data

Site Evaluation Status

Locational Information

USGS Quad: STONY CREEK
County/Independent City: Sussex (County)
Physiographic Province: Coastal Plain
Elevation: 130 feet
Aspect: Facing South
Drainage: Albemarle-Chowan
Slope: 0-2%
Acreage: 0.100
Landform: Sideslope
Ownership Status: Private
Government Entity Name: No Data

Site Components

Component 1

Category: Industry/Processing/Extraction
Site Type: Lithic scatter
Cultural Affiliation: Native American
Cultural Affiliation Detail: No Data
DHR Time Period: Pre-Contact
Start Year: No Data
End Year: No Data
Comments: Lithic flake scatter; no temporally diagnostic artifacts recovered.

Bibliographic Information

Bibliography:

2024. Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR.

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Principle Investigator: Michael Navarro, RPA
Project Manager: Zachary J. Davis, RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Dewberry

Investigator: Michael Navarro

Survey Date: 2/19/2024

Survey Description:

Chaney Enterprises proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia. The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95. Dewberry Engineers Inc. is providing a Phase I archaeological survey of the proposed disturbance zones in accordance with a Sussex County Re-Zoning Application.

Current Land Use	Date of Use	Comments
Forest	3/26/2024	Agricultural pine forest

Threats to Resource: Development

Site Conditions: Subsurface Integrity

Survey Strategies: Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

Six quartzite tertiary flakes and one quartzite secondary flake recovered from the Ap-horizon and Bt1-horizon in two adjacent shovel tests. No temporally diagnostic material recovered.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Dewberry Engineers Inc., Raleigh NC

Permanent Curation Repository: Landowner

Field Notes: Yes

Field Notes Repository: Dewberry Engineers Inc., Raleigh, NC

Photographic Media: Digital

Survey Reports: Yes

Survey Report Information:

Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR. 2024.

Survey Report Repository: DHR

DHR Library Reference Number: No Data

Significance Statement: Given that greater than three artifacts were recovered from intact soil horizons within adjacent shovel tests 584 and 585, Site 4 was established around the positive shovel tests. There exists the potential for Site 4 to yield new information about the pre-contact period in Sussex County. Therefore, Site 4 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level.

Surveyor's Eligibility Recommendations: Recommended for Further Survey

Surveyor's NR Criteria Recommendations: No Data

Surveyor's NR Criteria Considerations: No Data

Snapshot

Date Generated: March 27, 2024

Site Name: No Data
Site Classification: Terrestrial, open air
Year(s): No Data
Site Type(s): Lithic scatter
Other DHR ID: No Data
Temporary Designation: No Data

Site Evaluation Status

Locational Information

USGS Quad: STONY CREEK
County/Independent City: Sussex (County)
Physiographic Province: Coastal Plain
Elevation: 140 feet
Aspect: Facing Southeast
Drainage: Albemarle-Chowan
Slope: 0-2%
Acreage: 0.710
Landform: Terrace
Ownership Status: Private
Government Entity Name: No Data

Site Components

Component 1

Category: Industry/Processing/Extraction
Site Type: Lithic scatter
Cultural Affiliation: Native American
Cultural Affiliation Detail: No Data
DHR Time Period: Pre-Contact
Start Year: No Data
End Year: No Data
Comments: Flake and fire-cracked rock lithic scatter. No temporally diagnostic artifacts recovered.

Bibliographic Information

Bibliography:

2024. Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR.

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Principle Investigator: Michael Navarro, RPA
Project Manager: Zachary J. Davis, RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Dewberry

Investigator: Michael Navarro

Survey Date: 2/19/2024

Survey Description:

Chaney Enterprises proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia. The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95. Dewberry Engineers Inc. is providing a Phase I archaeological survey of the proposed disturbance zones in accordance with a Sussex County Re-Zoning Application.

Current Land Use	Date of Use	Comments
Forest	3/26/2024	Agricultural pine forest

Threats to Resource: Development

Site Conditions: Subsurface Integrity

Survey Strategies: Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

Total of 49 pre-contact artifacts included secondary and tertiary flakes composed of quartzite, quartz, and chert, as well as one fragment of fire-cracked quartzite. Artifacts recovered the Ap-horizon, Bt1-horizon, and Bt2-horizon in nine adjacent positive shovel tests. No temporally diagnostic artifacts recovered.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Dewberry Engineers Inc., Raleigh NC

Permanent Curation Repository: Landowner

Field Notes: Yes

Field Notes Repository: Dewberry Engineers Inc., Raleigh, NC

Photographic Media: Digital

Survey Reports: Yes

Survey Report Information:

Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR. 2024.

Survey Report Repository: DHR

DHR Library Reference Number: No Data

Significance Statement: Given that greater than three artifacts were recovered from intact soil horizons within adjacent shovel tests, Site 5 was established around the positive shovel tests. There exists the potential for Site 5 to yield new information about the pre-contact period in Sussex County. Therefore, Site 5 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level.

Surveyor's Eligibility Recommendations: Recommended for Further Survey

Surveyor's NR Criteria Recommendations: No Data

Surveyor's NR Criteria Considerations: No Data

Snapshot

Date Generated: March 27, 2024

Site Name: No Data
Site Classification: Terrestrial, open air
Year(s): No Data
Site Type(s): Lithic scatter
Other DHR ID: No Data
Temporary Designation: No Data

Site Evaluation Status

Locational Information

USGS Quad: STONY CREEK
County/Independent City: Sussex (County)
Physiographic Province: Coastal Plain
Elevation: 130 feet
Aspect: Facing Northeast
Drainage: Albemarle-Chowan
Slope: 0-2%
Acreage: 0.730
Landform: Terrace
Ownership Status: Private
Government Entity Name: No Data

Site Components

Component 1

Category: Industry/Processing/Extraction
Site Type: Lithic scatter
Cultural Affiliation: Native American
Cultural Affiliation Detail: No Data
DHR Time Period: Pre-Contact
Start Year: No Data
End Year: No Data
Comments: No temporally diagnostic artifacts recovered.

Bibliographic Information

Bibliography:

2024, Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR.

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Principle Investigator: Michael Navarro, RPA
Project Manager: Zachary J. Davis, RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Dewberry

Investigator: Michael Navarro

Survey Date: 2/19/2024

Survey Description:

Chaney Enterprises proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia. The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95. Dewberry Engineers Inc. is providing a Phase I archaeological survey of the proposed disturbance zones in accordance with a Sussex County Re-Zoning Application.

Current Land Use	Date of Use	Comments
Forest	3/26/2024	Agricultural pine forest

Threats to Resource: Development

Site Conditions: Subsurface Integrity

Survey Strategies: Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

Total of 67 pre-contact artifacts including primary, secondary, and tertiary flakes composed of quartzite, chert, and rhyolite, as well as debitage shatter, one biface preform, one lithic core, and one charcoal sample. Artifacts recovered from the Ap-horizon, Bt1-horizon, and Bt2-horizon within nine adjacent positive shovel tests.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Dewberry Engineers Inc., Raleigh NC

Permanent Curation Repository: Landowner

Field Notes: Yes

Field Notes Repository: Dewberry Engineers Inc., Raleigh, NC

Photographic Media: Digital

Survey Reports: Yes

Survey Report Information:

Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR. 2024.

Survey Report Repository: DHR

DHR Library Reference Number: No Data

Significance Statement: Given the varied pre-contact artifact assemblage recovered from intact soil horizons within adjacent shovel tests, Site 6 was established around the positive shovel tests. There exists the potential for Site 6 to yield new information about the pre-contact period in Sussex County. Therefore, Site 6 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level.

Surveyor's Eligibility Recommendations: Recommended for Further Survey

Surveyor's NR Criteria Recommendations: No Data

Surveyor's NR Criteria Considerations: No Data

Snapshot

Date Generated: March 27, 2024

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	No Data
Site Type(s):	Lithic scatter
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Locational Information

USGS Quad:	STONY CREEK
County/Independent City:	Sussex (County)
Physiographic Province:	Coastal Plain
Elevation:	140 feet
Aspect:	Facing Northeast
Drainage:	Albemarle-Chowan
Slope:	0-2%
Acreage:	0.720
Landform:	Terrace
Ownership Status:	Private
Government Entity Name:	No Data

Site Components

Component 1

Category:	Industry/Processing/Extraction
Site Type:	Lithic scatter
Cultural Affiliation:	Native American
Cultural Affiliation Detail:	No Data
DHR Time Period:	Pre-Contact
Start Year:	No Data
End Year:	No Data
Comments:	Flake and shatter debitage; no temporally diagnostic artifacts recovered.

Bibliographic Information

Bibliography:

2024. Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR.

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Principle Investigator: Michael Navarro, RPA
Project Manager: Zachary J. Davis, RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Dewberry

Investigator: Michael Navarro

Survey Date: 2/19/2024

Survey Description:

Chaney Enterprises proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia. The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95. Dewberry Engineers Inc. is providing a Phase I archaeological survey of the proposed disturbance zones in accordance with a Sussex County Re-Zoning Application.

Current Land Use	Date of Use	Comments
Forest	3/26/2024	Agricultural Pine Forest

Threats to Resource: Development

Site Conditions: Subsurface Integrity

Survey Strategies: Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

A total of 34 pre-contact artifacts including quartz and quartzite primary, secondary, and tertiary flakes and shatter recovered from the Ap-horizon, Bt1-horizon, and Bt2-horizon in eight adjacent positive shovel tests. No temporally diagnostic artifacts recovered.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Dewberry Engineers Inc., Raleigh NC

Permanent Curation Repository: Landowner

Field Notes: Yes

Field Notes Repository: Dewberry Engineers Inc., Raleigh, NC

Photographic Media: Digital

Survey Reports: Yes

Survey Report Information:

Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR. 2024.

Survey Report Repository: DHR

DHR Library Reference Number: No Data

Significance Statement: There exists the potential for Site 7 to yield new information about the pre-contact period in Sussex County. Therefore, Site 7 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level.

Surveyor's Eligibility Recommendations: Recommended for Further Survey

Surveyor's NR Criteria Recommendations: No Data

Surveyor's NR Criteria Considerations: No Data

Snapshot

Date Generated: March 27, 2024

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	No Data
Site Type(s):	Lithic scatter
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Locational Information

USGS Quad:	STONY CREEK
County/Independent City:	Sussex (County)
Physiographic Province:	Coastal Plain
Elevation:	150 feet
Aspect:	Facing East
Drainage:	Albemarle-Chowan
Slope:	0-2%
Acreage:	0.210
Landform:	Terrace
Ownership Status:	Private
Government Entity Name:	No Data

Site Components

Component 1

Category:	Industry/Processing/Extraction
Site Type:	Lithic scatter
Cultural Affiliation:	Native American
Cultural Affiliation Detail:	No Data
DHR Time Period:	Pre-Contact
Start Year:	No Data
End Year:	No Data
Comments:	Core and flake scatter with charcoal. No temporally diagnostic artifacts.

Bibliographic Information

Bibliography:

2024. Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR.

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Principle Investigator: Michael Navarro, RPA
Project Manager: Zachary J. Davis, RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Dewberry

Investigator: Michael Navarro

Survey Date: 2/19/2024

Survey Description:

Chaney Enterprises proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia. The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95. Dewberry Engineers Inc. is providing a Phase I archaeological survey of the proposed disturbance zones in accordance with a Sussex County Re-Zoning Application.

Current Land Use	Date of Use	Comments
Forest	3/26/2024	Agricultural pine forest

Threats to Resource: Development

Site Conditions: Subsurface Integrity

Survey Strategies: Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

Total of 11 pre-contact artifacts including quartzite secondary and tertiary flakes, one lithic core, and one charcoal sample collected from the Bt1-horizon in four adjacent shovel tests. No temporally diagnostic artifacts recovered.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Dewberry Engineers Inc., Raleigh NC

Permanent Curation Repository: Landowner

Field Notes: Yes

Field Notes Repository: Dewberry Engineers Inc., Raleigh, NC

Photographic Media: Digital

Survey Reports: Yes

Survey Report Information:

Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR. 2024.

Survey Report Repository: DHR

DHR Library Reference Number: No Data

Significance Statement: Given the varied pre-contact artifact assemblage recovered from intact soil horizons within adjacent shovel tests, Site 8 was established around the positive shovel tests. There exists the potential for Site 8 to yield new information about the pre-contact period in Sussex County. Therefore, Site 8 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level.

Surveyor's Eligibility Recommendations: Recommended for Further Survey

Surveyor's NR Criteria Recommendations: No Data

Surveyor's NR Criteria Considerations: No Data

Snapshot

Date Generated: March 27, 2024

Site Name: No Data
Site Classification: Terrestrial, open air
Year(s): 1000 - 1606
Site Type(s): Lithic scatter
Other DHR ID: No Data
Temporary Designation: No Data

Site Evaluation Status

Locational Information

USGS Quad: STONY CREEK
County/Independent City: Sussex (County)
Physiographic Province: Coastal Plain
Elevation: 130 feet
Aspect: Facing Northeast
Drainage: Albemarle-Chowan
Slope: 0-2%
Acreage: 0.100
Landform: Terrace
Ownership Status: Private
Government Entity Name: No Data

Site Components

Component 1

Category: Industry/Processing/Extraction
Site Type: Lithic scatter
Cultural Affiliation: Native American
Cultural Affiliation Detail: No Data
DHR Time Period: Late Woodland (1000 - 1606)
Start Year: 1400
End Year: 1700
Comments: Date based on partial Clarksville projectile point recovered during shovel testing.

Bibliographic Information

Bibliography:

2024. Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On file: DHR.

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Principle Investigator: Michael Navarro, RPA
Project Manager: Zachary J. Davis, RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Dewberry

Investigator: Michael Navarro

Survey Date: 2/19/2024

Survey Description:

Chaney Enterprises proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia. The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95. Dewberry Engineers Inc. is providing a Phase I archaeological survey of the proposed disturbance zones in accordance with a Sussex County Re-Zoning Application.

Current Land Use	Date of Use	Comments
Forest	3/26/2024	Agricultural pine forest

Threats to Resource: Development

Site Conditions: Subsurface Integrity

Survey Strategies: Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

One partial Clarksville projectile point composed of Vein Quartz. Two tertiary flakes, one of quartzite and one of vein quartz. Point and quartzite flake recovered from Ap-horizon in one shovel test, while quartz flake recovered from Bt1-horizon in adjacent shovel test.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Dewberry Engineers Inc., Raleigh NC

Permanent Curation Repository: Landowner

Field Notes: Yes

Field Notes Repository: Dewberry Engineers Inc., Raleigh, NC

Photographic Media: Digital

Survey Reports: Yes

Survey Report Information:

Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR. 2024.

Survey Report Repository: DHR

DHR Library Reference Number: No Data

Significance Statement: Given the relatively intact soil stratigraphy, there exists the potential for Site 9 to yield new information about the Late Woodland period in Sussex County, as well as potentially earlier periods within the Bt1-horizon. Therefore, Site 9 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level.

Surveyor's Eligibility Recommendations: Recommended for Further Survey

Surveyor's NR Criteria Recommendations: No Data

Surveyor's NR Criteria Considerations: No Data

Snapshot

Date Generated: March 27, 2024

Site Name:	No Data
Site Classification:	Terrestrial, open air
Year(s):	No Data
Site Type(s):	Lithic scatter
Other DHR ID:	No Data
Temporary Designation:	No Data

Site Evaluation Status

Locational Information

USGS Quad:	STONY CREEK
County/Independent City:	Sussex (County)
Physiographic Province:	Coastal Plain
Elevation:	140 feet
Aspect:	Facing Northeast
Drainage:	Albemarle-Chowan
Slope:	0-2%
Acreage:	1.110
Landform:	Terrace
Ownership Status:	Private
Government Entity Name:	No Data

Site Components

Component 1

Category:	Industry/Processing/Extraction
Site Type:	Lithic scatter
Cultural Affiliation:	Native American
Cultural Affiliation Detail:	No Data
DHR Time Period:	Pre-Contact
Start Year:	No Data
End Year:	No Data
Comments:	No temporally diagnostic material recovered.

Bibliographic Information

Bibliography:

2024. Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On file: DHR.

Informant Data:

No Data

CRM Events

Event Type: Survey:Phase I

Project Staff/Notes:

Principle Investigator: Michael Navarro, RPA
Project Manager: Zachary J. Davis, RPA

Project Review File Number: No Data

Sponsoring Organization: No Data

Organization/Company: Dewberry

Investigator: Michael Navarro

Survey Date: 2/19/2024

Survey Description:

Chaney Enterprises proposes to convert two discontinuous areas of forested and agricultural land into two hard-rock quarries, collectively known as the Project Freedom Site, within a parcel east of Little Mill Road (SR 630) near the Town of Stony Creek in Sussex County, Virginia. The proposed quarry areas total 176 acres, located in southeastern Virginia about 20 miles south of Petersburg and six miles west of Interstate 95. Dewberry Engineers Inc. is providing a Phase I archaeological survey of the proposed disturbance zones in accordance with a Sussex County Re-Zoning Application.

Current Land Use	Date of Use	Comments
Forest	3/26/2024	Agricultural pine forest

Threats to Resource: Development

Site Conditions: Subsurface Integrity

Survey Strategies: Subsurface Testing

Specimens Collected: Yes

Specimens Observed, Not Collected: No

Artifacts Summary and Diagnostics:

Total of 30 pre-contact artifacts collected including primary, secondary, and tertiary quartzite flakes, fire-cracked quartz, one biface preform and one undiagnostic biface. One charcoal sample taken. No temporally diagnostic artifacts recovered.

Summary of Specimens Observed, Not Collected:

No Data

Current Curation Repository: Dewberry Engineers Inc., Raleigh NC

Permanent Curation Repository: Landowner

Field Notes: Yes

Field Notes Repository: Dewberry Engineers Inc., Raleigh, NC

Photographic Media: Digital

Survey Reports: Yes

Survey Report Information:

Navarro, Michael and Zachary Davis. Phase I Archaeological Survey, Project Freedom Site, Sussex County, Virginia. On File: DHR. 2024.

Survey Report Repository: DHR

DHR Library Reference Number: No Data

Significance Statement: Given the pre-contact artifact assemblage recovered from intact soil horizons within adjacent shovel tests, Site 10 was established around the positive shovel tests. There exists the potential for Site 10 to yield new information about the pre-contact period in Sussex County. Therefore, Site 10 has potential significance and is unevaluated for inclusion in the National Register at the Phase I level.

Surveyor's Eligibility Recommendations: Recommended for Further Survey

Surveyor's NR Criteria Recommendations: No Data

Surveyor's NR Criteria Considerations: No Data

APPENDIX F: Professional Qualifications

Meets the Secretary of Interior Qualification Standards for Archaeology and History.

EDUCATION

MA • Anthropology • East Carolina University • 2020

BA • Archaeology • The University of North Carolina at Chapel Hill • 2018

REGISTRATIONS

Registered Professional Archaeologist • U.S.

YEARS OF EXPERIENCE

Dewberry • 3

Prior • 1

Michael Navarro RPA
STAFF ARCHAEOLOGIST

Michael conducts research, investigation, and/or mitigation of historical or cultural resources. Fieldwork prior to joining Dewberry includes excavations and archaeological survey. Michael has conducted surveys, excavations, and laboratory investigations across multiple countries and concerning multiple time periods. His specialization with archaeological human skeletal remains helps clients navigate the sensitive legal and ethical ramifications within those projects.

RELEVANT EXPERIENCE

Phase I Archaeological Survey, 360 Solar Center, Sun Tribe Development, Chesterfield County, VA. Archaeologist for proposed 52 MW solar photovoltaic site covering nearly 1,400 acres in central southern Virginia. Primary author of a cultural resource report prepared to satisfy the Virginia Department of Environmental Quality's Solar Permit by Rule (PBR) process. Field Director for archaeological survey which involved the application of archaeological site predictive modeling to avoid surveying areas with little to no archaeological potential and focused survey on hand excavation of nearly 3,000 shovel tests and pedestrian reconnaissance to evaluate approximately 200 acres of archaeological potential. The results of the archaeological survey allowed Sun Tribe to modify their proposed solar array to avoid impacts on two previously unknown archaeological sites (one prehistoric and one historic) and one previously un-surveyed historic family cemetery. An additional five previously unknown historic archaeological sites were identified and recommended not eligible for listing in the NRHP at the Phase I level. DHR concurred with the recommendations, allowing the client to move forward with development.

Phase I Archaeological Survey, Virginia State Police Division Six Headquarters, City of Salem, VA. Archaeologist for proposed state police headquarters within two parcels totaling 11.1 acres in western Virginia. Primary author of a cultural resource report conducted on behalf of VSP. Directed field survey which included background research, pedestrian reconnaissance, archaeological sensitivity modeling, and excavation of 225 shovel tests across the proposed Division Six Headquarters property. Fieldwork resulted in the establishment of one previously unknown prehistoric archaeological site. The survey allowed VSP to modify their proposed headquarters to avoid impacts to the archaeological site and proceed with development.

Phase I Cultural Resources Eligibility/Effects Documentation, RT 73 Church Road (CR 616) to Fellowship Road (CR 673), Mount Laurel and Maple Shade Townships, Burlington County, NJ. Archaeologist and primary author of cultural resources eligibility/effects documentation, which consisted of combined background research and fieldwork results designed to identify cultural resources and define archaeological site boundaries within the project area. Field Director overseeing the excavation of 232 shovel tests along RT 73 and Church Road in areas sensitive for historic and prehistoric archaeology. No historic sites were identified within the project area; NJDOT was able to proceed with development of major road improvements.

Phase I Archaeological Survey, Glades Group Site, FEMA Direct Housing Mission, Lee County, FL. Archaeologist for proposed temporary housing site in the wake of Hurricane Ian near Fort Myers. Field Director overseeing surface survey and excavation of 20 shovel test pits at the Glades Group Site. Primary author of a cultural resources report prepared to satisfy NEPA and NHPA 1966, as amended.

Michael Navarro RPA
STAFF ARCHAEOLOGIST

Subsurface survey of the Glades Group sites revealed no significant cultural resources within APE; a full report was drafted quickly following fieldwork completion. FEMA was able to advance temporary housing mission within an accelerated timeline.

Phase I Archaeological Survey, Bokeelia Gardens Group Site, FEMA Direct Housing Mission, Lee County, FL. Archaeologist for proposed temporary housing site in the wake of Hurricane Ian on Pine Island. Field crew member assisting surface survey and excavation of over 60 shovel test pits at the Bokeelia Gardens Group Site. Subsurface survey of the Bokeelia Gardens Group Site revealed no significant cultural resources within APE; a full report was drafted quickly following fieldwork completion. FEMA was able to advance temporary housing mission within an accelerated timeline.

Phase I Archaeological Survey, United Memorial Group Site, FEMA Direct Housing Mission, Monroe County, MS. Archaeologist for proposed temporary housing site in Amory, MS. Field crew member assisting surface survey and excavation of 53 shovel test pits at the United Memorial Group Site. Subsurface survey of the Bokeelia Gardens Group Site revealed one new historic archaeological site recommended Not Eligible for listing in the NRHP; a full report was drafted quickly following fieldwork completion and SHPO coordination. FEMA was able to advance temporary housing mission within an accelerated timeline.

Natural and Cultural Resources Reviews, Duke Energy Corporation, NC and SC. Archaeologist responsible for reviewing archaeological, historic, and environmental data maintained by the NC and SC State Historic Preservation Offices within various transmission alignments and substation parcels. Principle investigator tasked with making recommendations as to potential further cultural resource needs prior to project design. Projects include multiple power line and substation alterations throughout North and South Carolina. More than 15 projects have been reviewed since 2021.

Phase I Archaeological Survey, Indian Health Service, King William County, VA. Archaeologist and primary author responsible for preparing a Phase I Archaeological Survey, which consisted of combined background research and archaeological fieldwork designed to identify cultural resources and define archaeological site boundaries within the project's Area of Potential Effect (APE). Responsibilities included review of available archaeological and historical data; review of past archaeological research within and near the project site; excavation of 10 shovel tests within the Pamunkey Indian Reservation Archaeological District; and primary author of the report documentation.

Phase I Cultural Resources Eligibility/Effects Documentation, Chadwick Beach Island Bridge, Ocean County, NJ. Archaeologist and primary author of cultural resources eligibility/effects documentation, which consisted of combined background research and fieldwork results designed to identify cultural resources and define archaeological site boundaries within the project area. Responsibilities included review of available archaeological and historical data; review of past archaeological research within and near the project site; review of environmental and soils classifications within the project site; and archaeological sensitivity modeling to eliminate unnecessary areas for subsurface excavation. The documentation allowed the client to move forward with design and replacement of a critical infrastructure element.

Zachary Davis, RPA

CULTURAL RESOURCES DISCIPLINE LEAD/ SENIOR ARCHAEOLOGIST / SENIOR PROJECT MANAGER

Zach Davis is a senior archaeologist and project manager practiced in National Environmental Policy Act (NEPA) and State Environmental Quality Review Act (SEQRA) compliance, as well as Phase IA Archaeological Assessments, Phase IB Archaeological Surveys, and Phase II Archaeological Site Evaluations. Zach has been project manager for over 100 projects in New York, New Jersey, and other Mid-Atlantic States.

Port Jervis Transmission Line Rebuild Project, Orange & Rockland Utilities, Port Jervis, NY. Project Manager for this project, which involved a Phase IA and Phase IB Cultural Resources Assessment in preparation for proposed improvements to a segment of Transmission Line 111 at the right-of-way corridor between Skyline Drive and Park Avenue.

Archaeological Discovery Plan and Archaeological Monitoring for 33R07 Extension, Orange & Rockland Utilities, Tottenville, NY. Project Manager for this 2.5-mile electrical wire installation project. Responsible for developing, revising, and executing an unanticipated archaeology plan, which included a description of the proposed project, any prior archaeological investigations or context; an analysis of the potential for archaeological resources and potential impacts from the proposed project's excavation; the need for the unanticipated discovery plan; human remains discovery protocol; and reporting, including a summary of unanticipated discoveries as well as the results of excavation monitoring.

Skyline Drive Transformer Project Cultural Resources Services, Orange & Rockland Utilities, Port Jervis, NY. Task Manager for this task, which involves preparing a Phase IA Cultural Resources Assessment focused on the roughly 2,000-square-feet area that will be impacted by impacted by the proposed transformer as well as its associated poles and underground wires. The Cultural Resources included a pedestrian reconnaissance, site photographs, a sensitivity assessment, and a disturbance summary.

Port Jervis Mobile Substation Phase IA Archaeological Assessment, Orange & Rockland Utilities, Port Jervis, NY. Task Manager for this project, which supports the creation of a proposed mobile substation. Responsible for preparing both a Phase IA Archaeological Assessment, which included a pedestrian reconnaissance, site photographs, a sensitivity assessment, a disturbance summary, archaeological testing recommendations, etc.

Goshen Training Center Improvements, Ecological, Cultural Resources Support, Orange & Rockland Utilities, Woodbury, NY. Project Manager for this task, which involved a Phase IA and Phase IB Cultural Resources Study in support of facility improvements to the Goshen Training Center.

Harriman Substation Expansion, Cultural Resources Support, Orange & Rockland Utilities, Woodbury, NY. Project Manager/Cultural Resources Specialist for this task, which involved Phase IA and Phase IB Cultural Resources Study in support of the expansion of the Harriman Substation.

Gas Regulator Station, Hunts Point Avenue Right-of-Way, Unanticipated Archaeological Discovery Plan, Con Edison, Bronx, NY. Task Manager supporting the development of an Unanticipated Archaeological Discovery Plan to provide guidance during the construction of a proposed gas regulator station and connections adjacent to a New York City park that consists of a cemetery with burials dating back to the early 19th century.

Passaic Bus Terminal Environmental Support Services, NJ TRANSIT, Passaic, NJ. Cultural Resources Lead supporting NJ TRANSIT's preparation of environmental documentation for this Federal Transit Administration funded project to construct a new bus terminal in an underused parking median in downtown Passaic. Responsible for preparation of a combined Phase IA Archaeological Assessment/ Historic Architectural Resources Background

EDUCATION

PhD (ABD) • Interdepartmental Doctoral Program in Anthropology • SUNY Stony Brook • 2006

MA • Anthropology • SUNY Stony Brook • 2000

MA • Archaeology • University of London • 1994

BA • Archaeological Studies • Boston University • 1993

REGISTRATIONS

Registered Professional Archaeologist

An Advanced Workshop for National Register Nomination Preparers, National Park Service and New Jersey Historic Trust (2012)

Cultural Resources Best Practices Workshop, 7-Hour Training Program, New Jersey Historic Preservation Office (2006)

OSHA 40-Hour Hazardous Waste Operations Training (2004); Annual Refreshers: US

Trenching and Excavation Safety – OSHA Construction Industry Standards, Subpart P (29 CFR 2926. 650-652) (2009)

YEARS OF EXPERIENCE

Dewberry • 4

Prior • 22

AFFLIATIONS

Society for American Archaeology

Millburn Short Hills Historic Society

New York Archaeological Council

Commissioner, Millburn Historic Preservation Commission, 2016-2022.

Survey (HARBS)/Environmental Assessment (EA) that will identify known and identified potential historic resources within the Area of Potential Effect (APE), an archaeological sensitivity of the APE, and anticipated effects that may result from the proposed bus terminal. In the event that the project is found to result in an Adverse Effect under Section 106, we will prepare a Memorandum of Agreement (MOA) documenting the stipulations required to mitigate the project effects.

Made in NY (MiNY) Campus, New York City Economic Development Corp., Brooklyn, NY. Cultural Resources Lead for preparation of an Architectural Eligibility Assessment and Phase IA Archaeological Study for a $136-million project partially located in the Bush Terminal Historic District. The project includes major renovations to create a 600,000-square-foot garment manufacturing hub; upgrades to a 180,000-square-foot building; constructing a 100,000-square-foot film and television production facility; and making streetscape improvements, a new plaza space, and utility improvements.

Requirements Contract for Environmental Assessment HWEARCO4, NYCDDC, Staten Island and Manhattan, NY. Senior Archeologist for a three-year, $10-million joint venture contract. Current work involves implementing a Construction Protection Plan (CPP) for utility upgrades in the Gowanus neighborhood of Brooklyn where inspection and vibration monitoring is being conducted at historic architectural resources within 90 feet of construction.

Roosevelt Island Bike Ramp and Bike Lane, Roosevelt Island Operating Corporation, New York City, NY. Cultural Resources Lead for the design of a new elevated bike ramp and a two-way bicycle lane on Roosevelt Island. The scope of work includes preparation of a Federal Environmental Approval Worksheet, a Short Environmental Assessment Form, a New York City Waterfront Revitalization Program Consistency Assessment Form, and a summary of existing historic resource conditions for the bridge and the surrounding area.

Archaeological Survey for Hazard Mitigation Grant Program, FEMA, City of Elba, Coffee County, AL. Project Manager for a Phase I Archaeological Survey of 64 residential properties that are planned to be demolished as part of the FEMA Hazard Mitigation Grant Program. Activities include field survey, archival research, artifact processing and analysis as needed, and preparation of an archaeological report.

Phase I Archaeological Investigations for Proposed Bridge Replacement Project on SR 3007-015, Pennsylvania Department of Transportation (PennDOT) District 3-0, Woodward Township, Lycoming County, PA. Senior Archaeologist responsible for providing oversight to a Phase I Archaeological Investigations for a proposed bridge replacement project on State Road 3007-015 crossing the Pine Run, between Woodward and Piatt Townships. The majority of the project area was designated a sensitive for prehistoric archaeological resources given the close proximity of the project to the West Branch of the Susquehanna River. Geomorphological cores were retrieved prior to archaeological field work to determine the likelihood for deeply buried archaeological resources. Coring found that deeply buried clay soils did not hold potential for archaeological resources but did confirm the potential for archaeological deposits within a shallow silty veneer stratum. Hand excavated shovel tests were located across the project area and identified a small concentration of late-nineteenth to early-twentieth century artifacts within a plow zone context. The recovered material fails to satisfy Pennsylvania Historical and Museum Commission (PHMC) archaeological site criteria. The investigations demonstrated that the project will have no effect to archaeological sites given the lack prehistoric archaeology and the small scatter of historic artifacts. A Phase I Archaeology Negative Survey Form was completed for the PHMC detailing the project's findings.

MARCH 2024

SUBMITTED BY
Dewberry Engineers Inc.
600 Parsippany Road, Suite 301
Parsippany, NJ 07054

11 April 2024

Phoenix Noise & Vibration, LLC
5216 Chairmans Court, Suite 107
Frederick, Maryland 21703
301.846.4227 (phone)
301.846.4355 (fax)
www.phoenixnv.com

Project Freedom Rock Quarry Noise Impact Analysis

Sussex County, Virginia

Report No. 240411
Project No. CHE2401

For: Chaney Enterprises

By: Eamon Curley

Engineering Solutions for Noise and Vibration Control

1 Executive Summary

Phoenix Noise & Vibration has conducted a noise impact analysis for the operation of equipment at the proposed Project Freedom rock quarry in Sussex County, Virginia. Due to the absence of applicable Sussex County and Virginia noise regulations, this study has been conducted according to commonly used noise regulations for mining equipment, specifically the Code of Maryland Regulations (COMAR).

Results show that 12-foot earth berms where the currently planned earth berms are located along the property line of Project Freedom are capable of maintaining noise levels from mining equipment below the COMAR maximum allowable noise level of 60 dBA. With these berms, Project Freedom complies with COMAR.

2 Noise Regulations

Sussex County and the state of Virginia do not have specific regulations regarding the evaluation of noise impact from mining equipment; however, the state of Maryland does. The same noise limits in the Code of Maryland Regulations (COMAR) are commonly used in other state and county noise regulations. Therefore, COMAR's maximum allowable noise levels, shown in Table 1, were used to evaluate the noise impact from Project Freedom.

Table 1: Table 1 from COMAR Chapter 26.02.03.02.

	Maximum Allowable Noise Level (dBA) for Receiving Land Use Category		
Time of Day	Industrial	Commercial	Residential
Day (7 a.m. to 10 p.m.)	75	67	65
Night (10 p.m. to 7 a.m.)	75	62	55

While agriculturally zoned land is not addressed in COMAR maximum allowable noise levels, Table 1 indicates that noise levels emitted from Project Freedom must not exceed 65 dBA during daytime hours as measured at neighboring residential property lines. COMAR also states, "*A person may not cause or permit the emission of prominent discrete tones and periodic noises which exceed a level which is 5 dBA lower than the applicable level listed in Table 1.*"

Noise emitted by mining equipment at Project Freedom will include back up warning devices (beepers), banging, and dumping which are all classified as "prominent discrete tones." Because 60 dBA is 5 dBA lower than the applicable 65 dBA maximum allowable residential noise level, a maximum allowable noise level of 60 dBA was used for this analysis.

3 Noise Surveys

On October 22, 2020, Phoenix Noise & Vibration personnel conducted noise measurements to determine the noise levels produced by the operation of mining equipment proposed for the Project Freedom site. Noise measurements were taken of existing mining equipment at the Smith Property Mine, an existing Chaney Enterprises sand and gravel mine.

At the Smith site, data was collected for a bulldozer, excavator, dump truck, and off-road dump truck. Measurements were made at 50 feet from the excavator and at 25 and 50 feet from the bulldozer, dump truck, and off-road dump truck.

3.1 Instrumentation

Precision sound level meters (shown in Table 2) were used to record all measurements.

Table 2: Instrumentation and serial numbers.

Sound Level Meter (Make and Model)	Serial Number
Norsonics Type 140	1402888
Norsonics Type 140	1406699

Each of these instruments meets the ANIS S1.4 standard for a Type I sound level meter. Prior to the survey, all instrumentation was calibrated traceable to the National Institute of Standards and Technology (NIST).

3.2 Measurement Results

Results of the noise measurement survey are presented in Table 3.

Table 3: Measured noise levels for sand and gravel equipment at Smith Property Mine.

Equipment	Max Sound Level at 25 feet (dBA)	Max Sound Level at 50 feet (dBA)
Excavator, Caterpillar 249E	77-79	-
Bulldozer, Caterpillar D6N	85-87	66-73
Dump Truck	71-77	77-85
Off-Road Dump Truck, Komatsu HM300	78-81	88

The noise levels measured included the sound from equipment being operated under load, back up warning devices, and impact noises (banging, dumping, etc.).

Please note that noise measurements of the excavator at 50 feet were not possible at the time of the survey; however, the noise measurements made at 25 feet were satisfactory to calibrate the computer noise model.

Photographs of the measured equipment are shown in Figures 1-3.

Figure 1: Measured bulldozer, Caterpillar D6N.

Figure 2: Measured dump truck and excavator, Caterpillar 349E.

Figure 3: Measured off road dump truck, Komatsu HM300.

4 Current Site Conditions

The current site, shown in red in Figure 4, is located in Sussex County just south of the Dinwiddie County line. McKenney Highway (Route 40) is located to the north of the site, and Little Mill Road (Route 630) is located directly west of the site.

Figure 4: Project Freedom site boundary (shown in red). Image courtesy of Google Earth, dated January 31, 2024.

5 Computer Modeling

The Project Freedom site was computer modeled using the CadnaA software program. CadnaA is a three-dimensional noise propagation model capable of determining the noise level impact from multiple noise sources upon vertical and horizontal planes while accounting for factors such as buildings, barriers, significant structures, topography, ground absorption, and reflections. Noise levels can be presented either in spot locations or as noise contours of equal value throughout a defined surface area. Information obtained from drawings provided by Dewberry Engineers Inc.[1] was used to develop the model.

Noise impact from the various pieces of earth-moving equipment in the model was calibrated using the on-site noise measurements presented in Table 3. The measured frequency spectrums of each noise source were input and adjusted until the modeled noise level output matched the measured values. Noise sources in the model included the excavator, bulldozer, and dump truck.

Following calibration, the CadnaA model was used to determine the impact upon surrounding properties from proposed mining operations. Mining equipment noise impact is presented in Drawing 1 of the Appendix. The model allowed for the calculation of varying noise impact under different operation conditions on the site. The proposed earth berm shown in the drawings provided by Dewberry Engineers Inc. was also included in the model and is shown in Drawing 1.

Excavators and bulldozers were paired together at different locations to calculate the possible noise impact upon neighboring properties while the site is being mined at different locations. A dump truck was also placed along the haul road to calculate determine noise impact upon properties closest to the haul road.

Results indicate that, with the mitigation provided by the 12-foot earth berms shown in Drawing 1, equipment operating at the Project Freedom site will not impact the nearby properties with levels that exceed the COMAR maximum allowable noise level of 60 dBA.

[1] Project Freedom Concept Design, obtained from Lane Engineering, LLC on May 19, 2023.

6 MITIGATION

The CadnaA model was used to develop 12-foot earth berms along the property line of the Project Freedom site, the same earth berms shown in drawings of the site from Dewberry Engineers Inc. These berms reduced the modeled noise level at receiving properties to below 60 dBA to comply with the COMAR maximum allowable noise level. Drawing 1 of the Appendix presents the location of the proposed berms.

Mitigated noise impact upon the properties around the site is displayed in varying colors overlaid on the site plan to indicate varying noise levels. Varying shades of color surrounding the equipment indicate noise levels and diminish with distance and the presence of mitigating features like berms and hills. As shown in the drawings, no properties around the site are impacted by noise levels above 60 dBA if the berms are provided, meeting COMAR noise regulations.

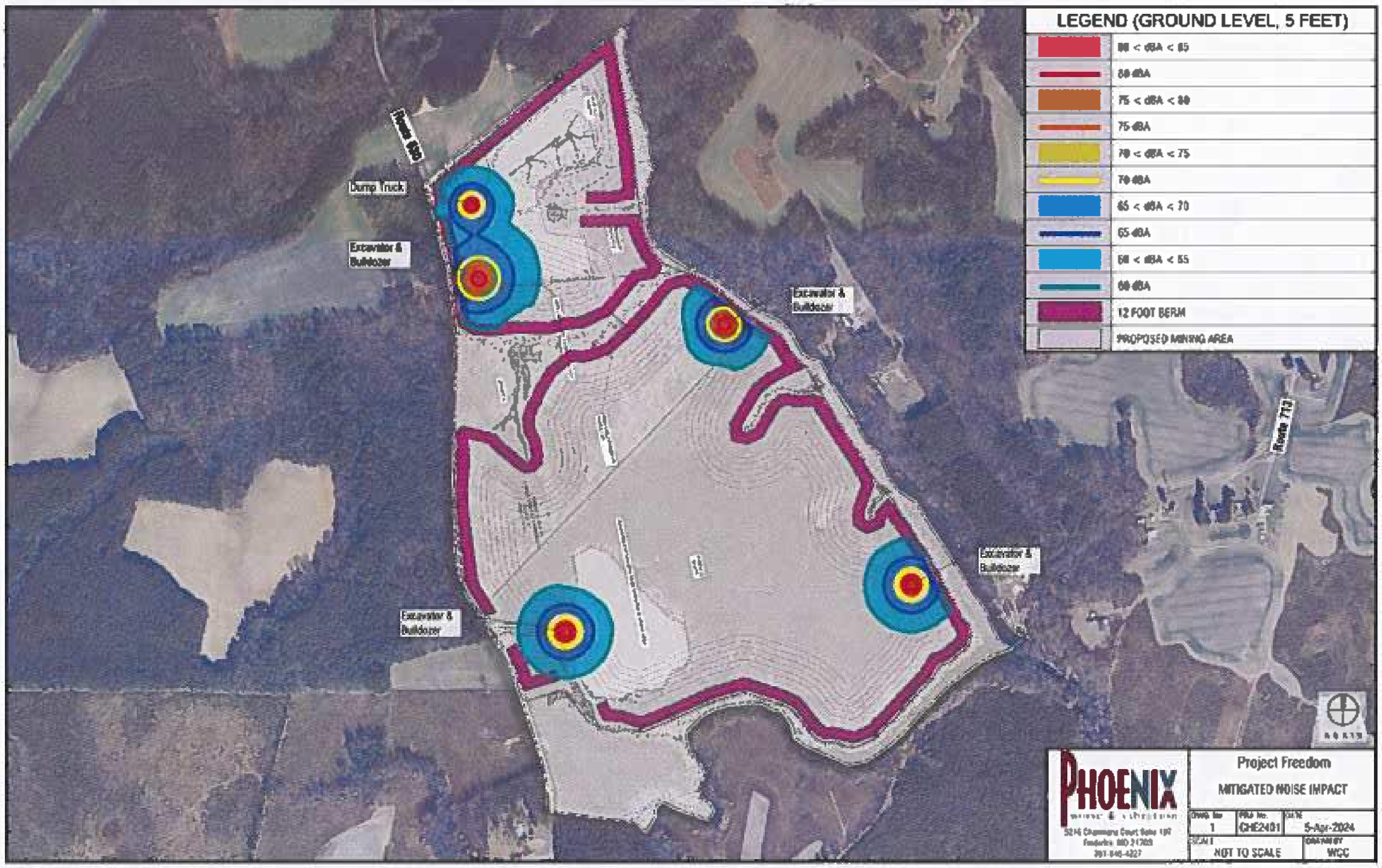
As the mining operation digs further into the existing grade, the lift of the mine will begin to block noise and act as a barrier to the surroundings, gradually eliminating the need for the berms.

7 CONCLUSION

Project Freedom can be converted to a rock quarry with operating mining equipment while complying with COMAR noise regulations provided that earth berms are developed on the property. 12-foot earth berms along the property line of the site will maintain noise levels at bordering residential properties below 60 dBA. With these recommendations, COMAR noise regulations will be met.

The results of this analysis have been based upon the current property boundaries and proposed topography as indicated on the Project Freedom Concept Design by Dewberry Engineers Inc., made available at the time of this analysis. Should any of these elements be modified, additional analysis will be required to determine if the mitigation recommendations presented herein are still capable of reducing noise impact to comply with COMAR noise regulations.

APPENDIX



Dump Truck
Excavator & Bulldozer
Excavator & Bulldozer
Excavator & Bulldozer
Excavator & Bulldozer
Route 713
LEGEND (GROUND LEVEL, 5 FEET)
80 < dBA < 85
80 dBA
75 < dBA < 80
75 dBA
70 < dBA < 75
70 dBA
65 < dBA < 70
65 dBA
60 < dBA < 65
60 dBA
12 FOOT BERM
PROPOSED MINING AREA
PHOENIX
Project Freedom
MITIGATED NOISE IMPACT
1
CHE2401
5-Apr-2024
NOT TO SCALE
WCC

Dewberry

Dewberry Engineers Inc.
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Glen Allen, VA 23060

804.290.7957
804.290.7928 fax
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April 10, 2024

ATTN: Kyle Murray
2410 Evergreen Road, Suite 201
Gambrills, MD 21054
Chaney Enterprises

RE: Desktop Threatened and Endangered Species Assessment
Freedom Project Phase 1, Sussex, VA

Mr. Murray:

Dewberry Engineers Inc. (Dewberry) is pleased to provide the following wildlife assessment of an approximately 50-acre property located in a forested area of Sussex, Virginia (**Project Aerial Map; Figure 1**). Route 40 is located north of the property boundary and Route 630 is located adjacent to the western property boundary.

For this report, a Staff Scientist with Dewberry conducted a desktop review of pertinent on-line databases to determine the potential presence of threatened and endangered (T&E) species under protection by Federal or State Regulatory agencies, within the project area. To do this, Dewberry performed an online search through the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) program. Also included in this report is information from the Virginia Department of Wildlife Resources (DWR), the Virginia Department of Conservation Resources (DCR), and the Center for Conservation Biology (CCB). This information is compiled in **Appendix A, B, C, D, & E** of this report. Please note that results of this assessment do not include ground reconnaissance. Any suitable habitat or indicated presence of T&E species will require further coordination with the appropriate agencies to confirm or refute their potential presence.

U.S. Fish and Wildlife Service Results

Utilizing the USFWS IPaC service, the subject properties coordinates were entered to determine if any Federally listed threatened and endangered species were documented in the general vicinity of the subject property. According to this information, the northern long-eared bat (*Myotis septentrionalis*) and red-cockaded woodpecker (*Picoides borealis*) are the only currently listed species located within the general vicinity of project area (**Table 1**). The tri-colored bat (*Perimyotis subflavus*) is listed as proposed endangered within the general vicinity of the project area (**Table 1**). Further coordination may be required if this species is up-listed.

Table 1 – U.S. Fish and Wildlife Service IPaC Results

Species		**Federal Status (T[1]/E[2])**	**Potential Habitat Present**	**Species Survey Window**
Common Name	**Scientific Name**			
Northern Long-Eared Bat	*Myotis septentrionalis*	E[2]	Yes	May 1-Sept. 15
Tricolored Bat	*Perimyotis subflavus*	E[3]	Yes	May 1-Sept. 15
Red-cockaded Woodpecker	*Picoides borealis*	E[2]	Yes	Year Round

[1]T – Threatened
[2]E – Endangered
[3]E – Proposed reclassification as endangered

As noted previously, the subject property is currently in an undeveloped forested rural area located south of Route 40 and east of Route 630. The onsite vegetation communities consist of predominantly mixed pine-hardwood forests with silvicultural and agricultural activities. The National Wetlands Inventory shows the potential presence of a riverine system bordering the project area to the east and south.

The subject property consists of potential habitat for the northern long-eared bat (NLEB), Tricolored Bat, red-cockaded woodpecker (RCW). According to the currently available Virginia DWR Time of Year Restrictions and Other Guidance document additional measures may be necessary for self-certification of compliance with Time of Year (TOY) restrictions. Currently, TOY restrictions apply for the RCW from April 1 to July 31. According to the currently available USFWS determination key, the project received a determination of "may affect – not likely to adversely affect" for the NLEB. For the NLEB, consultation with USFWS is considered complete according to the issued consistency letter. For the RCW, presence/absence surveys may be conducted to determine the probable presence or absence of the species. Upon coordination with the USFWS, negative survey results may negate TOY for tree clearing activities. Abiding by current TOY restrictions for the RCW would satisfy the requirements set by USFWS. This project, as it is currently understood by Dewberry, has potential to adversely affect the species identified in the IPaC report. Detailed information from the USFWS database can be found within **Appendix A** of this report.

<u>Virginia Department of Wildlife Resources Results</u>

Utilizing the DWR Wildlife Environmental Review Map Service (WERMS) database and the Virginia Fish and Wildlife Information Service (VaFWIS), the subject properties coordinates were entered to determine if any Federal/State listed species were documented in the general vicinity of the subject property. The according to this information, several species of concern are located within the general vicinity of project area and can be found listed below in **Table 2**. DWR confirmed the sightings of the Roanoke Logperch (*Percina rex*) and Atlantic Pigtoe (*Fusconaia masoni*) within a 2-mile radius from the subject property. Detailed information from this database can be found in **Appendix B** of this report.

Table 2 – Department of Wildlife Resources WERMS Results

Status	Common Name	Scientific Name
FE SE	Red-cockaded Woodpecker	*Picoides borealis*
FE ST	Northern Long-eared Bat	*Myotis septentrionalis*
FE SE	Dwarf Wedgemussel	*Alasmidonta heterodon*
FE SE	Atlantic Sturgeon	*Acipenser oxyrinchus*
FE SE	Roanoke Logperch	*Percina rex*
FT SE	Eastern Black Rail	*Laterallus jamaicensis jamaicensis*
FT ST	Atlantic Pigtoe	Fusconaia masoni
FT ST	Yellow Lance	*Elliptio lanceolata*
SE	Blackbanded Sunfish	*Enneacanthus chaetodon*
SE	Little Brown Bat	*Myotis lucifugus*
SE	Rafinesque's Easter Big-eared Bat	*Corynorhinus rafinesquii macrotis*
FP SE	Tri-colored Bat	*Corynorhinus rafinesquii macrotis*
ST	Loggerhead Shrike	*Lanius ludovicianus*
ST	Bachman's Sparrow	*Peucaea aestivalis*
ST	Henslow's Sparrow	*Centronyx henslowii*

ST	Mabee's Salamander	*Ambystoma mabeei*
ST	Migrant Loggerhead Shrike	*Lanius ludovicianus migrans*

FE – Federally Endangered FP – Federally Protected SE – State Endangered FT – Federally Threatened
ST – State Threatened

Department of Conservation and Recreation & Natural Heritage Database Results

The Virginia Department of Conservation and Recreation's (DCR) online Species and Communities database was searched to identify threatened and endangered species in Sussex, Virginia. **Table 3** display's federally and state listed species identified within the Hydrologic Unit Code (HUC 8) 03010201 in the Lower Sappony Creek Watershed. Species listed from the DCR are assigned a global conservation status rank determined by how likely the species is to be encountered.

Table 3 – Virginia Department of Conservation and Recreation

Status	Common Name	Scientific Name	Statewide Observations
G1 - Critically Impaired G2 - Imperiled	Roanoke Logperch	*Percina rex*	21

Additionally, a project review was requested from the Department of Conservation and Recreation's Biotics Data System. A search of DCRs Natural Heritage Database was conducted to identify regulated natural resources occurring on or adjacent to the subject property. No habitats of rare, threatened, or endangered plant and animal species were located on or within 100 feet of the subject property's boundaries. The project area does not intersect with any known natural heritage locations. DCR issued a "no further correspondence letter" and it can be found in **Appendix E.**

Center for Conservation Biology Results

The bald eagle (*Haliaeetus leucocephalus*) and the golden eagle (*Aquila chrysaetos*) are protected under the Migratory Bird Treaty Act of 1918 as well as the Bald Eagle and Golden Eagle Protection Act of 1962. To document the presence of known eagle nests onsite, Dewberry utilized the CCB online Eagle Nest Locator. This tool is used to determine if an active eagle's nest may be located within the projects influence, potentially necessitating coordination with regulatory agencies. According to the Eagle Nest Locator, no nests were located on, nor in the close vicinity of the subject property. The closest Eagle's nest, located 13.55 miles southeast, was last surveyed in 2012 with a last year occupied status of unknown. The CCB Eagle Nest locator map is located in **Appendix C**.

Conservation Lands Results

The Virginia DCR maintains a database of the Commonwealth's state-wide Conservation Lands, including include state, federal, private, and locally managed lands and conservation easements. The Virginia DCR or other entity in designating lands for conservation can place them under easements that are subject to preservation or other land use restrictions. Dewberry reviewed this database and found that the subject property does not have any conservation lands or easements. A map of easements is included in **Appendix D** of this report.

Summary of Database Results

Based on Dewberry's review of this information, it appears that the Project Freedom Quarry is not likely to adversely affect the northern-long eared bat but may have adverse effects on the red-cockaded woodpecker. Conducting presence/absence surveys or abiding by TOY restrictions for RCW would satisfy requirements set by USFWS. Further coordination with the U.S Fish & Wildlife Service, and other Virginia State Agencies is recommended to ensure compliance with the Endangered Species Act.

Additionally, the tri-colored bat (TCB, a candidate species for listing as endangered, is included in the IPaC database results. The up-listing of this species may require further coordination with the USFWS. The property has a lack of designated conservation lands that would restrict development activities.

Please contact Phillip Bailey at pbailey@dewberry.com or (804)205-3361 or Clay Robertson at cdrobertson@dewberry.com or by phone at (941)704-9693 with any questions or comments.

Sincerely,
Dewberry Engineers Inc.

Phillip Bailey
Environmental Scientist

Clay Robertson
Senior Environmental Scientist

MJMWJ - Enclosures P:\50164971/Envir TandE04.01.2024
Appendix A: Information for Planning and Consultation (IPAC) Database Information
Appendix B: Department of Wildlife Resources Database Information
Appendix C: Center for Conservation Biology Map
Appendix D: Department of Conservation and Recreation Easement Database Map
Appendix E: Virginia Department of Conservation and Recreation Natural Heritage Letter

References

Department of Conservation Resources. April 2024. Virginia Department of Conservation and Recreation Online Mapper.

Project Freedom: IPaC – Information for Planning and Consultation. https://ecos.fws.gov/ipac/

The Center for Conservation Biology. April 2024. Online Eagle's Nest Locater. Ccbbirds.org/maps/#eagles

The Virginia Department of Game and Inland Fisheries. VAWFIS Mapper. April 2024. Vawfwis.dgif.virginia.gov/fwis/index.asp

Virginia Department of Conservation and Recreation. DCR Mapper. April 2024. https://vanhde.org/content/map

Dewberry

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FIGURE 1:
PROJECT AERIAL MAP

FIGURE 1

PROJECT AERIAL MAP

Project Freedom
Sussex County, Virginia

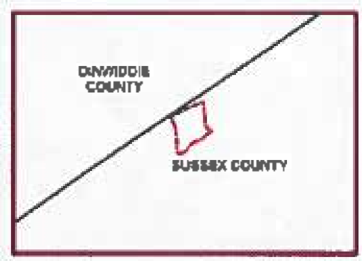
Owner/Developer: Chaney Enterprises		Page: 1 of 1
Project No: 60164971	Prepared By MJM	Date 4/5/2024
USGS Quadrangle: [illegible] 2022 VA	Watershed: [illegible]	Hydrologic Unit Code [illegible]

PROJECT FREEDOM PROJECT AREA

Project Acreage: 49.8

Center: 37.062213, -77.220870

KEY PLAN



APPENDIX A: USFWS INFORMATION FOR PLANNING AND CONSULTATION (IPaC) DATABASE INFORMATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694

In Reply Refer To: 04/01/2024 19:06:40 UTC
Project Code: 2024-0070888
Project Name: Freedom Quarry Phase 1

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
(804) 693-6694

PROJECT SUMMARY

Project Code: 2024-0070888
Project Name: Freedom Quarry Phase 1
Project Type: Surface Extraction - Non Energy Materials
Project Description: Phase I of a quarry to be constructed in Sussex County
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.937647049999995,-77.49799122205883,14z

Counties: Sussex County, Virginia

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 2 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. 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.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

BIRDS

NAME	STATUS
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency:	Private Entity
Name:	Phillip Bailey
Address:	4805 lake brook drive
Address Line 2:	suite 200
City:	Glen Allen
State:	VA
Zip:	23060
Email	pbailey@dewberry.com
Phone:	8042053361

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Virginia Ecological Services Field Office
6669 Short Lane
Gloucester, VA 23061-4410
Phone: (804) 693-6694

In Reply Refer To: 04/11/2024 14:12:12 UTC
Project code: 2024-0070888
Project Name: Freedom Quarry Phase 1

Federal Nexus: no
Federal Action Agency (if applicable): Department of Defense

Subject: Technical assistance for 'Freedom Quarry Phase 1'

Dear Phillip Bailey:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 11, 2024, for 'Freedom Quarry Phase 1' (here forward, Project). This project has been assigned Project Code 2024-0070888 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements are not complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project is not reasonably certain to cause incidental take of the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate
- Red-cockaded Woodpecker *Picoides borealis* Endangered
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species and/or critical habitat listed above. Note that if a new species is listed that may be affected by the identified action before it is complete, additional review is recommended to ensure compliance with the Endangered Species Act.

Next Steps

Coordination with the Service is complete. This letter serves as technical assistance. All conservation measures should be implemented as proposed. Thank you for considering federally listed species during your project planning.

We are uncertain where the northern long-eared bat occurs on the landscape outside of known locations. Because of the steep declines in the species and vast amount of available and suitable forest habitat, the presence of suitable forest habitat alone is a far less reliable predictor of their presence. Based on the best available information, most suitable habitat is now expected to be unoccupied. During the interim period, while we are working on potential methods to address this uncertainty, we conclude take is not reasonably certain to occur in areas of suitable habitat where presence has not been documented.

If no changes occur with the Project or there are no updates on listed species, no further consultation/coordination for this project is required for the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place before project implements any changes which are final or commits additional resources.

If you have any questions regarding this letter or need further assistance, please contact the Virginia Ecological Services Field Office and reference Project Code 2024-0070888 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Freedom Quarry Phase 1

2. Description

The following description was provided for the project 'Freedom Quarry Phase 1':

> Phase I of a quarry to be constructed in Sussex County

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.93747545,-77.49784187789831,14z

DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of "may affect, but not likely to adversely affect" for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer 'yes' if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Phillip Bailey
Address: 4805 lake brook drive
Address Line 2: suite 200
City: Glen Allen
State: VA
Zip: 23060
Email pbailey@dewberry.com
Phone: 8042053361

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Defense

APPENDIX B: DEPARTMENT OF WILDLIFE RESOURCES DATABASE INFORMATION

VaFWIS Search Report Compiled on 4/4/2024, 11:35:51 AM

Help

Known or likely to occur within a **2 mile radius around point 36.9377500 -77.4981667**
in 053 Dinwiddie County, 183 Sussex County, VA

View Map of Site Location

497 Known or Likely Species ordered by Status Concern for Conservation
(displaying first 31) (31 species with Status* or Tier I** or Tier II**)

BOVA Code	Status*	Tier**	Common Name	Scientific Name	Confirmed	Database(s)
040228	FESE	Ia	Woodpecker, red-cockaded	Picoides borealis		BOVA
050022	FEST	Ia	Bat, northern long-eared	Myotis septentrionalis		BOVA
060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon	Potential	BOVA,Habitat,HU6
010032	FESE	Ib	Sturgeon, Atlantic	Acipenser oxyrinchus		BOVA
010214	FESE	IIa	Logperch, Roanoke	Percina rex	Yes	BOVA,Habitat,SppObs,HU6
040110	FTSE	Ia	Rail, eastern black	Laterallus jamaicensis jamaicensis		BOVA
060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes	BOVA,TEWaters,Habitat,HU6
060029	FTST	IIa	Lance, yellow	Elliptio lanceolata		BOVA,HU6
010347	SE	Ia	Sunfish, blackbanded	Enneacanthus chaetodon		BOVA,HU6
050020	SE	Ia	Bat, little brown	Myotis lucifugus		BOVA
050034	SE	Ia	Bat, Rafinesque's eastern big-eared	Corynorhinus rafinesquii macrotis		BOVA,HU6
050027	FPSE	Ia	Bat, tri-colored	Perimyotis subflavus		BOVA
040293	ST	Ia	Shrike, loggerhead	Lanius ludovicianus		BOVA
040385	ST	Ia	Sparrow, Bachman's	Peucaea aestivalis		BOVA,HU6
040379	ST	Ia	Sparrow, Henslow's	Centronyx henslowii		BOVA
020044	ST	IIa	Salamander, Mabee's	Ambystoma mabeei	Potential	BOVA,Habitat
040292	ST		Shrike, migrant loggerhead	Lanius ludovicianus migrans		BOVA
030063	CC	IIIa	Turtle, spotted	Clemmys guttata		BOVA,HU6
030031	CC	IIIc	Kingsnake, scarlet	Lampropeltis elapsoides		BOVA
010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes	BOVA,Habitat,SppObs,HU6
010077		Ia	Shiner, bridle	Notropis bifrenatus		BOVA
020063		IIa	Toad, oak	Anaxyrus quercicus	Potential	BOVA,Habitat,HU6
020002		IIa	Treefrog, barking	Hyla gratiosa		BOVA

040052		IIa	Duck, American black	Anas rubripes		BOVA,HU6
040029		IIa	Heron, little blue	Egretta caerulea caerulea		BOVA
040036		IIa	Night-heron, yellow-crowned	Nyctanassa violacea violacea		BOVA
040320		IIa	Warbler, cerulean	Setophaga cerulea		BOVA,HU6
040140		IIa	Woodcock, American	Scolopax minor		BOVA,HU6
060071		IIa	Lampmussel, yellow	Lampsilis cariosa		BOVA,HU6
040203		IIb	Cuckoo, black-billed	Coccyzus erythropthalmus		BOVA
040105		IIb	Rail, king	Rallus elegans		BOVA

To view **All 497 species** View 497

*FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; CC=Collection Concern

**I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need;
III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need
Virginia Widlife Action Plan Conservation Opportunity Ranking:
a - On the ground management strategies/actions exist and can be feasibly implemented.;
b - On the ground actions or research needs have been identified but cannot feasibly be implemented at this time.;
c - No on the ground actions or research needs have been identified or all identified conservation opportunities have been exhausted.

View Map of All Query Results from All Observation Tables

Bat Colonies or Hibernacula: **Not Known**

Anadromous Fish Use Streams

N/A

Impediments to Fish Passage (1 records)

View Map of All Fish Impediments

ID	Name	River	View Map
285	SPIERS DAM	SAPPONY CREEK	Yes

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters (21 Reaches - displaying first 20) [View Map of All Threatened and Endangered Waters]

Stream Name	T&E Waters Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Sappony Creek (0264422)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0264725)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0264808)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0267470)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0270324)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0270513)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0270565)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0270857)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0271797)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0271980)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0273915)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0273934)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0274276)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0274313)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0279769)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0279834)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0279836)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes

Sappony Creek (0281043)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0281353)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0282154)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes
Sappony Creek (0286592)	FTST	060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	Yes

Managed Trout Streams

N/A

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Species Observations (26 records - displaying first 20 , ! Observation with Threatened or Endangered species)

View Map of All Query Results Species Observations

obsID	class	Date Observed	Observer	N Species			View Map
				Different Species	Highest TE*	Highest Tier**	
331596	SppObs	Jan 1 1949	ECR-RANEY	16	FESE	II	Yes
11385	SppObs	Sep 25 1986	NORMAN	27		I	Yes
375312	Aquatics	Oct 27 2004	B. T. Watson, S. L. Huffer	8		III	Yes
11387	SppObs	Sep 26 1986	NORMAN	28		III	Yes
10364	SppObs	Nov 8 1984	Norman	22		III	Yes
15457	SppObs	Jul 20 1979	PETRIMOULX	5		III	Yes
15486	SppObs	Jul 19 1979	PETRIMOULX	10		III	Yes

15456	SppObs	May 30 1979	HJ PETRIMOULX	2		III	Yes
336702	SppObs	Jan 1 1979	HJP-B-PETRIMOULX	10		III	Yes
336693	SppObs	Jan 1 1979	HJP-B-PETRIMOULX	2		III	Yes
336182	SppObs	Jan 1 1978	REJ-B-JENKINS	12		III	Yes
15483	SppObs	Apr 8 1968	T. ZORACH	1		IV	Yes
621197	SppObs	Jun 26 2013	Brian ; Munford	1			Yes
621198	SppObs	Jun 26 2013	Brian ; Munford	1			Yes
60883	SppObs	Mar 13 1982	HIGHTON, RICHARD; RIDDICK, ERICK	1			Yes
60882	SppObs	Jan 30 1974	HIGHTON, RICHARD; DANSTEDT TED	1			Yes
60881	SppObs	Mar 26 1972	HIGHTON, RICHARD	1			Yes
60880	SppObs	Oct 5 1971	HIGHTON, RICHARD	1			Yes
60879	SppObs	Mar 20 1971	HIGHTON, RICHARD	1			Yes
60937	SppObs	Nov 2 1969	HIGHTON, RICHARD	1			Yes

Displayed 20 Species Observations

Selected 26 Observations View all 26 Species Observations

Habitat Predicted for Aquatic WAP Tier I & II Species (2 Reaches)

View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species

Stream Name	Tier Species						View Map
	Highest TE*	BOVA Code, Status*, Tier**, Common & Scientific Name					
Rocky Branch (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon	
		060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	
Sappony Creek (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon	
		060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	

Sappony Creek (03010201)	FESE	010174		Ia	Bass, Roanoke	Ambloplites cavifrons	Yes
		010214	FESE	IIa	Logperch, Roanoke	Percina rex	
		060003	FESE	Ia	Wedgemussel, dwarf	Alasmidonta heterodon	
		060173	FTST	Ia	Pigtoe, Atlantic	Fusconaia masoni	

Habitat Predicted for Terrestrial WAP Tier I & II Species (2 Species)

View Map of Combined Terrestrial Habitat Predicted for 2 WAP Tier I & II Species Listed Below

ordered by Status Concern for Conservation

BOVA Code	Status*	Tier**	Common Name	Scientific Name	View Map
020044	ST	IIa	Salamander, Mabee's	Ambystoma mabeei	Yes
020063		IIa	Toad, oak	Anaxyrus quercicus	Yes

Virginia Breeding Bird Atlas Blocks (1 records)

View Map of All Query Results
Virginia Breeding Bird Atlas Blocks

BBA ID	Atlas Quadrangle Block Name	Breeding Bird Atlas Species			View Map
		Different Species	Highest TE*	Highest Tier**	
50046	Cherry Hill, SE	50		III	Yes

Public Holdings:

N/A

Summary of BOVA Species Associated with Cities and Counties of the Commonwealth of Virginia:

FIPS Code	City and County Name	Different Species	Highest TE	Highest Tier
053	Dinwiddie	385	FESE	I
183	Sussex	391	FESE	I

USGS 7.5' Quadrangles:
Cherry Hill

Stony Creek

USGS NRCS Watersheds in Virginia:

N/A

USGS National 6th Order Watersheds Summary of Wildlife Action Plan Tier I, II, III, and IV Species:

HU6 Code	USGS 6th Order Hydrologic Unit	Different Species	Highest TE	Highest Tier
CU17	Nottoway River-Harris Swamp	75	FESE	I
CU24	Lower Sappony Creek	71	FESE	I
CU25	Stony Creek-Southwest Swamp	74	FESE	I

Compiled on 4/4/2024, 11:35:51 AM 1197710 4.0 report=all searchType= R dist= 3218.688 poi= 36.9177500 -77.4981667

PixelSize=64; Anadromous=0.018157; BBA=0.033699; BECAR=0.017081; Bats=0.017177; Buffer=0.063868; County=0.06221; HU6=0.071979; Impediments=0.019146; Init=0.094577; PublicLands=0.021288; Quad=0.036606; SppObs=0.226394; TEWaters=0.031158; TierReaches=0.053318; TierTerrestrial=0.074823; Total=1.038449; Tracking_BOVA=0.198863; Trout=0.019456; huva=0.037707

Site Location

36,56,15.9 -77,29,53.4
is the Search Point

Show Position Rings
◉ Yes ○ No
1 mile and 1/4 mile at the **Search Point**

Show Search Area
◉ Yes ○ No
2 Search distance miles radius

Search Point is at map center

Base Map Choices
Topography

Map Overlay Choices
Current List: Position, Search, BECAR, BAEANests, TEWaters, TierII, Habitat, Trout, Anadromous

Refresh Browser Page

Map Click | Pan
Map Scale | In Zoom Out
Screen Size | Small Size Big

Help

Map Overlay Legend

T & E Waters

Federal

State

Predicted Habitat WAP Tier I & II

Aquatic

Terrestrial

Trout Waters

Class I - IV

Class V - VI

Anadromous Fish Reach

Confirmed

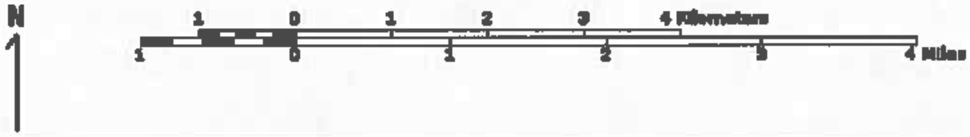
Potential

J23 Impediment

Position Rings 1 mile and 1/4 mile at the Search Point

2 mile radius Search Area

Bald Eagle Concentration Areas and Roosts



Point of Search 36,56,15.9 -77,29,53.4

Map Location 36,56,15.9 -77,29,53.4

Select Coordinate System:
- ◉ Degrees,Minutes,Seconds Latitude - Longitude
- ○ Decimal Degrees Latitude - Longitude
- ○ Meters UTM NAD83 East North Zone
- ○ Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft terraserver-usa.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 272724 and top 4095683. Pixel size is 16 meters . Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixles. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+- are from the United States Department of the Interior, United States Geological Survey.
Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.
Shaded topographic maps are from TOPO! ©2006 National Geographic http://www.national.geographic.com/topo
All other map products are from the Commonwealth of Virginia Department of Wildlife Resources.

map assembled 2024-04-04 11:34:50 (qa/qc March 21, 2016 12:20 - tn=1977104.0 dist=3218.688 I)
$poi=36.9377500 -77.4981667

APPENDIX C: CENTER FOR CONSERVATION BIOLOGY INFORMATION

CCB Mapping Portal

Layers: VA Eagle Nest Locator

Map Center [longitude, latitude]: [-77.43782043457031, 36.86890954755031]

Map Link:
https://ccbbirds.org/maps/#layer=VA+Eagle+Nest+Locator&zoom=12&lat=36.86890954755031&lng=-77.43782043457031&legend=legend_tab_7c321b7e-e523-11e4-aaa0-0e0c41326911&base=World+Imagery+%28ESRI%29

Report Generated On: 04/04/2024

Appendix D: DEPARTMENT OF CONSERVATION AND RECREATION EASEMENT MAP

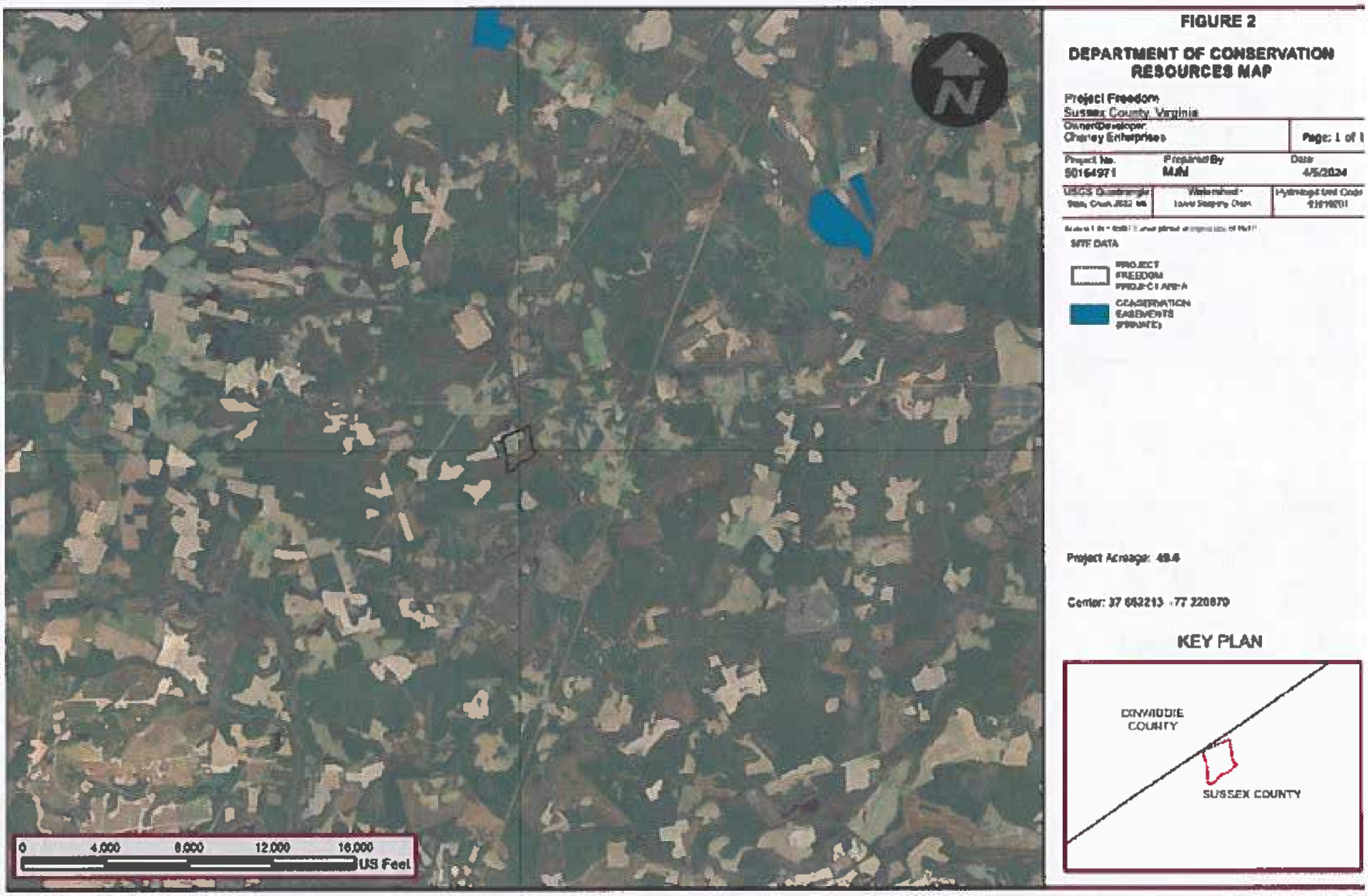


FIGURE 2
DEPARTMENT OF CONSERVATION RESOURCES MAP
Project Freedom
Sussex County, Virginia
Owner/Developer:
Page: 1 of 1
Project No.
Prepared By
Date
4/5/2024
USGS Quadrangle
Watershed
SITE DATA
PROJECT FREEDOM PROJECT AREA
CONSERVATION EASEMENTS
Project Acreage:
Center:
KEY PLAN
DINWIDDIE COUNTY
SUSSEX COUNTY
0
4,000
8,000
12,000
16,000
US Feet

Appendix E: VIRGINIA DEPARTMENT OF CONSERVATION AND RECREATION NATURAL HERITAGE LETTER

DCR
Department of Conservation & Recreation
CONSERVING VIRGINIA'S NATURAL & RECREATIONAL RESOURCES

Web Project ID: WEB0000022627

Client Project Number:

PROJECT INFORMATION

TITLE: Performing due diligence for Phase 1 of potential development of surface mining operation

DESCRIPTION: a future, proposed new hard rock quarry located south of Route 40 along Route 630 in Sussex County, Virginia.

EXISTING SITE CONDITIONS: forested, mixed use silvicultural, agriculture

QUADRANGLES: Stony Creek, Cherry Hill

COUNTIES: Dinwiddie, Sussex

Latitude/Longitude (DMS): 36° 56' 16.3686" N / 77° 29' 53.8170" W

Acreage: 56 acres

Comments:

Instream Activity: No - Instream Work Not Required

Major Ground Disturbing Activities: Ground disturbance associated with any slope of 3:1 or greater within the project boundary; Mining operations including dewatering activities; Tree removal (timber harvest) with heavy machinery

Minor Ground Disturbing Activities: Hand Digging; Manual tree removal with chainsaw

REQUESTOR INFORMATION

Priority: N

Tier Level: Tier I

Tax ID:

Contact Name: Phillip Bailey

Company Name: Dewberry

Address: 4805 Lake Brook Drive Suite 200

City: Glen Allen

State: VA

Zip: 23060

Phone: 8042053361

Fax:

Email: pbailey@dewberry.com

Conservation Site	Site Type	Brank	Acreage	Listed Species Presence	Essential Conservation Site?
Natural Heritage Screening Features Intersecting Project Boundary					

Intersecting Predictive Models
Predictive Model Results

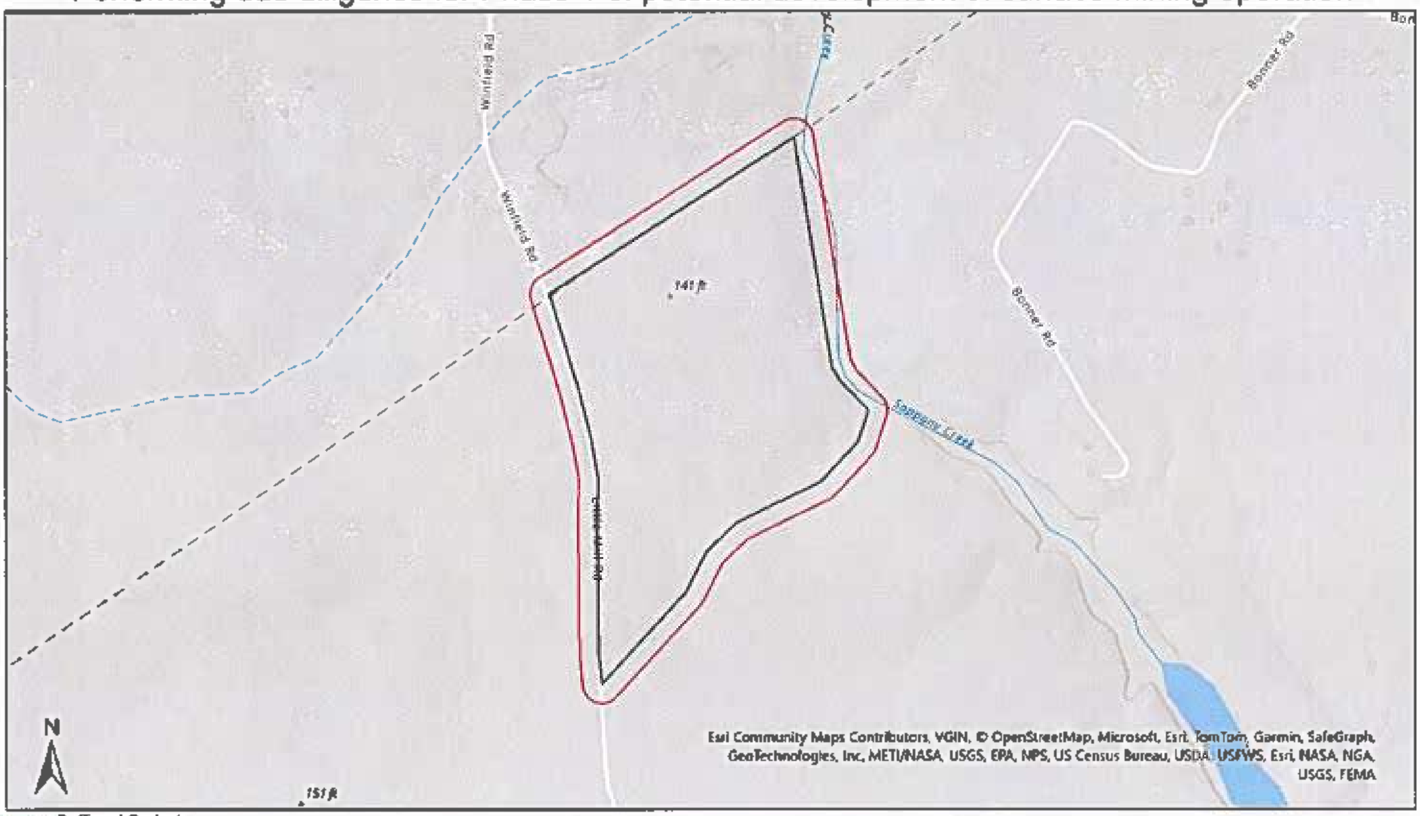
ECOLOGICAL CORES In addition, the proposed project will impact an Ecological Core(s) C4 as identified in the Virginia Natural Landscape Assessment (https://www.dcr.virginia.gov/natural-heritage/vaconvisvnla). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: https://vanhde.org/content/map.

Ecological Cores are areas of at least 100 acres of continuous interior, natural cover that provide habitat for a wide range of species, from interior-dependent forest species to habitat generalists, as well as species that utilize marsh, dune, and beach habitats. Interior core areas begin 100 meters inside core edges and continue to the deepest parts of cores. Cores also provide the natural, economic, and quality of life benefits of open space, recreation, thermal moderation, water quality (including drinking water recharge and protection, and erosion prevention), and air quality (including sequestration of carbon, absorption of gaseous pollutants, and production of oxygen). Cores are ranked from C1 to C5 (C5 being the least significant) using nine prioritization criteria, including the habitats of natural heritage resources they contain.

Impacts to cores occur when their natural cover is partially or completely converted permanently to developed land uses. Habitat conversion to development causes reductions in ecosystem processes, native biodiversity, and habitat quality due to habitat loss; less viable plant and animal populations; increased predation; and increased introduction and establishment of invasive species.

DCR recommends avoidance of impacts to cores. When avoidance cannot be achieved, DCR recommends minimizing the area of impacts overall and concentrating the impacted area at the edges of cores, so that the most interior remains intact.

Performing due diligence for Phase 1 of potential development of surface mining operation



Buffered Project Boundary

Project Boundary

0 0.07 0.15 0.3 Miles

Scale: 1:7,994

Quads: Cherry Hill; Stony Creek

Counties: Dinwiddie; Sussex

Company: Dewberry

Lat/Long: 365616 / -772953

Natural Heritage Resources

Your Criteria

Watershed (8 digit HUC): 03010201 - Nottoway River

Subwatershed (12 digit HUC): CU24 - (Lower) Sappony Creek-Rocky Branch

Search Run: 4/4/2024 11:38:14 AM
Result Summary

Total Species returned: 10

Total Communities returned: 1

Click scientific names below to go to NatureServe report.

Click column headings for an explanation of species and community ranks.

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Nottoway								
(Lower) Sappony Creek-Rocky Branch								
FISH								
Roanoke Logperch	Percina rex	Percina rex	G1G2	S1S2	LE	LE	21	N
TERRESTRIAL NATURAL COMMUNITY								
Coastal Plain Seasonal Buttonbush Pond	Cephalanthus occidentalis - (Decodon verticillatus) / Kellochloa verrucosa - Dulichium arundinaceum - Persicaria hydropiperoides - (Juncus repens) Shrub Herbaceous Vegetation	Cephalanthus occidentalis - (Decodon verticillatus) / Kellochloa verrucosa - Dulichium arundinaceum - Persicaria hydropiperoides - (Juncus repens) Shrub Herb	G3?	S2	None	None	5	N
VASCULAR PLANTS								
Golden Colicroot	Aletris aurea	Aletris aurea	G5	S1	None	None	11	N
Cuthbert's Turtlehead	Chelone cuthbertii	Chelone cuthbertii	G3	S2	None	None	34	N
Virginia Thistle	Cirsium virginianum	Cirsium virginianum	G3	S2	None	None	23	N

Common Name/Natural Community	Scientific Name	Scientific Name Linked	Global Conservation Status Rank	State Conservation Status Rank	Federal Legal Status	State Legal Status	Statewide Occurrences	Virginia Coastal Zone
Hairy St. John's-wort	Hypericum setosum	Hypericum setosum	G4G5	S1S2	None	None	16	N
Rafinesque's seedbox	Ludwigia hirtella	Ludwigia hirtella	G5	S2	None	None	22	N
Small's Purslane	Portulaca smallii	Portulaca smallii	G3	S1	None	None	6	N
Small bunched beaksedge	Rhynchospora cephalantha var. attenuata	Rhynchospora cephalantha var. attenuata	G5T3?	S1	None	None	7	N
Yellow Pitcher plant	Sarracenia flava	Sarracenia flava	G5?	S1	None	None	21	N
Curtiss' yellow-eyed grass	Xyris curtissii	Xyris curtissii	G5T5	S1	None	None	5	N

Note: On-line queries provide basic information from DCR's databases at the time of the request. They are NOT to be substituted for a project review or for on-site surveys required for environmental assessments of specific project areas.

For Additional Information on locations of Natural Heritage Resources please submit an information request.

To Contribute Information on locations of natural heritage resources, please fill out and submit a rare species sighting form.

COMMONWEALTH of VIRGINIA

DEPARTMENT OF CONSERVATION AND RECREATION

The project mapped as part of this report has been searched against the Department of Conservation and Recreation's Biotics Data System for occurrences of natural heritage resources in the vicinity of the area indicated for this project. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in Biotics, natural heritage resources have not been documented within the submitted project boundary including a 100 foot buffer. In addition, the project area does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

Any absence of data may indicate that the project area has not been surveyed, rather than confirm that the area lacks additional natural heritage resources. New and updated information is continually added to Biotics. Please revisit this website or contact DCR for an update on this natural heritage information if a significant amount of time passes (DCR recommends no more than six months) before it is utilized.

The Virginia Department of Wildlife Resources maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters, that may contain information not documented in the Natural Heritage Data Explorer. Their database may be accessed from https://services.dwr.virginia.gov/fwis/ or contact Amy Martin (804-367-2211 or amy.martin@dwr.virginia.gov).

Thank you for submitting your project to the Virginia Department of Conservation and Recreation's Natural Heritage Data Explorer Web Service. Based on the preliminary screening results for this project, no further correspondence will be sent from this office. Should you have any questions or concerns about this report, the Data Explorer, or other Virginia Natural Heritage Program services, please contact the Natural Heritage Project Review Unit at 804-371-2708.

CHANEY ENTERPRISES PROJECT FREEDOM QUARRY SITE

TRAFFIC IMPACT ANALYSIS

MARCH 2024

SUBMITTED BY
Dewberry Engineers Inc.
8401 Arlington Boulevard
Fairfax, Virginia 22031-4666
703-849-0100

SUBMITTED TO
Chaney Enterprises

Table of Contents

Introduction and Background Information

Project Location and Description

Chaney Enterprises is in the process of re-zoning the subject property for use as a new hard rock quarry. This site is located on approximately 311 acres of land as identified on Tax Map Parcel 564-A-1 in the land records of Sussex County, Virginia. The parcel is located south of State Route 40 (McKenney Highway) along State Route 630 (Little Mill Road). The majority of the site is forested and appears to be managed silvicultural. The study area for the site is located in two different counties and VDOT Districts, Dinwiddie County (VDOT Richmond District) and Sussex County (VDOT Hampton Roads District). **Figure 1** shows the location of the site. A preliminary concept plan for the proposed site is provided in **Appendix A**.

Figure 1: Proposed Project Location Map

Study Area

The study area encompasses two intersections: (1) The proposed site access point and (2) the existing intersection of Route 40 and Route 630. The existing intersection of Route 40 and Route 630 functions as a T-intersection with a stop-control on the minor approach (northbound approach). This existing intersection does not have turn lanes. The proposed site access intersection is positioned approximately 0.4 miles south of the Route 40 and Route 630 intersection as shown in **Figure 2** and **Figure 3**. This proposed site entrance is directly accessible from Route 630, as shown in **Figure 4**. There are no identified non-existent transportation improvements assumed in the analysis. Non-existent transportation improvements refer to improvements outside of the study area that would affect travel patterns near the proposed site.

Figure 2: Route 630 approaching Route 40

Figure 3: Route 40 approaching Route 630

Figure 4: Proposed Site Access Location on Route 630

Existing Roadway Network

Route 40 is a primary route classified as a minor arterial, with a two-lane roadway and one lane in each direction. Route 40 runs from east to west in the Stony Creek Area and Rural Area of Sussex County, Virginia and is considered a key route for access to I-95 and I-85. Route 40 has an Average Annual Daily Traffic (AADT) of 1,200 vehicles according to 2022 VDOT Traffic Data, 15% heavy vehicles, and a 55 MPH speed limit. Route 630 is a secondary route classified as a minor collector, with a two-lane roadway and one lane of travel in each direction (each lane is approximately 10'). Route 630 runs in the north-south direction in the Rural Area of Sussex County, Virginia. Route 630 has an AADT of 297 vehicles according to 2022 VDOT Traffic Data, and 5% heavy vehicles. **Figure 5** displays a diagram of the existing roadway network.

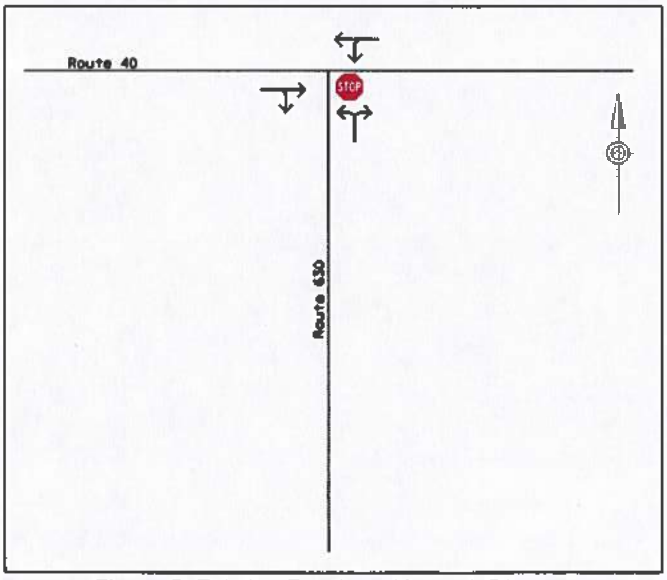


Figure 5: Existing Roadway Network Diagram

Analysis of Existing Conditions

Traffic Data Collection

The traffic data collection within the study area was performed by Quality Counts, LLC and includes turning movement counts (TMC) at the Route 40 and Route 630 intersection. This T-intersection currently operates with a stop control for the northbound movement; eastbound and westbound operate as free flow. TMCs were performed on Tuesday, January 23, 2024 during peak hour periods between 6:30AM to 9:30AM and 2:30PM to 5:30PM. Data collection was also collected on Tuesday, January 23, 2024 and Wednesday, January 24, 2024 at two roadway segments that included 48-hour midweek volume, class, and speed counts. The FHWA Classes' volume and percentage of vehicles for Route 40 and Route 630 are provided below, as well as the average speed. FHWA Classes I, 2, and 3 consists of motorcycles, passenger cars, and four tire, single unit vehicles. FHWA Classes 4 and 5 consists of buses and two axle, six tire, single unit vehicles. FHWA Classes 6 through 13 consists of three or more axle single unit vehicles, and four or more axle trailer trucks. Additional traffic data is provided in **Appendix B**.

Route 40 between Route 630 and Route 626:
Average Speed: 58 MPH
FHWA Classes 1-3: 906 (68%)
FHWA Classes 4-5: 242 (18.1%)
FHWA Classes 6-13: 173 (13%)
Not Classified: 12 (0.9%)

Route 630 between Rocky Branch Road and Route 40:
Average Speed: 45 MPH
FHWA Classes 1-3: 192 (71.6%)
FHWA Classes 4-5: 54 (20.1%)
FHWA Classes 6-13: 21 (7.6%)
Not Classified: 2 (0.6%)

Dewberry and Quality Counts, LLC collaborated to set up the sequence of counts in the traffic data collection program. Dewberry reviewed the data collection performed by Quality Counts, LLC for anomalies and then processed the data to summarize the peak hour volumes. The TMC data showed that the morning peak hour occurred from 7:45AM to 8:45AM and the evening peak hour occurred from 4:15PM to 5:15PM. The AM and PM peak hour volumes are shown in **Figure 6** below with Route 40 as the eastbound and westbound approaches and Route 630 as the northbound approach.

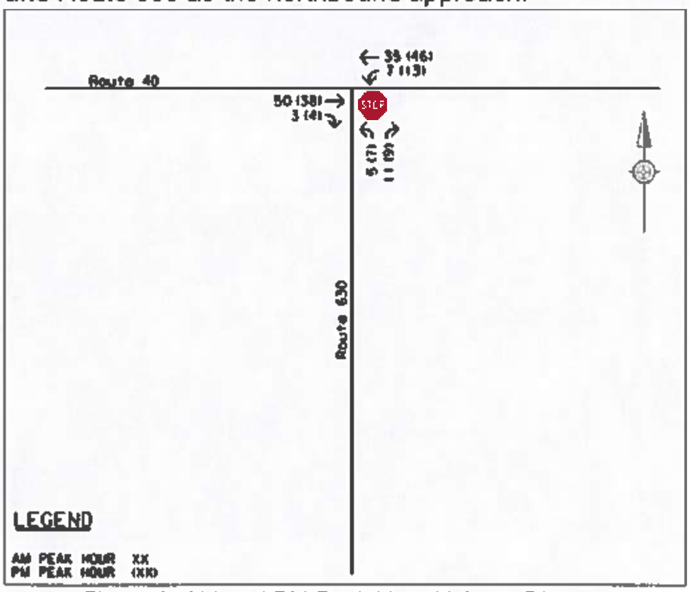


Figure 6: AM and PM Peak Hour Volume Diagram

Existing Conditions Analysis

Synchro Version 11 was used to analyze the AM and PM peak hour (Existing Conditions) volumes at the Route 40 and Route 630 intersection. **Table 1** displays the Existing Conditions analysis with a Level of Service (LOS) A for the minor approach stop controlled intersection during both the AM and PM peak hours with minimal queue lengths. The Synchro operations reports are provided in **Appendix C**. There are no walking, bike, or transit activity within the study area.

Table 1: Route 40 & Route 630 Existing Conditions Intersection Analysis Results (AM and PM Peak Hour)

Intersection	Movement	AM Peak Hour					PM Peak Hour				
		Control Delay (sec)	LOS	Overall Intersection Delay (sec)	LOS	95th Percentile Queue (ft)	Control Delay (sec)	LOS	Overall Intersection Delay (sec)	LOS	95th Percentile Queue (ft)
Route 40 & Route 630	EB	0.0	A	1.8	A	0	0.0	A	2.1	A	0
	WB	1.3	A			0	1.7	A			1
	NB	9.0	A			2	8.9	A			2

Crash History

Crash history data for the study area, including the Route 40 and Route 630 intersection and the site access intersection, was collected from 2017 to 2023 utilizing the Virginia Crash Map database. Crashes were located within 500-feet of the Route 40 and Route 630 intersection in each direction and the proposed site access intersection. As shown in **Figure 7**, there were only two crashes that occurred since 2017, with one crash involving a collision with a deer and another crash classified as a fixed object – off road collision. Notably, both crashes occurred during off-peak periods throughout the day and neither crash was related to the intersections within the study area.

Figure 7: Crash Diagram (2017-2023)

Analysis of Future Conditions Without Development

Forecasted Future Traffic Volumes

It was determined that the proposed site would be constructed and operational in 2025. To forecast future traffic volumes, historical Average Annual Daily Traffic (AADT) from 2013 through 2022, published by VDOT, were referenced for Route 40 and Route 630. Route 40, located in Dinwiddie County, has exhibited minimal volume change over the last ten years, as shown in **Table 2**. There was a drop in volume for Route 40 in 2017 and 2020, however, volume has increased since 2020 and remained the same in both 2021 and 2022. Similarly, Route 630 in Sussex County exhibits a comparable trend of volume change, with a drop in volume in 2017 and 2018 and an increase in volume in 2021 and 2022. Based on data collected, the average percentage for the Annual Average Daily Traffic for years 2013 to 2022 is 0.29% for Route 40 and 1.12% for Route 630. Therefore, a 1% growth rate has been assumed for future years for both Route 40 and Route 630. **Figure 8** provides the AM and PM peak hour volumes for 2025 without the proposed site in place.

Table 2: Historical Average Annual Daily Traffic (AADT) for Route 40 and Route 630

Year	Route 40 AADT	Percent Change	Route 630 AADT	Percent Change
2022	1201	0%	297	6%
2021	1200	9%	280	17%
2020	1100	-8%	240	9%
2019	1200	0%	220	5%
2018	1200	0%	210	-9%
2017	1200	-14%	230	-18%
2016	1400	8%	280	0%
2015	1300	0%	280	0%
2014	1300	8%	280	0%
2013	1200		280	
Average Growth Rate		0.29%		1.12%
Selected Growth Rate		1.0%		1.0%

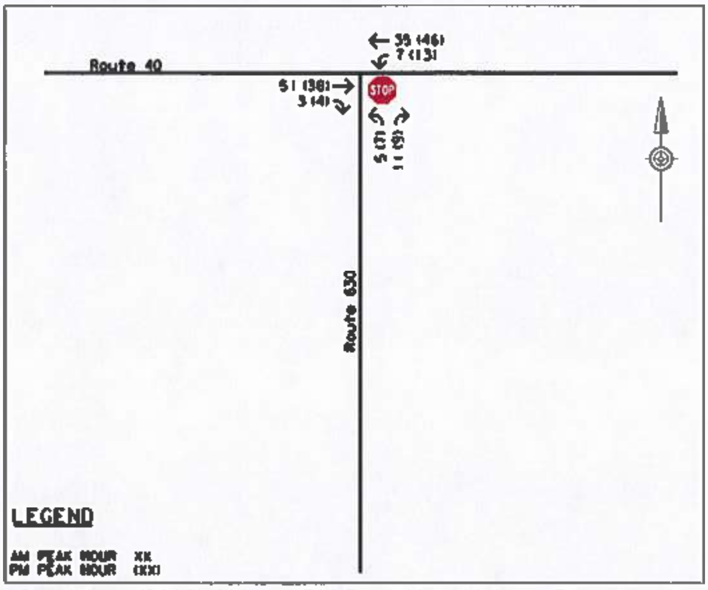


Figure 8: Future Conditions (2025) AM and PM Peak Hour Volume Diagram without Development

Future Conditions Analysis Without Development

Synchro 11 software using HCM methodology was utilized to conduct analysis for the AM and PM peak hours for the Future Conditions (No Build) 2025 without the proposed site in place. Phase 1 of the hard rock quarry site is expected to be operational in the 3rd Quarter of 2025. The results for the No Build 2025 without the proposed site in place are tabulated in **Table 3** on the following page with a Level of Service (LOS) A for the minor approach stop-controlled intersection during both the AM and PM peak hours with minimal queue lengths. The Synchro operations reports are provided in **Appendix C**. There are no planned programs by Dinwiddie County or Sussex County that would produce walking, bike, or transit trips within the study area for the Future Conditions analysis.

Table 3: Route 40 & Route 630 No Build 2025 Intersection Analysis Results (AM and PM Peak Hour)

Intersection	Movement	No Build 2025 AM Peak Hour					No Build 2025 PM Peak Hour				
		Control Delay (sec)	LOS	Overall Intersection Delay (sec)	LOS	95th Percentile Queue (ft)	Control Delay (sec)	LOS	Overall Delay (sec)	LOS	95th Percentile Queue (ft)
Route 40 & Route 630	EB	0	A	1.8	A	0	0	A	2.1	A	0
	WB	1.3	A			0	1.7	A			1
	NB	9.0	A			2	9.0	A			2

Site Trip Generation and Distribution

The ITE Trip Generation Manual 11th Edition, does not contain trip generation information for Quarry sites. The proposed site is expected to generate 300 daily trips based on existing sites of similar purpose and size with the hours of operation from 7AM to 3PM. With direct access to/from I-95 and I-85, the assumption is that the expected daily trips will access the proposed site from Route 630 and will originate from Route 40 (eastbound and westbound). The peak hour volume for the site is expected to be 60 vehicles (20% of the expected daily trips). This assumption was based on an even distribution of trips across the 8 hours of operation for the proposed site totaling 12% of the expected daily trips, with a further applied increase in trips for the peak hour to total 20% of the expected daily trips. An assumption was made that the 60 vehicle trips will generate 50% in the eastbound direction and 50% in the westbound direction of Route 40, as shown in **Figure 9**. This assumption was based on the VDOT published traffic data for 2022 that lists a Directional Factor of 0.54. The Directional Factor is an estimate of the portion of the traffic volume traveling in the peak direction during the peak hour. For example, a Directional Factor of 0.50 means traffic volumes are approximately equal in both directions. Mixed-use developments do not exist within the study area, and the proposed site will not produce pass-by trip reductions. **Figure 10** provides the AM and PM peak hour Opening Year volumes for 2025 with the proposed site in place.

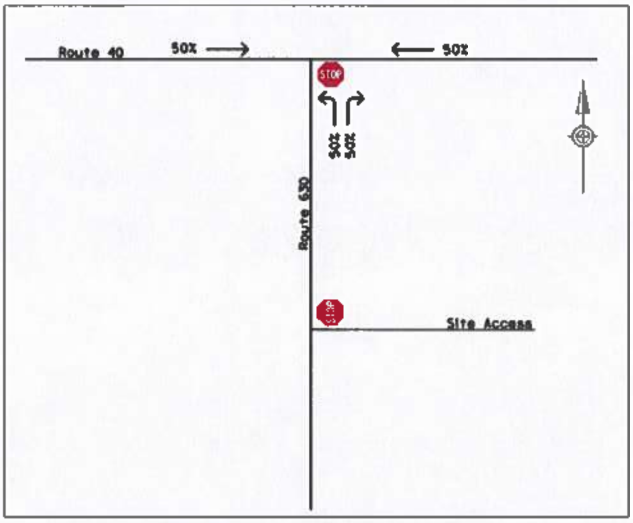


Figure 9: Trip Distribution on Route 40 and Route 630 for the Proposed Site

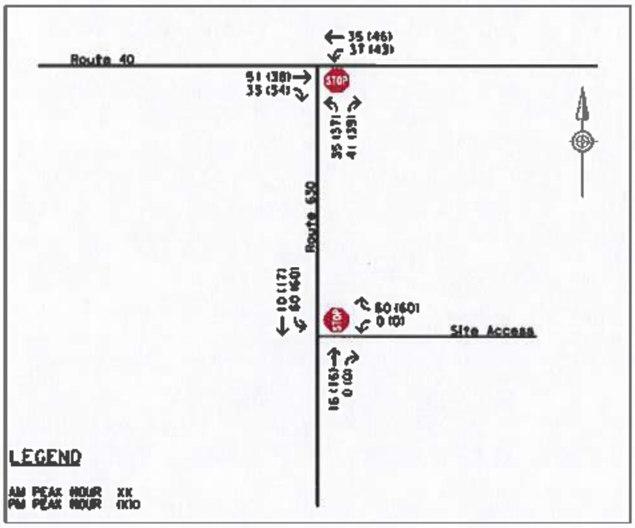


Figure 10: Opening Year Conditions (2025) AM and PM Peak Hour Volume Diagram with Development

Analysis of Future Conditions with Development

Opening Year Conditions Analysis (2025)

Synchro Version 11 was used to analyze the Opening Year Conditions (2025) with the hard rock quarry site in place for the AM and PM peak hour at the Route 40 and Route 630 intersection and Route 630 and proposed site access intersection. **Table 4** displays the Opening Year Conditions (2025) with a LOS A for both intersections during both the AM and PM peak hours with minimal queue lengths. The Synchro operations reports are provided in **Appendix C**. There is no walking, bike, or transit trips expected to occur within the study area once the proposed site is in place.

Table 4: Route 40 & Route 630 Opening Year Conditions (2025) Intersection Analysis Results (AM and PM Peak Hour)

Location	Movement	Opening Year Conditions 2025 AM Peak Hour					Opening Year Conditions 2025 PM Peak Hour				
		Control Delay (sec)	LOS	Overall Intersection Delay (sec)	LOS	95th Percentile Queue (ft)	Control Delay (sec)	LOS	Overall Intersection Delay (sec)	LOS	95th Percentile Queue (ft)
Route 40 & Route 630	EB	0.0	A	5.0	A	0	0.0	A	5.0	A	0
	WB	4.5	A			3	4.1	A			3
	NB	11.0	B			12	10.8	B			10
Route 630 & Proposed Site Access	WB	9.7	A	7.4	A	6	9.7	A	7.1	A	6
	NB	0.0	A			0	0.0	A			0
	SB	7.2	A			5	6.6	A			5

Future Year Conditions Analysis (2031)

Per the *VDOT Administrative Guidelines for the Traffic Impact Analysis Regulations 24VAC30-155*, analysis of Future Year Conditions with development must be included at build-out or six years after start, whichever is later. Opening Year Conditions analysis for 2025 was provided in the previous section of this Report. Future Year Conditions analysis for 2031 (6 years after start) was analyzed for the AM and PM peak hour at the Route 40 and Route 630 intersection and the Route 630 and proposed site access intersection. Traffic volumes were grown by 1% each year from the No Build 2025 volumes. The site trip generation and distribution in 2031 remained the same as in 2025 since the facility footprint will remain the same. The Future Year Conditions (2031) with development AM and PM peak hour volumes are shown in **Figure 11**.

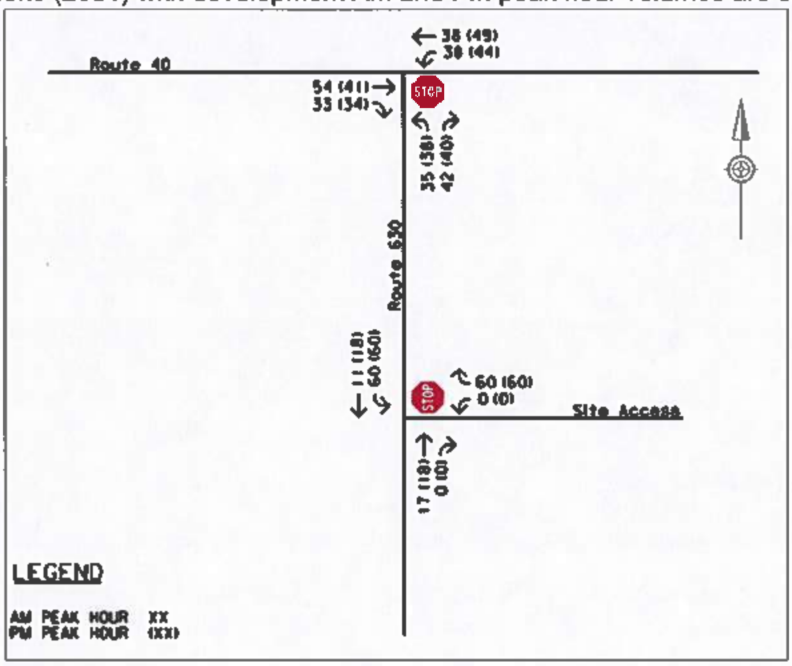


Figure 11: Future Year Conditions (2031) AM and PM Peak Hour Volume Diagram with Development

Table 5 displays the Future Year Conditions (2031) analysis with LOS A for both intersections during the AM and PM peak hours with minimal queue lengths. The Synchro operations reports are provided in **Appendix C**. There are no walking, bike, or transit trips expected to occur within the study area in 2031.

Table 5: Route 40 & Route 630 Future Year Conditions (2031) With Development Intersection Analysis Results (AM and PM Peak Hour)

Location	Movement	Future Year Conditions 2031 AM Peak Hour					Future Year Conditions 2031 PM Peak Hour				
		Control Delay (sec)	LOS	Overall Intersection Delay (sec)	LOS	95th Percentile Queue (ft)	Control Delay (sec)	LOS	Overall Intersection Delay (sec)	LOS	95th Percentile Queue (ft)
Route 40 & Route 630	EB	0.0	A	5.0	A	0	0.0	A	5.0	A	0
	WB	4.4	A			3	4.1	A			3
	NB	11.1	B			12	10.9	B			11
Route 630 & Proposed Site Access	WB	9.7	A	7.4	A	6	9.7	A	7.0	A	6
	NB	0.0	A			0	0.0	A			0
	SB	7.1	A			5	6.5	A			5

Recommended Improvements

Turn Lane Warrant Analysis

In accordance with the VDOT Road Design Manual, outlined in Appendix F Access Management and Design Standards for Entrances and Intersections, it has been determined that the proposed site traffic volumes do not necessitate the need for the addition of turn lanes. This conclusion is drawn from the consistently low traffic volumes observed in both Existing Conditions and the projected traffic for Opening Year 2025 and Future Year 2031. Even with the incorporation of volumes from the proposed site, the overall volumes remain below the established threshold for turn lane warrants. **Figure 12** and **Figure 13** visually depict that left turn lane storages and right turn lane storages all consistently fall below the specified thresholds. Even though turn lanes are not warranted on Route 40 or Route 630, it is recommended to widen the Route 40 and Route 630 intersection limits, as necessary, to accommodate heavy vehicle maneuvers. Also, it is recommended to install intersection and/or truck warning signs along Route 40.

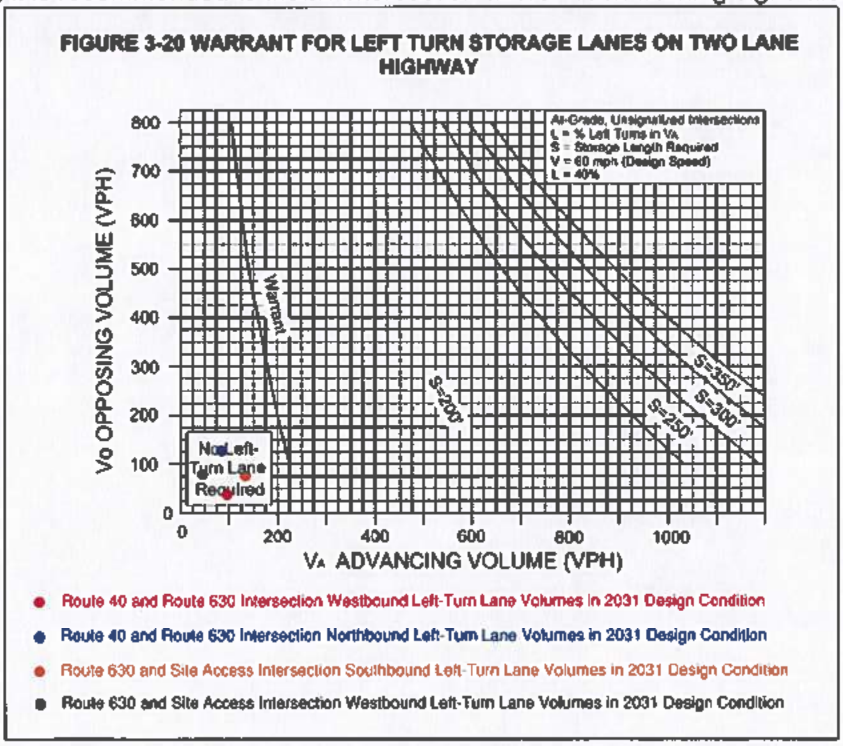


Figure 12: Warrants for Left Turn Storage Lanes (2-Lane Highway)

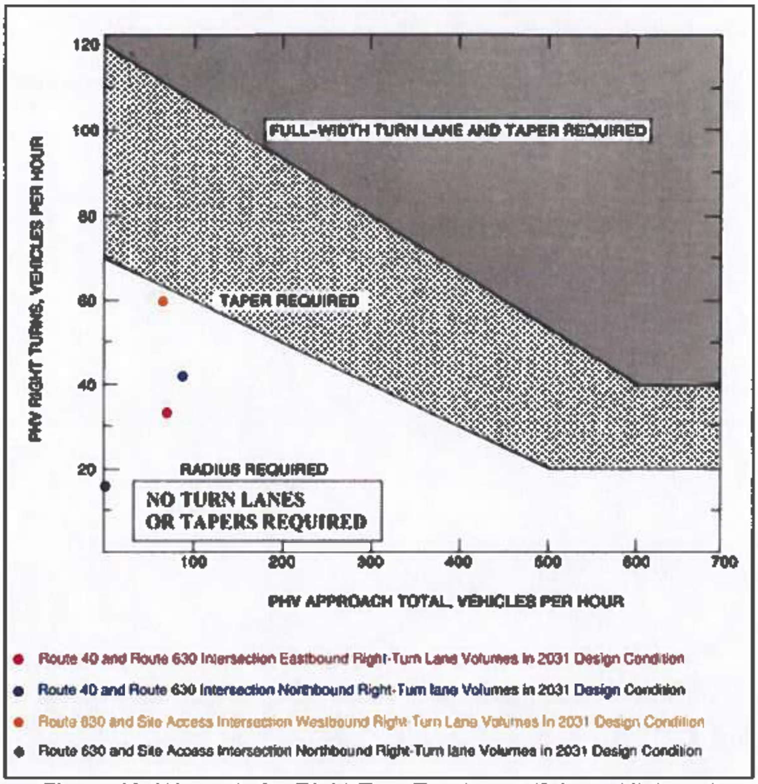


Figure 13: Warrants for Right Turn Treatment (2-Lane Highway)

There is a no-passing zone that begins approximately 330' east of the intersection of Route 40 and Route 630 that indicates no-passing is allowed when traveling in the eastbound direction. The no-passing zone continues for approximately 800' in the eastbound direction on Route 40, then transitions to double solid yellow lines to indicate no-passing is allowed in either direction. There is also a no-passing zone that begins approximately 900' west of the intersection of Route 40 and Route 630 that indicates no-passing is allowed when traveling in the westbound direction. It is recommended to incorporate passing restrictions (double solid yellow lines) along Route 40 within the limits of the intersection with Route 630 due to the increase in turning volumes and since the proposed site traffic is anticipated to consist of a high percentage of trucks.

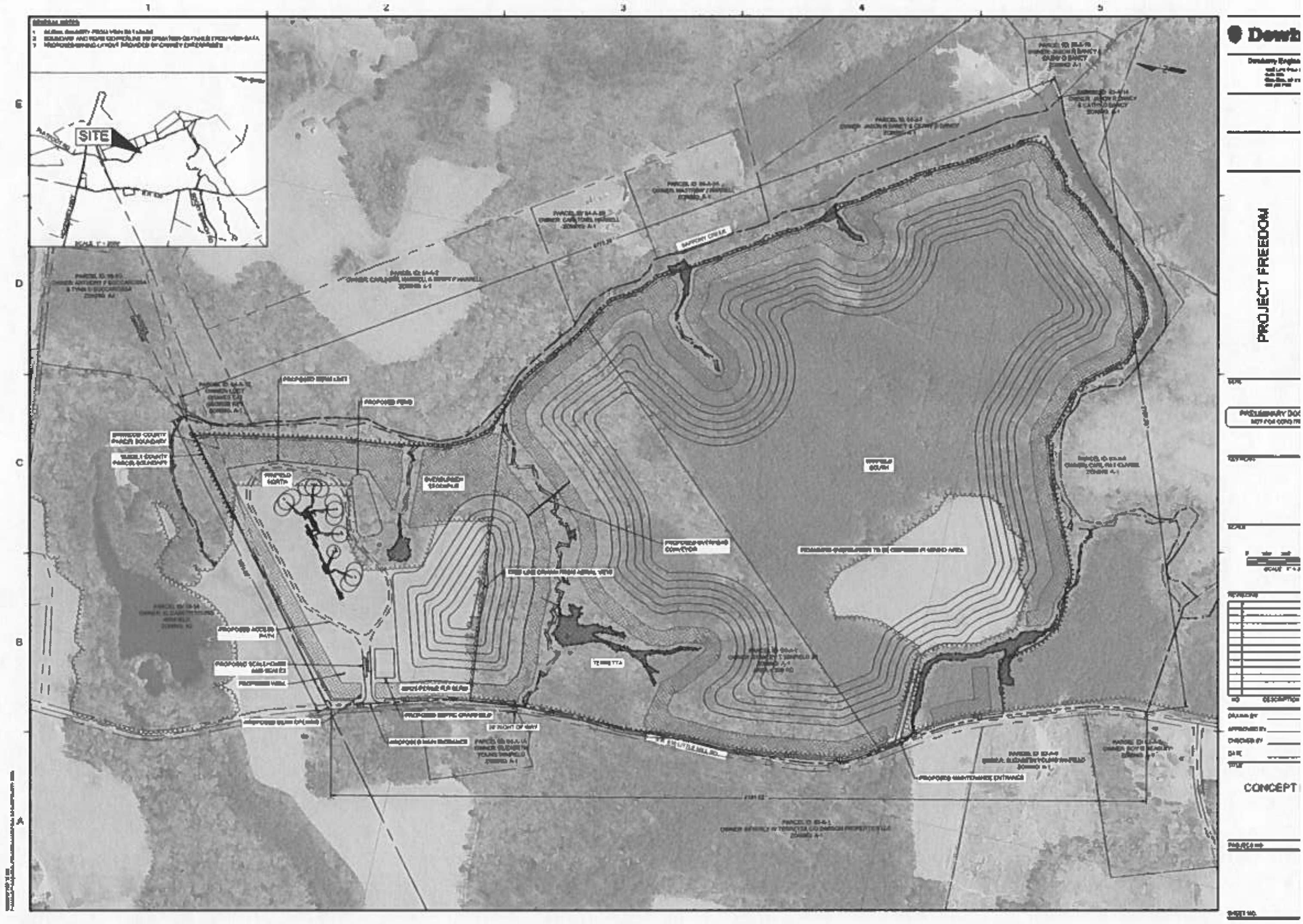
Conclusion and Recommendations

The Traffic Impact Analysis has been prepared for a new hard rock quarry located on approximately 311 acres of land in Sussex County, Virginia. The proposed site access is located approximately 0.40 miles south of the Route 40 and Route 630 intersection. The study area for the proposed site is located in two different counties and VDOT Districts, Dinwiddie County (VDOT Richmond District) and Sussex County (VDOT Hampton Roads District). An intersection capacity analysis was completed for the Route 40 and Route 630 intersection as well as the proposed site access intersection displaying overall intersection LOS A for Opening Year Conditions 2025 and Future Year Conditions 2031. With the incorporation of the identified improvements listed below, the proposed site would not result in any adverse traffic impacts to the surrounding roadway network. The recommendations are as follows:

- Widen the Route 40 and Route 630 intersection limits, as necessary, to accommodate heavy vehicle maneuvers.
- Install intersection and/or truck warning signs along Route 40.
- Incorporate passing restrictions (double solid yellow lines) along Route 40 within the limits of the intersection with Route 630 due to the increase in turning volumes and since the proposed site traffic is anticipated to consist of a high percentage of trucks.

Appendix A

Site Plan


SITE
PROJECT FREEDOM

Appendix B

Traffic Data

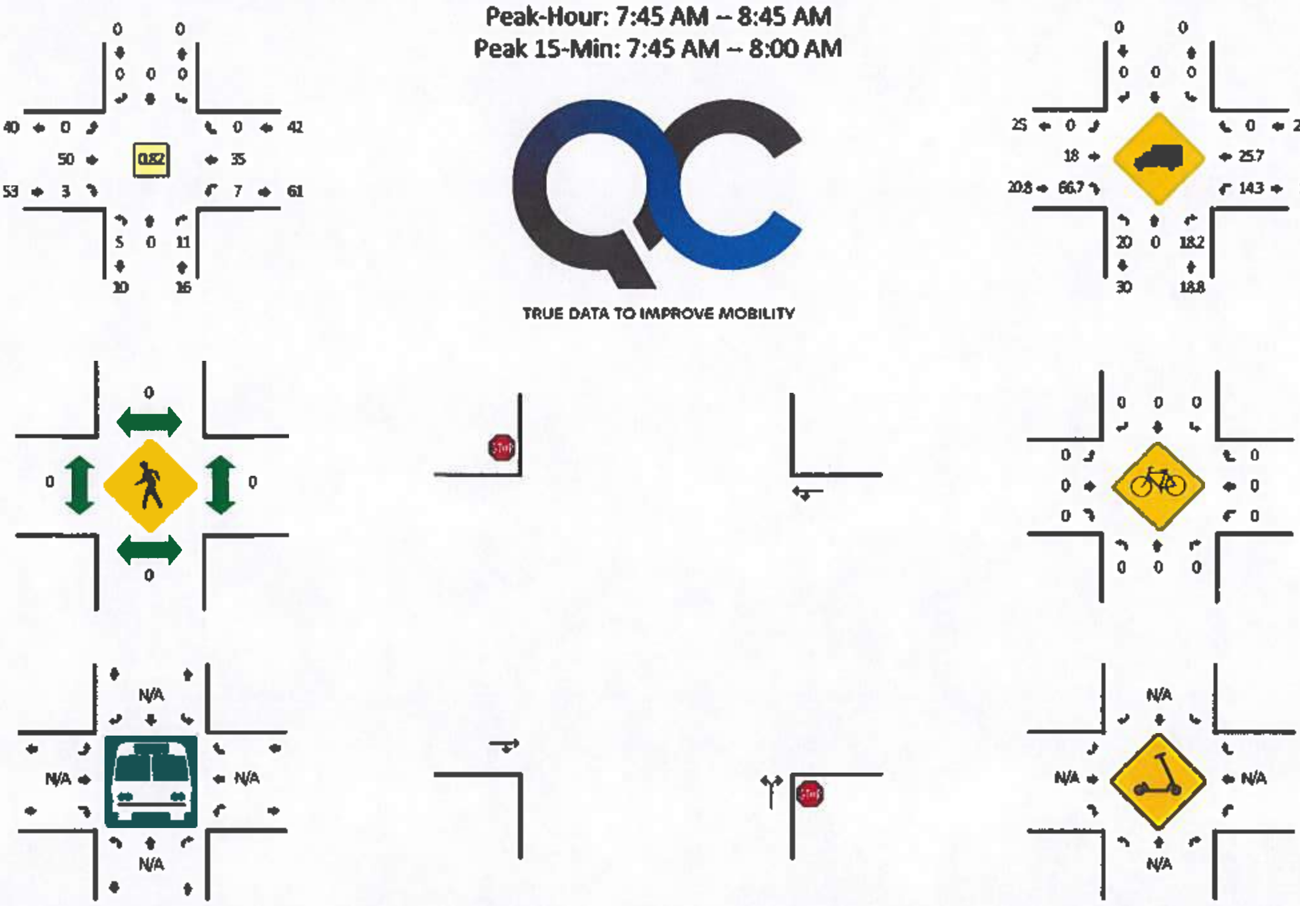
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Rte 630 -- Rte 40
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448501
DATE: Tue, Jan 23 2024

Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 7:45 AM -- 8:00 AM



15-Min Count Period Beginning At	Rte 630 (Northbound)				Rte 630 (Southbound)				Rte 40 (Eastbound)				Rte 40 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	0	0	0	0	0	0	0	0	4	4	0	0	5	0	0	13	
6:45 AM	0	0	0	0	0	0	0	0	0	5	1	0	0	3	0	0	9	
7:00 AM	1	0	4	0	0	0	0	0	0	13	1	0	0	6	0	0	25	
7:15 AM	3	0	4	0	0	0	0	0	0	11	2	0	3	0	0	0	23	70
7:30 AM	0	0	1	0	0	0	0	0	0	8	0	0	0	16	0	0	25	82
7:45 AM	1	0	3	0	0	0	0	0	0	17	1	0	3	9	0	0	34	107
8:00 AM	3	0	5	0	0	0	0	0	0	8	0	0	2	8	0	0	26	108
8:15 AM	0	0	1	0	0	0	0	0	0	11	1	0	0	9	0	0	22	107
8:30 AM	1	0	2	0	0	0	0	0	0	14	1	0	2	9	0	0	29	111
8:45 AM	0	0	0	0	0	0	0	0	0	8	0	0	0	3	0	0	11	88
9:00 AM	1	0	0	0	0	0	0	0	0	8	0	0	4	10	0	0	23	85
9:15 AM	0	0	3	0	0	0	0	0	0	12	1	0	2	9	0	0	27	90

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	12	0	0	0	0	0	0	68	4	0	12	36	0	0	136
Heavy Trucks	4	0	0		0	0	0		0	12	0		0	16	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/30/2024 2:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

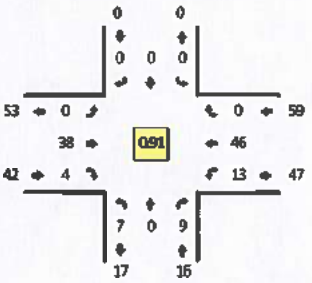
Method for determining peak hour: Total Entering Volume

LOCATION: Rte 630 -- Rte 40

CITY/STATE: Dinwiddie, VA

QC JOB #: 16448502

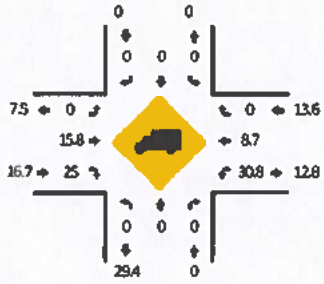
DATE: Tue, Jan 23 2024

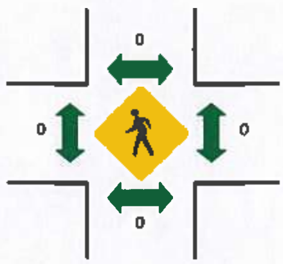


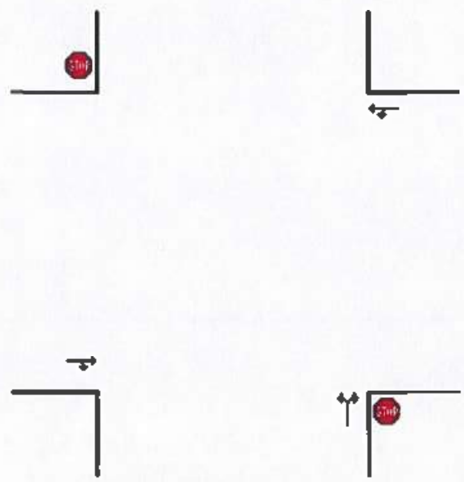
Peak-Hour: 4:15 PM -- 5:15 PM

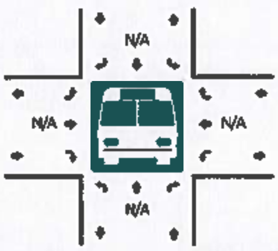
Peak 15-Min: 4:15 PM -- 4:30 PM

TRUE DATA TO IMPROVE MOBILITY









15-Min Count Period Beginning At	Rte 630 (Northbound)				Rte 630 (Southbound)				Rte 40 (Eastbound)				Rte 40 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:30 PM	0	0	2	0	0	0	0	0	0	2	0	0	1	14	0	0	19	
2:45 PM	2	0	5	0	0	0	0	0	0	7	2	0	3	17	0	0	36	
3:00 PM	0	0	2	0	0	0	0	0	0	13	0	0	1	13	0	0	29	
3:15 PM	0	0	0	0	0	0	0	0	0	12	0	0	4	11	0	0	27	111
3:30 PM	0	0	1	0	0	0	0	0	0	9	1	0	2	11	0	0	24	116
3:45 PM	0	0	1	0	0	0	0	0	0	15	0	0	2	6	0	0	24	104
4:00 PM	3	0	1	0	0	0	0	0	0	14	1	0	0	10	0	0	29	104
4:15 PM	4	0	1	0	0	0	0	0	0	10	1	0	6	10	0	0	32	109
4:30 PM	1	0	3	0	0	0	0	0	0	7	1	0	3	11	0	0	26	111
4:45 PM	1	0	3	0	0	0	0	0	0	8	1	0	1	13	0	0	27	114
5:00 PM	1	0	2	0	0	0	0	0	0	13	1	0	3	12	0	0	32	117
5:15 PM	3	0	1	0	0	0	0	0	0	2	2	0	2	16	0	0	26	111

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	4	0	0	0	0	0	0	40	4	0	24	40	0	0	128
Heavy Trucks	0	0	0		0	0	0		0	8	4		8	0	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 1/30/2024 2:07 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of report: Tube Count - Speed Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — **QC JOB #:** 16448503

SPECIFIC LOCATION: — **DIRECTION:** NB

CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	36-45	2
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
04:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
05:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	51-60	1
06:00 AM	0	0	0	0	1	0	1	1	0	0	0	0	0	0	3	41-50	2
07:00 AM	0	0	0	1	0	1	3	3	2	0	0	0	0	0	10	41-50	6
08:00 AM	0	0	0	0	0	1	2	1	1	0	0	0	0	0	5	41-50	3
09:00 AM	0	0	0	1	1	2	4	1	0	0	0	0	0	0	9	36-45	6
10:00 AM	2	0	0	0	1	0	2	2	0	0	0	0	0	0	7	41-50	4
11:00 AM	0	0	0	0	0	1	2	1	2	0	0	0	0	0	6	41-50	3
12:00 PM	0	0	0	1	2	2	0	1	1	0	0	0	0	0	7	31-40	4
01:00 PM	0	0	0	0	1	1	1	1	2	0	0	0	0	0	6	46-55	3
02:00 PM	0	0	0	0	1	2	6	5	1	0	0	0	0	0	15	41-50	11
03:00 PM	0	0	0	0	0	5	2	2	0	0	0	0	0	0	9	36-45	7
04:00 PM	0	0	0	1	3	2	3	3	1	0	0	0	0	0	13	41-50	6
05:00 PM	0	0	0	1	0	2	6	7	0	0	0	0	0	0	16	41-50	13
06:00 PM	0	0	0	0	2	3	6	5	1	0	0	0	0	0	17	41-50	11
07:00 PM	0	0	0	0	0	1	4	1	0	0	0	0	0	0	6	40-49	5
08:00 PM	0	0	0	0	0	0	2	0	1	0	0	0	0	0	3	36-45	2
09:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
11:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
Day Total	2	0	0	5	12	23	46	36	13	1	0	0	0	0	138	41-50	82
Percent	1.4%	0%	0%	3.6%	8.7%	16.7%	33.3%	26.1%	9.4%	0.7%	0%	0%	0%	0%			

	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
AM Peak	10:00 AM	12:00 AM	12:00 AM	7:00 AM	6:00 AM	9:00 AM	9:00 AM	7:00 AM	7:00 AM	5:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM
Volume	2	0	0	1	1	2	4	3	2	1	0	0	0	0	10
PM Peak	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM	3:00 PM	2:00 PM	5:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	6:00 PM
Volume	0	0	0	1	3	5	6	7	2	0	0	0	0	0	17

Comments:

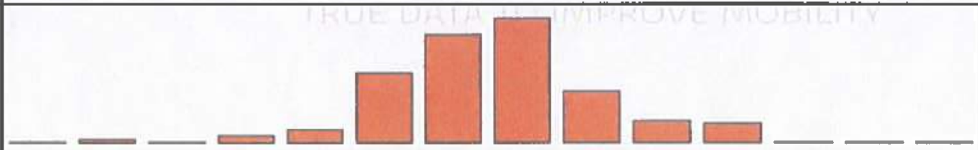
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 | **QC JOB #:** 16448503
SPECIFIC LOCATION: | **DIRECTION:** NB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 24 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	36-45	2
01:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
04:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
06:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
07:00 AM	0	0	0	0	0	1	3	2	3	0	0	0	0	0	9	41-50	5
08:00 AM	0	0	0	0	0	0	1	3	0	1	0	0	0	0	5	41-50	4
09:00 AM	0	0	0	0	0	1	3	1	1	0	0	0	0	0	6	38-47	4
10:00 AM	0	0	0	0	0	0	3	2	0	0	0	0	0	0	5	41-50	5
11:00 AM	0	0	0	0	0	4	2	4	1	0	0	0	0	0	11	36-45	6
12:00 PM	0	0	0	0	0	2	0	1	1	2	1	0	0	0	7	56-65	3
01:00 PM	0	0	0	0	1	0	2	1	1	1	0	0	0	0	6	41-50	3
02:00 PM	0	0	0	0	0	0	5	3	2	0	0	0	0	0	10	41-50	8
03:00 PM	0	1	0	0	0	0	1	4	0	0	0	0	0	0	6	41-50	5
04:00 PM	0	0	0	1	2	3	4	5	2	1	1	0	0	0	19	41-50	9
05:00 PM	0	0	0	0	0	3	4	6	2	2	0	0	0	0	17	41-50	10
06:00 PM	0	0	0	0	1	2	2	1	0	0	3	0	0	0	9	36-45	4
07:00 PM	0	0	0	0	0	0	2	3	1	0	0	0	0	0	6	41-50	5
08:00 PM	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	46-55	2
09:00 PM	0	0	0	0	0	4	1	0	0	0	1	0	0	0	6	36-45	5
10:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
11:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31-40	1
Day Total	0	1	0	2	4	22	34	39	16	7	6	0	0	0	131	41-50	73
Percent	0%	0.8%	0%	1.5%	3.1%	16.8%	26%	29.8%	12.2%	5.3%	4.6%	0%	0%	0%			
AM Peak	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	11:00 AM	7:00 AM	11:00 AM	7:00 AM	8:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	11:00 AM		
Volume	0	0	0	0	0	4	3	4	3	1	0	0	0	0	11		
PM Peak	12:00 PM	3:00 PM	12:00 PM	4:00 PM	4:00 PM	9:00 PM	2:00 PM	5:00 PM	2:00 PM	12:00 PM	6:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM		
Volume	0	1	0	1	2	4	5	6	2	2	3	0	0	0	19		



Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448503
DIRECTION: NB
DATE: Jan 23 2024 - Jan 24 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total Percent	2 0.7%	1 0.4%	0 0%	7 2.6%	16 5.9%	45 16.7%	80 29.7%	75 27.9%	29 10.8%	8 3%	6 2.2%	0 0%	0 0%	0 0%	269	41-50	155
Cumulative Percent	0.7%	1.1%	1.1%	3.7%	9.7%	26.4%	56.1%	84%	94.8%	97.8%	100%	100%	100%	100%			

ADT
134

85th Percentile: 50 MPH
Mean Speed(Average): 43 MPH
Median: 43 MPH
Mode: 43 MPH

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — **QC JOB #:** 16448503
SPECIFIC LOCATION: — **DIRECTION:** NB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
06:00 AM	0	1	1	0	1	0	0	0	0	0	0	0	0	0	3
07:00 AM	0	4	3	1	2	0	0	0	0	0	0	0	0	0	10
08:00 AM	0	1	0	0	2	1	0	1	0	0	0	0	0	0	5
09:00 AM	0	4	1	1	0	0	0	1	2	0	0	0	0	0	9
10:00 AM	0	2	2	0	0	1	0	0	0	0	0	0	0	2	7
11:00 AM	0	3	1	0	1	0	0	1	0	0	0	0	0	0	6
12:00 PM	0	3	1	0	2	0	0	0	1	0	0	0	0	0	7
01:00 PM	0	2	2	0	1	0	0	1	0	0	0	0	0	0	6
02:00 PM	0	7	3	1	4	0	0	0	0	0	0	0	0	0	15
03:00 PM	0	5	2	0	2	0	0	0	0	0	0	0	0	0	9
04:00 PM	0	3	3	1	3	0	0	1	2	0	0	0	0	0	13
05:00 PM	0	7	5	1	1	1	0	0	1	0	0	0	0	0	16
06:00 PM	0	10	4	1	2	0	0	0	0	0	0	0	0	0	17
07:00 PM	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
08:00 PM	0	1	1	1	0	0	0	0	0	0	0	0	0	0	3
09:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	0	63	31	7	21	3	0	5	6	0	0	0	0	2	138
Percent	0%	45.7%	22.5%	5.1%	15.2%	2.2%	0%	3.6%	4.3%	0%	0%	0%	0%	1.4%	

ADT
138

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
AM Peak	12:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	8:00 AM	12:00 AM	8:00 AM	9:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	10:00 AM	7:00 AM
Volume	0	4	3	1	2	1	0	1	2	0	0	0	0	2	10
PM Peak	12:00 PM	6:00 PM	5:00 PM	2:00 PM	2:00 PM	5:00 PM	12:00 PM	1:00 PM	4:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	6:00 PM
Volume	0	10	5	1	4	1	0	1	2	0	0	0	0	0	17

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — QC JOB #: 16448503

SPECIFIC LOCATION: — DIRECTION: NB

CITY/STATE: Dinwiddie, VA — DATE: Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
01:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:00 AM	0	3	1	1	4	0	0	0	0	0	0	0	0	0	9
08:00 AM	0	4	0	0	1	0	0	0	0	0	0	0	0	0	5
09:00 AM	0	1	2	1	2	0	0	0	0	0	0	0	0	0	6
10:00 AM	0	2	0	1	1	0	0	1	0	0	0	0	0	0	5
11:00 AM	0	5	4	0	1	1	0	0	0	0	0	0	0	0	11
12:00 PM	0	1	2	1	3	0	0	0	0	0	0	0	0	0	7
01:00 PM	0	2	2	0	1	0	0	1	0	0	0	0	0	0	6
02:00 PM	0	4	3	1	2	0	0	0	0	0	0	0	0	0	10
03:00 PM	0	3	3	0	0	0	0	0	0	0	0	0	0	0	6
04:00 PM	0	11	3	2	1	1	0	1	0	0	0	0	0	0	19
05:00 PM	0	9	2	1	5	0	0	0	0	0	0	0	0	0	17
06:00 PM	0	6	1	0	1	1	0	0	0	0	0	0	0	0	9
07:00 PM	0	3	2	0	1	0	0	0	0	0	0	0	0	0	6
08:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
09:00 PM	0	5	0	0	1	0	0	0	0	0	0	0	0	0	6
10:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	0	63	29	9	24	3	0	3	0	0	0	0	0	0	131
Percent	0%	48.1%	22.1%	6.9%	18.3%	2.3%	0%	2.3%	0%	0%	0%	0%	0%	0%	
ADT 131															
AM Peak	12:00 AM	11:00 AM	11:00 AM	7:00 AM	7:00 AM	11:00 AM	12:00 AM	10:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	11:00 AM
Volume	0	5	4	1	4	1	0	1	0	0	0	0	0	0	11
PM Peak	12:00 PM	4:00 PM	2:00 PM	4:00 PM	5:00 PM	4:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM
Volume	0	11	3	2	5	1	0	1	0	0	0	0	0	0	19

Comments:

Report generated on 1/29/2024 12:57 PM

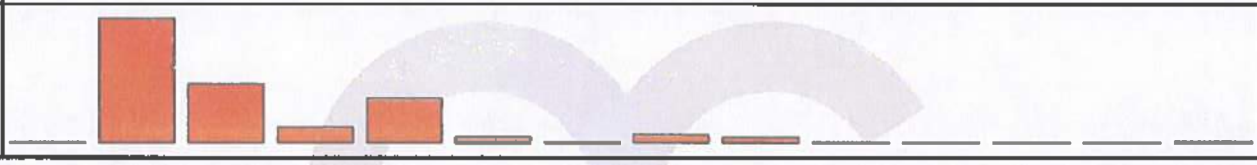
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — **QC JOB #:** 16448503
SPECIFIC LOCATION: — **DIRECTION:** NB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Grand Total	0	126	60	16	45	6	0	8	6	0	0	0	0	2	269
Percent	0%	46.8%	22.3%	5.9%	16.7%	2.2%	0%	3%	2.2%	0%	0%	0%	0%	0.7%	
ADT 134															



Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

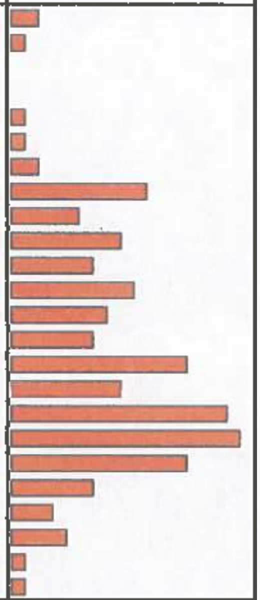
Type of report: Tube Count - Volume Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — **QC JOB #:** 16448503

SPECIFIC LOCATION: — **DIRECTION:** NB

CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Mon	Tue 23 Jan 24	Wed 24 Jan 24	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		2	2			2			2	
01:00 AM		0	1			1			1	
02:00 AM		0	0			0			0	
03:00 AM		0	0			0			0	
04:00 AM		1	1			1			1	
05:00 AM		1	0			1			1	
06:00 AM		3	1			2			2	
07:00 AM		10	9			10			10	
08:00 AM		5	5			5			5	
09:00 AM		9	6			8			8	
10:00 AM		7	5			6			6	
11:00 AM		6	11			9			9	
12:00 PM		7	7			7			7	
01:00 PM		6	6			6			6	
02:00 PM		15	10			13			13	
03:00 PM		9	6			8			8	
04:00 PM		13	19			16			16	
05:00 PM		16	17			17			17	
06:00 PM		17	9			13			13	
07:00 PM		6	6			6			6	
08:00 PM		3	2			3			3	
09:00 PM		1	6			4			4	
10:00 PM		0	1			1			1	
11:00 PM		1	1			1			1	
Day Total		138	131			140			140	
% Weekday Average		98.6%	93.6%							
% Week Average		98.6%	93.6%			100%				
AM Peak Volume		7:00 AM 10	11:00 AM 11			7:00 AM 10			7:00 AM 10	
PM Peak Volume		6:00 PM 17	4:00 PM 19			5:00 PM 17			5:00 PM 17	



Comments:

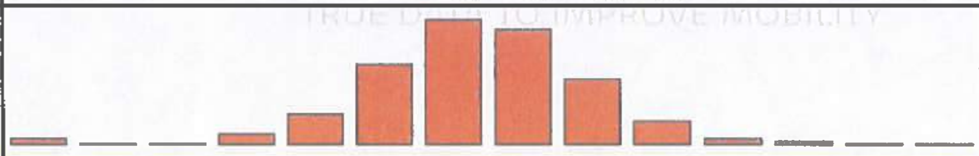
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — **QC JOB #:** 16448503
SPECIFIC LOCATION: — **DIRECTION:** NB, SB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	36-45	2
01:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
02:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31-40	1
03:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
04:00 AM	0	0	0	0	0	0	0	1	2	1	0	0	0	0	4	51-60	3
05:00 AM	0	0	0	0	0	2	0	2	2	2	0	0	0	0	8	46-55	4
06:00 AM	0	0	0	0	1	1	1	3	0	1	0	0	0	0	7	41-50	4
07:00 AM	0	0	0	1	1	2	4	7	5	3	1	2	0	0	26	46-55	12
08:00 AM	0	0	0	0	1	1	3	4	4	1	0	0	0	0	14	46-55	8
09:00 AM	0	0	0	1	2	2	7	3	2	0	0	0	0	0	17	41-50	10
10:00 AM	3	0	0	0	1	4	4	6	3	1	0	0	0	0	22	41-50	10
11:00 AM	0	0	0	0	0	3	2	2	2	0	0	0	0	0	9	36-45	5
12:00 PM	0	0	0	1	3	4	1	3	5	0	0	0	0	0	17	46-55	8
01:00 PM	0	0	0	1	2	1	5	3	3	0	0	0	0	0	15	41-50	8
02:00 PM	0	0	0	0	1	3	9	8	3	0	1	0	0	0	25	41-50	17
03:00 PM	0	0	0	0	0	5	5	2	0	0	0	0	0	0	12	36-45	10
04:00 PM	0	0	0	1	4	7	7	5	5	1	0	0	0	0	30	36-45	14
05:00 PM	0	0	0	1	0	4	11	9	0	2	0	0	0	0	27	41-50	20
06:00 PM	0	0	0	0	2	5	6	6	1	1	0	0	0	0	21	41-50	12
07:00 PM	0	0	0	0	0	1	5	1	0	0	1	0	0	0	8	39-48	6
08:00 PM	0	0	0	0	0	0	3	0	1	0	0	0	0	0	4	36-45	3
09:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	31-40	1
10:00 PM	0	0	0	0	0	1	0	0	1	1	0	0	0	0	3	51-60	2
11:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
Day Total	3	0	0	6	18	48	75	69	39	14	3	2	0	0	277	41-50	144
Percent	1.1%	0%	0%	2.2%	6.5%	17.3%	27.1%	24.9%	14.1%	5.1%	1.1%	0.7%	0%	0%			
AM Peak	10:00 AM	12:00 AM	12:00 AM	7:00 AM	9:00 AM	10:00 AM	9:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	12:00 AM	12:00 AM	7:00 AM		
Volume	3	0	0	1	2	4	7	7	5	3	1	2	0	0	26		
PM Peak	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM	4:00 PM	5:00 PM	5:00 PM	12:00 PM	5:00 PM	2:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM		
Volume	0	0	0	1	4	7	11	9	5	2	1	0	0	0	30		



Comments:

Report generated on 1/29/2024 12:58 PM

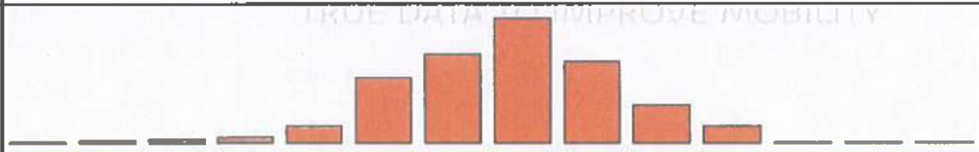
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448503
DIRECTION: NB, SB
DATE: Jan 24 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	36-45	2
01:00 AM	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	46-55	2
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
03:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
04:00 AM	0	0	0	0	0	0	0	3	1	2	0	0	0	0	6	46-55	4
05:00 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	26-35	1
06:00 AM	0	0	0	0	1	1	1	3	1	1	1	0	0	0	9	43-52	4
07:00 AM	0	0	0	0	0	1	3	9	9	5	2	0	0	0	29	46-55	18
08:00 AM	0	0	0	0	0	0	5	6	3	1	0	0	0	0	15	41-50	11
09:00 AM	0	0	0	0	0	3	4	2	4	0	0	0	0	0	13	36-45	7
10:00 AM	0	0	0	0	1	2	5	6	0	0	0	0	0	0	14	41-50	11
11:00 AM	0	0	0	0	0	6	2	5	4	0	0	0	0	0	17	46-55	9
12:00 PM	0	0	0	0	1	4	0	3	2	4	1	0	0	0	15	51-60	6
01:00 PM	0	0	0	0	1	2	5	1	4	2	0	0	0	0	15	36-45	7
02:00 PM	0	0	2	0	0	0	8	4	4	1	0	0	0	0	19	41-50	12
03:00 PM	0	1	0	0	1	2	2	8	1	0	0	0	0	0	15	41-50	10
04:00 PM	0	0	0	1	2	3	5	9	2	3	2	0	0	0	27	41-50	14
05:00 PM	0	0	0	0	0	5	5	8	6	2	0	0	0	0	26	46-55	14
06:00 PM	0	0	0	1	1	3	3	1	0	0	3	0	0	0	12	36-45	6
07:00 PM	0	0	0	0	0	0	2	3	2	0	0	0	0	0	7	43-52	5
08:00 PM	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3	46-55	2
09:00 PM	0	0	0	0	1	4	1	0	1	0	1	0	0	0	8	35-44	5
10:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
11:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31-40	1
Day Total	0	1	2	3	10	38	52	73	48	22	10	0	0	0	259	41-50	125
Percent	0%	0.4%	0.8%	1.2%	3.9%	14.7%	20.1%	28.2%	18.5%	8.5%	3.9%	0%	0%	0%			



	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total		
AM Peak	12:00 AM	12:00 AM	12:00 AM	12:00 AM	5:00 AM	11:00 AM	8:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM		
Volume	0	0	0	0	1	6	5	9	9	5	2	0	0	0	29		
PM Peak	12:00 PM	3:00 PM	2:00 PM	4:00 PM	4:00 PM	5:00 PM	2:00 PM	4:00 PM	5:00 PM	12:00 PM	6:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM		
Volume	0	1	2	1	2	5	8	9	6	4	3	0	0	0	27		

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

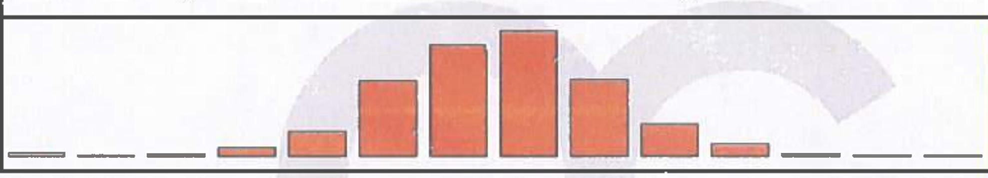
SUMMARY - Tube Count - Speed Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448503
DIRECTION: NB, SB
DATE: Jan 23 2024 - Jan 24 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total Percent	3 0.6%	1 0.2%	2 0.4%	9 1.7%	28 5.2%	86 16%	127 23.7%	142 26.5%	87 16.2%	36 6.7%	13 2.4%	2 0.4%	0 0%	0 0%	536	41-50	269
Cumulative Percent	0.6%	0.7%	1.1%	2.8%	8%	24.1%	47.8%	74.3%	90.5%	97.2%	99.6%	100%	100%	100%			

ADT 268



85th Percentile: 53 MPH
Mean Speed(Average): 45 MPH
Median: 45 MPH
Mode: 48 MPH

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 | **QC JOB #:** 16448503

SPECIFIC LOCATION: | **DIRECTION:** NB, SB

CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
01:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
03:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
05:00 AM	0	4	2	1	1	0	0	0	0	0	0	0	0	0	8
06:00 AM	0	4	1	1	1	0	0	0	0	0	0	0	0	0	7
07:00 AM	0	11	8	1	6	0	0	0	0	0	0	0	0	0	26
08:00 AM	0	3	4	0	3	1	0	3	0	0	0	0	0	0	14
09:00 AM	0	8	2	1	0	0	1	2	3	0	0	0	0	0	17
10:00 AM	0	9	6	0	1	1	0	1	1	0	0	0	0	3	22
11:00 AM	0	5	2	0	1	0	0	1	0	0	0	0	0	0	9
12:00 PM	0	6	3	0	4	0	0	2	2	0	0	0	0	0	17
01:00 PM	0	3	6	0	3	0	0	2	1	0	0	0	0	0	15
02:00 PM	0	11	9	1	4	0	0	0	0	0	0	0	0	0	25
03:00 PM	0	5	3	1	3	0	0	0	0	0	0	0	0	0	12
04:00 PM	0	12	6	1	8	0	0	1	2	0	0	0	0	0	30
05:00 PM	0	11	11	2	1	1	0	0	1	0	0	0	0	0	27
06:00 PM	0	13	5	1	2	0	0	0	0	0	0	0	0	0	21
07:00 PM	0	5	3	0	0	0	0	0	0	0	0	0	0	0	8
08:00 PM	0	1	1	1	1	0	0	0	0	0	0	0	0	0	4
09:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
10:00 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
11:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	0	122	75	11	40	3	1	12	10	0	0	0	0	3	277
Percent	0%	44%	27.1%	4%	14.4%	1.1%	0.4%	4.3%	3.6%	0%	0%	0%	0%	1.1%	
ADT 277															
AM Peak	12:00 AM	7:00 AM	7:00 AM	5:00 AM	7:00 AM	8:00 AM	9:00 AM	8:00 AM	9:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	10:00 AM	7:00 AM
Volume	0	11	8	1	6	1	1	3	3	0	0	0	0	3	26
PM Peak	12:00 PM	6:00 PM	5:00 PM	5:00 PM	4:00 PM	5:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM
Volume	0	13	11	2	8	1	0	2	2	0	0	0	0	0	30

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — **QC JOB #:** 16448503
SPECIFIC LOCATION: — **DIRECTION:** NB, SB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
01:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00 AM	0	2	2	1	0	0	0	0	1	0	0	0	0	0	6
05:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
06:00 AM	0	5	1	1	1	1	0	0	0	0	0	0	0	0	9
07:00 AM	0	12	7	1	9	0	0	0	0	0	0	0	0	0	29
08:00 AM	0	10	2	0	2	0	0	0	1	0	0	0	0	0	15
09:00 AM	0	4	3	1	3	0	0	1	1	0	0	0	0	0	13
10:00 AM	0	6	3	1	2	0	0	1	1	0	0	0	0	0	14
11:00 AM	0	7	7	0	2	1	0	0	0	0	0	0	0	0	17
12:00 PM	0	3	6	1	4	0	0	0	1	0	0	0	0	0	15
01:00 PM	0	6	4	1	3	0	0	1	0	0	0	0	0	0	15
02:00 PM	0	11	5	1	2	0	0	0	0	0	0	0	0	0	19
03:00 PM	0	8	5	1	0	1	0	0	0	0	0	0	0	0	15
04:00 PM	0	14	4	2	4	1	0	2	0	0	0	0	0	0	27
05:00 PM	0	14	4	2	6	0	0	0	0	0	0	0	0	0	26
06:00 PM	0	8	2	0	1	1	0	0	0	0	0	0	0	0	12
07:00 PM	0	4	2	0	1	0	0	0	0	0	0	0	0	0	7
08:00 PM	0	2	0	1	0	0	0	0	0	0	0	0	0	0	3
09:00 PM	0	7	0	0	1	0	0	0	0	0	0	0	0	0	8
10:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	0	127	60	15	42	5	0	5	5	0	0	0	0	0	259
Percent	0%	49%	23.2%	5.8%	16.2%	1.9%	0%	1.9%	1.9%	0%	0%	0%	0%	0%	

ADT
259

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
AM Peak	12:00 AM	7:00 AM	7:00 AM	3:00 AM	7:00 AM	6:00 AM	12:00 AM	9:00 AM	4:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM
Volume	0	12	7	1	9	1	0	1	1	0	0	0	0	0	29
PM Peak	12:00 PM	4:00 PM	12:00 PM	4:00 PM	5:00 PM	3:00 PM	12:00 PM	4:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM
Volume	0	14	6	2	6	1	0	2	1	0	0	0	0	0	27

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448503
DIRECTION: NB, SB
DATE: Jan 23 2024 - Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Grand Total	0	249	135	26	82	8	1	17	15	0	0	0	0	3	536
Percent	0%	46.5%	25.2%	4.9%	15.3%	1.5%	0.2%	3.2%	2.8%	0%	0%	0%	0%	0.6%	

ADT
268

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

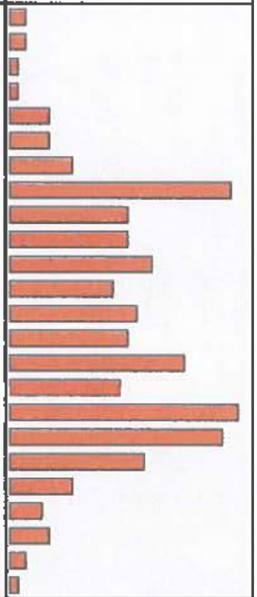
Type of report: Tube Count - Volume Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 | **QC JOB #:** 16448503

SPECIFIC LOCATION: | **DIRECTION:** NB, SB

CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Mon	Tue 23 Jan 24	Wed 24 Jan 24	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		2	2			2			2	
01:00 AM		1	2			2			2	
02:00 AM		1	0			1			1	
03:00 AM		1	1			1			1	
04:00 AM		4	6			5			5	
05:00 AM		8	2			5			5	
06:00 AM		7	9			8			8	
07:00 AM		26	29			28			28	
08:00 AM		14	15			15			15	
09:00 AM		17	13			15			15	
10:00 AM		22	14			18			18	
11:00 AM		9	17			13			13	
12:00 PM		17	15			16			16	
01:00 PM		15	15			15			15	
02:00 PM		25	19			22			22	
03:00 PM		12	15			14			14	
04:00 PM		30	27			29			29	
05:00 PM		27	26			27			27	
06:00 PM		21	12			17			17	
07:00 PM		8	7			8			8	
08:00 PM		4	3			4			4	
09:00 PM		2	8			5			5	
10:00 PM		3	1			2			2	
11:00 PM		1	1			1			1	
Day Total		277	259			273			273	
% Weekday Average		101.5%	94.9%							
% Week Average		101.5%	94.9%			100%				
AM Peak Volume		7:00 AM 26	7:00 AM 29			7:00 AM 28			7:00 AM 28	
PM Peak Volume		4:00 PM 30	4:00 PM 27			4:00 PM 29			4:00 PM 29	



Comments:

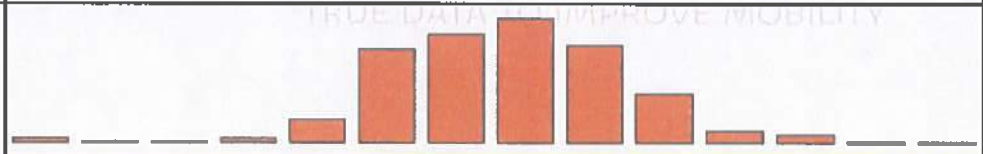
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — **QC JOB #:** 16448503
SPECIFIC LOCATION: — **DIRECTION:** SB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
01:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
02:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31-40	1
03:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
04:00 AM	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3	46-55	2
05:00 AM	0	0	0	0	0	2	0	2	2	1	0	0	0	0	7	46-55	4
06:00 AM	0	0	0	0	0	1	0	2	0	1	0	0	0	0	4	41-50	2
07:00 AM	0	0	0	0	1	1	1	4	3	3	1	2	0	0	16	46-55	7
08:00 AM	0	0	0	0	1	0	1	3	3	1	0	0	0	0	9	46-55	6
09:00 AM	0	0	0	0	1	0	3	2	2	0	0	0	0	0	8	41-50	5
10:00 AM	1	0	0	0	0	4	2	4	3	1	0	0	0	0	15	46-55	7
11:00 AM	0	0	0	0	0	2	0	1	0	0	0	0	0	0	3	31-40	2
12:00 PM	0	0	0	0	1	2	1	2	4	0	0	0	0	0	10	46-55	6
01:00 PM	0	0	0	1	1	0	4	2	1	0	0	0	0	0	9	41-50	6
02:00 PM	0	0	0	0	0	1	3	3	2	0	1	0	0	0	10	41-50	6
03:00 PM	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	36-45	3
04:00 PM	0	0	0	0	1	5	4	2	4	1	0	0	0	0	17	36-45	9
05:00 PM	0	0	0	0	0	2	5	2	0	2	0	0	0	0	11	40-49	7
06:00 PM	0	0	0	0	0	2	0	1	0	1	0	0	0	0	4	31-40	2
07:00 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	36-45	1
08:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	36-45	1
09:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31-40	1
10:00 PM	0	0	0	0	0	1	0	0	1	1	0	0	0	0	3	51-60	2
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total	1	0	0	1	6	25	29	33	26	13	3	2	0	0	139	41-50	62
Percent	0.7%	0%	0%	0.7%	4.3%	18%	20.9%	23.7%	18.7%	9.4%	2.2%	1.4%	0%	0%			



AM Peak	10:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM	10:00 AM	9:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	12:00 AM	12:00 AM	7:00 AM		
Volume	1	0	0	0	1	4	3	4	3	3	1	2	0	0	16		
PM Peak	12:00 PM	12:00 PM	12:00 PM	1:00 PM	12:00 PM	4:00 PM	5:00 PM	2:00 PM	12:00 PM	5:00 PM	2:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM		
Volume	0	0	0	1	1	5	5	3	4	2	1	0	0	0	17		

Comments:

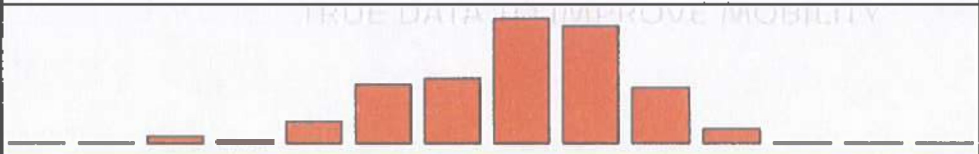
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — **QC JOB #:** 16448503
SPECIFIC LOCATION: — **DIRECTION:** SB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 24 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
01:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
03:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
04:00 AM	0	0	0	0	0	0	0	3	0	2	0	0	0	0	5	41-50	3
05:00 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	26-35	1
06:00 AM	0	0	0	0	1	1	1	2	1	1	1	0	0	0	8	46-55	3
07:00 AM	0	0	0	0	0	0	0	7	6	5	2	0	0	0	20	46-55	13
08:00 AM	0	0	0	0	0	0	4	3	3	0	0	0	0	0	10	41-50	7
09:00 AM	0	0	0	0	0	2	1	1	3	0	0	0	0	0	7	46-55	4
10:00 AM	0	0	0	0	1	2	2	4	0	0	0	0	0	0	9	41-50	6
11:00 AM	0	0	0	0	0	2	0	1	3	0	0	0	0	0	6	46-55	4
12:00 PM	0	0	0	0	1	2	0	2	1	2	0	0	0	0	8	46-55	3
01:00 PM	0	0	0	0	0	2	3	0	3	1	0	0	0	0	9	36-45	5
02:00 PM	0	0	2	0	0	0	3	1	2	1	0	0	0	0	9	41-50	4
03:00 PM	0	0	0	0	1	2	1	4	1	0	0	0	0	0	9	45-54	5
04:00 PM	0	0	0	0	0	0	1	4	0	2	1	0	0	0	8	41-50	5
05:00 PM	0	0	0	0	0	2	1	2	4	0	0	0	0	0	9	46-55	6
06:00 PM	0	0	0	1	0	1	1	0	0	0	0	0	0	0	3	36-45	2
07:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
08:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	51-60	1
09:00 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2	26-35	1
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total	0	0	2	1	6	16	18	34	32	15	4	0	0	0	128	46-55	66
Percent	0%	0%	1.6%	0.8%	4.7%	12.5%	14.1%	26.6%	25%	11.7%	3.1%	0%	0%	0%			



	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total
AM Peak	12:00 AM	12:00 AM	12:00 AM	12:00 AM	5:00 AM	9:00 AM	8:00 AM	7:00 AM	7:00 AM	7:00 AM	7:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM
Volume	0	0	0	0	1	2	4	7	6	5	2	0	0	0	20
PM Peak	12:00 PM	12:00 PM	2:00 PM	6:00 PM	12:00 PM	12:00 PM	1:00 PM	3:00 PM	5:00 PM	12:00 PM	4:00 PM	12:00 PM	12:00 PM	12:00 PM	1:00 PM
Volume	0	0	2	1	1	2	3	4	4	2	1	0	0	0	9

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

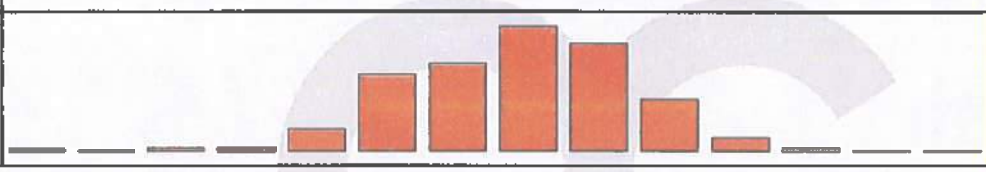
Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 **QC JOB #:** 16448503
SPECIFIC LOCATION: **DIRECTION:** SB
CITY/STATE: Dinwiddie, VA **DATE:** Jan 23 2024 - Jan 24 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total Percent	1 0.4%	0 0%	2 0.7%	2 0.7%	12 4.5%	41 15.4%	47 17.6%	67 25.1%	58 21.7%	28 10.5%	7 2.6%	2 0.7%	0 0%	0 0%	267	46-55	125
Cumulative Percent	0.4%	0.4%	1.1%	1.9%	6.4%	21.7%	39.3%	64.4%	86.1%	96.6%	99.3%	100%	100%	100%			

ADT
133



85th Percentile: 54 MPH
Mean Speed(Average): 47 MPH
Median: 47 MPH
Mode: 48 MPH

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — **QC JOB #:** 16448503
SPECIFIC LOCATION: — **DIRECTION:** SB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
03:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
05:00 AM	0	4	1	1	1	0	0	0	0	0	0	0	0	0	7
06:00 AM	0	3	0	1	0	0	0	0	0	0	0	0	0	0	4
07:00 AM	0	7	5	0	4	0	0	0	0	0	0	0	0	0	16
08:00 AM	0	2	4	0	1	0	0	2	0	0	0	0	0	0	9
09:00 AM	0	4	1	0	0	0	1	1	1	0	0	0	0	0	8
10:00 AM	0	7	4	0	1	0	0	1	1	0	0	0	0	1	15
11:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
12:00 PM	0	3	2	0	2	0	0	2	1	0	0	0	0	0	10
01:00 PM	0	1	4	0	2	0	0	1	1	0	0	0	0	0	9
02:00 PM	0	4	6	0	0	0	0	0	0	0	0	0	0	0	10
03:00 PM	0	0	1	1	1	0	0	0	0	0	0	0	0	0	3
04:00 PM	0	9	3	0	5	0	0	0	0	0	0	0	0	0	17
05:00 PM	0	4	6	1	0	0	0	0	0	0	0	0	0	0	11
06:00 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
07:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
08:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
09:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
10:00 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	59	44	4	19	0	1	7	4	0	0	0	0	1	139
Percent	0%	42.4%	31.7%	2.9%	13.7%	0%	0.7%	5%	2.9%	0%	0%	0%	0%	0.7%	
AM Peak	12:00 AM	7:00 AM	7:00 AM	5:00 AM	7:00 AM	12:00 AM	9:00 AM	8:00 AM	9:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	10:00 AM	7:00 AM
Volume	0	7	5	1	4	0	1	2	1	0	0	0	0	1	16
PM Peak	12:00 PM	4:00 PM	2:00 PM	3:00 PM	4:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM
Volume	0	9	6	1	5	0	0	2	1	0	0	0	0	0	17

ADT
139

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 — **QC JOB #:** 16448503

SPECIFIC LOCATION: — **DIRECTION:** SB

CITY/STATE: Dinwiddie, VA — **DATE:** Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:00 AM	0	1	2	1	0	0	0	0	1	0	0	0	0	0	5
05:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
06:00 AM	0	5	0	1	1	1	0	0	0	0	0	0	0	0	8
07:00 AM	0	9	6	0	5	0	0	0	0	0	0	0	0	0	20
08:00 AM	0	6	2	0	1	0	0	0	1	0	0	0	0	0	10
09:00 AM	0	3	1	0	1	0	0	1	1	0	0	0	0	0	7
10:00 AM	0	4	3	0	1	0	0	0	1	0	0	0	0	0	9
11:00 AM	0	2	3	0	1	0	0	0	0	0	0	0	0	0	6
12:00 PM	0	2	4	0	1	0	0	0	1	0	0	0	0	0	8
01:00 PM	0	4	2	1	2	0	0	0	0	0	0	0	0	0	9
02:00 PM	0	7	2	0	0	0	0	0	0	0	0	0	0	0	9
03:00 PM	0	5	2	1	0	1	0	0	0	0	0	0	0	0	9
04:00 PM	0	3	1	0	3	0	0	1	0	0	0	0	0	0	8
05:00 PM	0	5	2	1	1	0	0	0	0	0	0	0	0	0	9
06:00 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
07:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
09:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	0	64	31	6	18	2	0	2	5	0	0	0	0	0	128
Percent	0%	50%	24.2%	4.7%	14.1%	1.6%	0%	1.6%	3.9%	0%	0%	0%	0%	0%	

ADT 128

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
AM Peak	12:00 AM	7:00 AM	7:00 AM	3:00 AM	7:00 AM	6:00 AM	12:00 AM	9:00 AM	4:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM
Volume	0	9	6	1	5	1	0	1	1	0	0	0	0	0	20
PM Peak	12:00 PM	2:00 PM	12:00 PM	1:00 PM	4:00 PM	3:00 PM	12:00 PM	4:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	1:00 PM
Volume	0	7	4	1	3	1	0	1	1	0	0	0	0	0	9

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

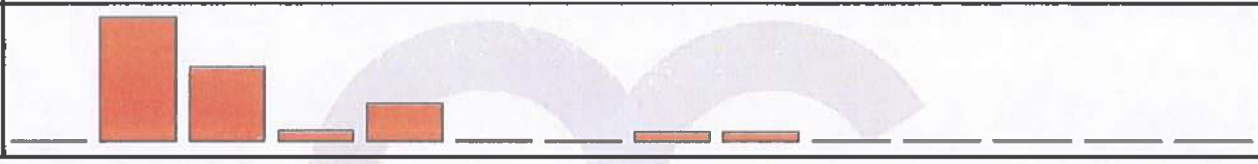
Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 | **QC JOB #:** 16448503
SPECIFIC LOCATION: | **DIRECTION:** SB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Grand Total	0	123	75	10	37	2	1	9	9	0	0	0	0	1	267
Percent	0%	46.1%	28.1%	3.7%	13.9%	0.7%	0.4%	3.4%	3.4%	0%	0%	0%	0%	0.4%	

ADT
133



Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40									QC JOB #: 16448503
SPECIFIC LOCATION:									DIRECTION: SB
CITY/STATE: Dinwiddie, VA									DATE: Jan 23 2024 - Jan 24 2024
Start Time	Mon	Tue 23 Jan 24	Wed 24 Jan 24	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		0	0			0			0	
01:00 AM		1	1			1			1	
02:00 AM		1	0			1			1	
03:00 AM		1	1			1			1	
04:00 AM		3	5			4			4	
05:00 AM		7	2			5			5	
06:00 AM		4	8			6			6	
07:00 AM		16	20			18			18	
08:00 AM		9	10			10			10	
09:00 AM		8	7			8			8	
10:00 AM		15	9			12			12	
11:00 AM		3	6			5			5	
12:00 PM		10	8			9			9	
01:00 PM		9	9			9			9	
02:00 PM		10	9			10			10	
03:00 PM		3	9			6			6	
04:00 PM		17	8			13			13	
05:00 PM		11	9			10			10	
06:00 PM		4	3			4			4	
07:00 PM		2	1			2			2	
08:00 PM		1	1			1			1	
09:00 PM		1	2			2			2	
10:00 PM		3	0			2			2	
11:00 PM		0	0			0			0	
Day Total		139	128			139			139	
% Weekday Average		100%	92.1%							
% Week Average		100%	92.1%			100%				
AM Peak Volume		7:00 AM 16	7:00 AM 20			7:00 AM 18			7:00 AM 18	
PM Peak Volume		4:00 PM 17	1:00 PM 9			4:00 PM 13			4:00 PM 13	
Comments:										

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448504
DIRECTION: EB
DATE: Jan 23 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	66-75	1
01:00 AM	0	0	0	0	0	0	1	1	1	0	1	1	0	0	5	41-50	2
02:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31-40	1
03:00 AM	0	0	0	0	0	1	0	1	1	0	0	1	0	0	4	46-55	2
04:00 AM	0	0	0	0	0	1	1	1	3	1	5	0	0	0	12	56-65	6
05:00 AM	0	0	0	0	1	0	3	1	4	5	5	4	1	0	24	56-65	10
06:00 AM	0	0	0	0	1	1	2	2	2	9	13	7	0	0	37	56-65	22
07:00 AM	0	0	0	0	0	3	4	6	3	26	13	6	2	0	63	56-65	39
08:00 AM	0	0	0	0	0	1	5	2	3	18	15	2	1	1	48	56-65	33
09:00 AM	0	0	0	0	2	1	1	4	4	17	9	5	0	0	43	56-65	26
10:00 AM	2	0	0	0	0	3	6	1	7	8	12	4	2	1	46	56-65	20
11:00 AM	1	0	0	0	0	1	0	4	5	16	1	3	1	0	32	51-60	21
12:00 PM	1	0	0	1	2	6	2	3	3	13	13	3	1	0	48	56-65	26
01:00 PM	0	0	3	0	1	2	3	1	7	18	9	0	1	0	45	56-65	27
02:00 PM	0	0	1	0	4	3	5	4	6	12	2	2	0	0	39	51-60	18
03:00 PM	1	0	0	0	0	1	2	7	8	18	15	2	0	0	54	56-65	33
04:00 PM	0	0	0	0	2	0	5	5	8	13	9	3	0	1	46	56-65	22
05:00 PM	1	0	0	0	1	3	1	4	7	9	8	1	1	0	36	56-65	17
06:00 PM	0	0	0	0	0	0	4	3	3	6	10	3	0	0	29	56-65	16
07:00 PM	0	0	0	0	0	0	2	1	4	3	4	3	0	0	17	55-64	7
08:00 PM	0	0	0	0	0	0	2	1	1	2	2	0	0	0	8	56-65	4
09:00 PM	0	0	0	0	0	0	0	0	1	5	3	0	0	0	9	56-65	8
10:00 PM	0	0	0	0	0	0	1	1	0	3	2	1	0	0	8	56-65	5
11:00 PM	0	0	0	0	0	0	1	0	2	1	2	0	1	0	7	51-60	3
Day Total	6	0	4	1	14	28	51	53	83	203	153	51	12	3	662	56-65	356
Percent	0.9%	0%	0.6%	0.2%	2.1%	4.2%	7.7%	8%	12.5%	30.7%	23.1%	7.7%	1.8%	0.5%			

	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
AM Peak	10:00 AM	12:00 AM	12:00 AM	12:00 AM	9:00 AM	7:00 AM	10:00 AM	7:00 AM	10:00 AM	7:00 AM	8:00 AM	6:00 AM	7:00 AM	8:00 AM	7:00 AM		
Volume	2	0	0	0	2	3	6	6	7	26	15	7	2	1	63		
PM Peak	12:00 PM	12:00 PM	1:00 PM	12:00 PM	2:00 PM	12:00 PM	2:00 PM	3:00 PM	3:00 PM	1:00 PM	3:00 PM	12:00 PM	12:00 PM	4:00 PM	3:00 PM		
Volume	1	0	3	1	4	6	5	7	8	18	15	3	1	1	54		

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 — **QC JOB #:** 16448504
SPECIFIC LOCATION: — **DIRECTION:** EB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 24 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	51-60	1
01:00 AM	0	0	0	0	0	0	1	0	1	0	1	0	0	0	3	36-45	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
03:00 AM	0	0	0	0	0	2	0	0	1	0	0	0	0	0	3	31-40	2
04:00 AM	0	0	0	0	0	1	4	1	2	3	2	1	1	0	15	40-49	5
05:00 AM	0	0	0	0	0	1	1	1	6	6	5	2	2	0	24	51-60	12
06:00 AM	0	0	0	0	1	2	2	3	5	11	11	2	2	0	39	56-65	22
07:00 AM	0	0	0	0	0	4	3	5	5	20	9	4	2	1	53	56-65	29
08:00 AM	0	0	0	0	0	3	1	2	6	22	22	2	0	0	58	56-65	44
09:00 AM	0	0	0	0	0	1	3	3	6	6	18	3	0	1	41	56-65	24
10:00 AM	1	0	0	0	1	3	2	2	4	12	17	7	0	0	49	56-65	29
11:00 AM	1	0	0	0	1	1	1	2	7	26	9	0	0	0	48	56-65	35
12:00 PM	0	0	0	0	1	0	3	2	10	17	11	4	0	0	48	56-65	28
01:00 PM	0	0	0	0	0	0	7	0	4	16	12	2	2	1	44	56-65	28
02:00 PM	1	0	0	0	0	0	1	7	10	14	8	0	0	0	41	51-60	24
03:00 PM	0	0	0	0	2	1	5	4	5	10	5	3	1	1	37	51-60	15
04:00 PM	0	0	0	0	0	0	2	8	3	13	16	4	0	1	47	56-65	29
05:00 PM	0	0	0	0	0	0	2	5	14	18	9	3	0	0	51	51-60	32
06:00 PM	0	0	0	0	1	0	0	3	5	5	3	2	0	0	19	51-60	10
07:00 PM	0	0	0	0	0	0	0	1	4	10	2	6	0	0	23	51-60	14
08:00 PM	0	0	0	0	0	0	0	3	3	5	2	2	0	0	15	51-60	8
09:00 PM	0	0	0	0	0	0	1	2	2	3	2	3	0	0	13	53-62	5
10:00 PM	0	0	0	0	0	0	0	0	1	3	2	1	0	0	7	56-65	5
11:00 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	3	56-65	3
Day Total	3	0	0	0	7	19	39	54	104	222	168	51	10	5	682	56-65	390
Percent	0.4%	0%	0%	0%	1%	2.8%	5.7%	7.9%	15.2%	32.6%	24.6%	7.5%	1.5%	0.7%			

	1-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-999	Total
AM Peak	10:00 AM	12:00 AM	12:00 AM	12:00 AM	6:00 AM	7:00 AM	4:00 AM	7:00 AM	11:00 AM	11:00 AM	8:00 AM	10:00 AM	5:00 AM	7:00 AM	8:00 AM
Volume	1	0	0	0	1	4	4	5	7	26	22	7	2	1	58
PM Peak	2:00 PM	12:00 PM	12:00 PM	12:00 PM	3:00 PM	3:00 PM	1:00 PM	4:00 PM	5:00 PM	5:00 PM	4:00 PM	7:00 PM	1:00 PM	1:00 PM	5:00 PM
Volume	1	0	0	0	2	1	7	8	14	18	16	6	2	1	51

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

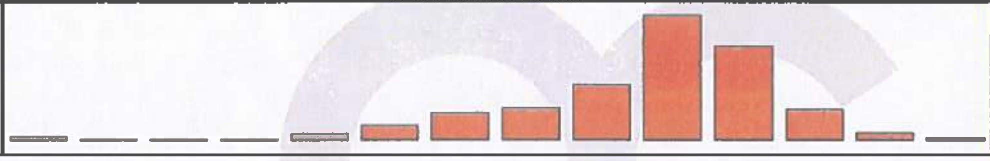
SUMMARY - Tube Count - Speed Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448504
DIRECTION: EB
DATE: Jan 23 2024 - Jan 24 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total Percent	9 0.7%	0 0%	4 0.3%	1 0.1%	21 1.6%	47 3.5%	90 6.7%	107 8%	187 13.9%	425 31.6%	321 23.9%	102 7.6%	22 1.6%	8 0.6%	1344	56-65	746
Cumulative Percent	0.7%	0.7%	1%	1%	2.6%	6.1%	12.8%	20.8%	34.7%	66.3%	90.2%	97.8%	99.4%	100%			

ADT
672



85th Percentile: 63 MPH
Mean Speed(Average): 57 MPH
Median: 57 MPH
Mode: 58 MPH

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 **QC JOB #:** 16448504

SPECIFIC LOCATION: **DIRECTION:** EB

CITY/STATE: Dinwiddie, VA **DATE:** Jan 23 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
01:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
02:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
03:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00 AM	0	5	4	0	0	0	0	0	3	0	0	0	0	0	12
05:00 AM	0	8	7	2	4	0	0	0	2	0	0	0	1	0	24
06:00 AM	0	22	7	1	4	0	0	2	1	0	0	0	0	0	37
07:00 AM	1	34	16	0	6	1	0	0	5	0	0	0	0	0	63
08:00 AM	0	24	13	4	2	0	0	1	3	1	0	0	0	0	48
09:00 AM	1	20	14	1	2	1	0	1	3	0	0	0	0	0	43
10:00 AM	0	21	9	2	7	0	0	2	3	0	0	0	0	2	46
11:00 AM	0	9	9	0	4	0	0	3	6	0	0	0	0	1	32
12:00 PM	2	18	7	2	8	3	0	2	5	0	0	0	0	1	48
01:00 PM	0	13	11	1	10	0	0	1	9	0	0	0	0	0	45
02:00 PM	1	23	9	1	4	0	0	0	1	0	0	0	0	0	39
03:00 PM	0	17	18	1	6	2	0	5	4	0	0	0	0	1	54
04:00 PM	0	24	8	1	8	0	0	0	5	0	0	0	0	0	46
05:00 PM	0	21	8	1	4	0	0	0	1	0	0	0	0	1	36
06:00 PM	0	20	4	1	4	0	0	0	0	0	0	0	0	0	29
07:00 PM	0	11	2	0	3	1	0	0	0	0	0	0	0	0	17
08:00 PM	0	4	3	1	0	0	0	0	0	0	0	0	0	0	8
09:00 PM	0	6	3	0	0	0	0	0	0	0	0	0	0	0	9
10:00 PM	0	7	0	1	0	0	0	0	0	0	0	0	0	0	8
11:00 PM	0	5	1	0	1	0	0	0	0	0	0	0	0	0	7
Day Total	5	320	155	20	78	8	0	17	51	1	0	0	1	6	662
Percent	0.8%	48.3%	23.4%	3%	11.8%	1.2%	0%	2.6%	7.7%	0.2%	0%	0%	0.2%	0.9%	
ADT 662															
AM Peak	7:00 AM	7:00 AM	7:00 AM	8:00 AM	10:00 AM	7:00 AM	12:00 AM	11:00 AM	11:00 AM	8:00 AM	12:00 AM	12:00 AM	5:00 AM	10:00 AM	7:00 AM
Volume	1	34	16	4	7	1	0	3	6	1	0	0	1	2	63
PM Peak	12:00 PM	4:00 PM	3:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	3:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	3:00 PM
Volume	2	24	18	2	10	3	0	5	9	0	0	0	0	1	54

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 — **QC JOB #:** 16448504
SPECIFIC LOCATION: — **DIRECTION:** EB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	3
04:00 AM	1	6	4	1	0	1	0	0	2	0	0	0	0	0	15
05:00 AM	0	6	12	0	5	0	0	0	1	0	0	0	0	0	24
06:00 AM	0	23	6	2	6	1	0	0	1	0	0	0	0	0	39
07:00 AM	0	28	14	0	5	0	0	0	5	0	0	0	1	0	53
08:00 AM	0	28	9	3	9	1	0	3	5	0	0	0	0	0	58
09:00 AM	0	11	4	9	5	1	0	1	6	4	0	0	0	0	41
10:00 AM	0	25	14	2	3	2	0	0	2	0	0	0	0	1	49
11:00 AM	0	22	11	3	5	0	0	1	5	0	0	0	0	1	48
12:00 PM	1	18	17	1	3	2	0	1	5	0	0	0	0	0	48
01:00 PM	0	25	9	2	3	0	0	1	4	0	0	0	0	0	44
02:00 PM	0	23	11	1	1	1	0	0	2	1	0	0	0	1	41
03:00 PM	0	16	9	1	6	1	0	1	3	0	0	0	0	0	37
04:00 PM	1	19	15	1	6	2	0	3	0	0	0	0	0	0	47
05:00 PM	0	29	14	0	4	0	0	1	3	0	0	0	0	0	51
06:00 PM	0	8	7	1	0	0	0	2	1	0	0	0	0	0	19
07:00 PM	0	14	7	0	1	0	0	1	0	0	0	0	0	0	23
08:00 PM	0	9	4	1	1	0	0	0	0	0	0	0	0	0	15
09:00 PM	0	10	1	1	1	0	0	0	0	0	0	0	0	0	13
10:00 PM	0	5	0	1	1	0	0	0	0	0	0	0	0	0	7
11:00 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
Day Total	3	330	172	30	65	13	0	15	45	5	0	0	1	3	682
Percent	0.4%	48.4%	25.2%	4.4%	9.5%	1.9%	0%	2.2%	6.6%	0.7%	0%	0%	0.1%	0.4%	

ADT
682

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
AM Peak	4:00 AM	7:00 AM	7:00 AM	9:00 AM	8:00 AM	10:00 AM	12:00 AM	8:00 AM	9:00 AM	9:00 AM	12:00 AM	12:00 AM	7:00 AM	10:00 AM	8:00 AM
Volume	1	28	14	9	9	2	0	3	6	4	0	0	1	1	58
PM Peak	12:00 PM	5:00 PM	12:00 PM	1:00 PM	3:00 PM	12:00 PM	12:00 PM	4:00 PM	12:00 PM	2:00 PM	12:00 PM	12:00 PM	12:00 PM	2:00 PM	5:00 PM
Volume	1	29	17	2	6	2	0	3	5	1	0	0	0	1	51

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 | **QC JOB #:** 16448504
SPECIFIC LOCATION: | **DIRECTION:** EB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Grand Total	8	650	327	50	143	21	0	32	96	6	0	0	2	9	1344
Percent	0.6%	48.4%	24.3%	3.7%	10.6%	1.6%	0%	2.4%	7.1%	0.4%	0%	0%	0.1%	0.7%	

ADT
672

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 — QC JOB #: 16448504

SPECIFIC LOCATION: — DIRECTION: EB

CITY/STATE: Dinwiddie, VA — DATE: Jan 23 2024 - Jan 24 2024

Start Time	Mon	Tue 23 Jan 24	Wed 24 Jan 24	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		1	1			1			1	
01:00 AM		5	3			4			4	
02:00 AM		1	0			1			1	
03:00 AM		4	3			4			4	
04:00 AM		12	15			14			14	
05:00 AM		24	24			24			24	
06:00 AM		37	39			38			38	
07:00 AM		63	53			58			58	
08:00 AM		48	58			53			53	
09:00 AM		43	41			42			42	
10:00 AM		46	49			48			48	
11:00 AM		32	48			40			40	
12:00 PM		48	48			48			48	
01:00 PM		45	44			45			45	
02:00 PM		39	41			40			40	
03:00 PM		54	37			46			46	
04:00 PM		46	47			47			47	
05:00 PM		36	51			44			44	
06:00 PM		29	19			24			24	
07:00 PM		17	23			20			20	
08:00 PM		8	15			12			12	
09:00 PM		9	13			11			11	
10:00 PM		8	7			8			8	
11:00 PM		7	3			5			5	
Day Total		662	682			677			677	
% Weekday Average		97.8%	100.7%							
% Week Average		97.8%	100.7%			100%				
AM Peak Volume		7:00 AM 63	8:00 AM 58			7:00 AM 58			7:00 AM 58	
PM Peak Volume		3:00 PM 54	5:00 PM 51			12:00 PM 48			12:00 PM 48	

Comments:

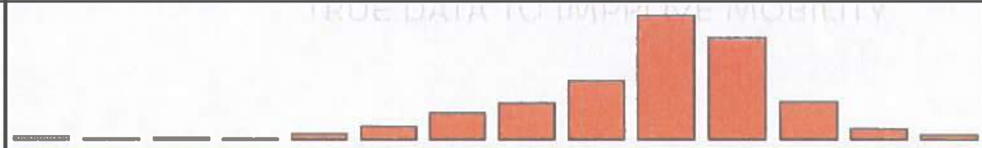
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 | **QC JOB #:** 16448504
SPECIFIC LOCATION: | **DIRECTION:** EB, WB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	2	2	0	1	1	6	56-65	4
01:00 AM	0	0	0	0	0	0	1	1	2	0	1	1	0	0	6	46-55	3
02:00 AM	0	0	0	0	0	1	0	0	0	1	1	0	0	0	3	56-65	2
03:00 AM	0	0	0	0	0	1	0	1	1	1	1	2	0	1	8	61-70	3
04:00 AM	0	0	0	0	0	1	1	1	3	4	6	1	0	0	17	56-65	10
05:00 AM	0	0	0	0	1	0	3	1	4	10	5	5	2	0	31	56-65	15
06:00 AM	0	0	0	0	1	1	4	2	2	13	18	11	1	1	54	56-65	31
07:00 AM	0	0	0	0	0	4	7	9	6	30	26	11	7	0	100	56-65	56
08:00 AM	1	0	0	0	1	2	6	4	10	29	23	4	2	1	83	56-65	52
09:00 AM	0	0	0	0	3	3	3	7	9	30	14	8	0	0	77	56-65	44
10:00 AM	3	0	0	1	0	3	7	3	12	21	18	9	3	1	81	56-65	39
11:00 AM	1	0	0	0	0	1	0	9	12	29	19	7	1	0	79	56-65	48
12:00 PM	1	0	0	1	2	6	4	7	12	23	23	6	3	0	88	56-65	46
01:00 PM	0	0	3	0	1	4	5	5	13	34	16	4	1	0	86	56-65	50
02:00 PM	0	0	1	0	4	3	8	11	19	24	20	7	0	1	98	56-65	44
03:00 PM	1	0	0	0	1	1	5	10	15	36	27	9	0	1	106	56-65	63
04:00 PM	2	0	0	0	2	2	12	10	13	28	22	8	0	1	100	56-65	50
05:00 PM	1	0	0	0	1	6	1	10	23	26	23	7	4	1	103	51-60	49
06:00 PM	0	0	0	0	0	0	8	10	13	13	19	7	3	2	75	56-65	32
07:00 PM	0	0	0	0	0	0	2	5	7	8	12	7	2	3	46	56-65	20
08:00 PM	0	0	0	0	0	1	3	3	3	4	6	1	1	1	23	56-65	10
09:00 PM	0	0	0	0	0	0	0	1	2	6	4	0	2	0	15	56-65	10
10:00 PM	0	0	0	0	0	0	1	1	0	12	6	1	0	0	21	56-65	18
11:00 PM	0	0	0	0	0	0	3	1	2	1	4	2	1	0	14	61-70	6
Day Total	10	0	4	2	17	40	84	112	183	385	316	118	34	15	1320	56-65	701
Percent	0.8%	0%	0.3%	0.2%	1.3%	3%	6.4%	8.5%	13.9%	29.2%	23.9%	8.9%	2.6%	1.1%			



	1-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-999	Total		
AM Peak	10:00 AM	12:00 AM	12:00 AM	10:00 AM	9:00 AM	7:00 AM	7:00 AM	7:00 AM	10:00 AM	7:00 AM	7:00 AM	6:00 AM	7:00 AM	12:00 AM	7:00 AM		
Volume	3	0	0	1	3	4	7	9	12	30	26	11	7	1	100		
PM Peak	4:00 PM	12:00 PM	1:00 PM	12:00 PM	2:00 PM	12:00 PM	4:00 PM	2:00 PM	5:00 PM	3:00 PM	3:00 PM	3:00 PM	5:00 PM	7:00 PM	3:00 PM		
Volume	2	0	3	1	4	6	12	11	23	36	27	9	4	3	106		

Comments:

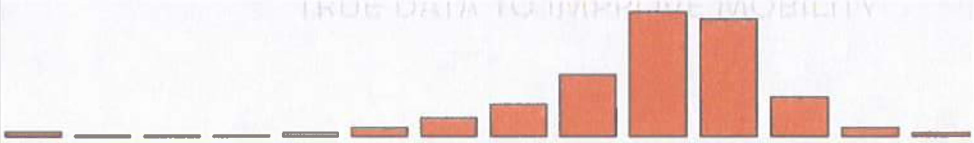
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 | **QC JOB #:** 16448504
SPECIFIC LOCATION: | **DIRECTION:** EB, WB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 24 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	1	1	0	0	1	1	0	0	0	4	36-45	2
01:00 AM	0	0	0	0	0	0	1	0	2	0	1	1	0	0	5	46-55	2
02:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	56-65	2
03:00 AM	0	0	0	0	0	2	0	0	1	1	1	1	0	0	6	31-40	2
04:00 AM	0	0	0	0	0	1	4	1	3	4	4	1	1	0	19	56-65	8
05:00 AM	0	0	0	0	0	2	1	1	7	8	7	2	2	0	30	56-65	15
06:00 AM	0	0	0	0	1	2	2	3	7	17	20	4	4	0	60	56-65	37
07:00 AM	0	0	0	0	0	5	5	7	9	33	16	8	4	1	88	56-65	49
08:00 AM	0	0	0	0	0	3	1	2	11	33	31	6	0	0	87	56-65	64
09:00 AM	1	0	0	0	0	1	4	6	9	17	25	6	0	1	70	56-65	42
10:00 AM	2	1	1	0	1	3	3	6	6	19	29	9	2	0	82	56-65	48
11:00 AM	2	0	0	0	1	2	4	7	15	46	22	3	0	0	102	56-65	68
12:00 PM	1	0	0	0	1	0	3	4	16	25	22	6	3	0	81	56-65	47
01:00 PM	1	0	0	0	0	0	7	2	8	33	24	5	3	1	84	56-65	57
02:00 PM	2	0	0	0	0	0	1	13	17	29	22	7	1	0	92	56-65	51
03:00 PM	1	0	0	1	2	1	5	7	17	19	27	13	1	2	96	56-65	46
04:00 PM	1	0	0	0	2	1	5	15	7	23	38	13	1	3	109	56-65	61
05:00 PM	1	0	0	0	0	1	4	8	23	33	33	5	2	0	110	56-65	66
06:00 PM	0	0	0	0	1	1	1	7	11	10	16	9	2	0	58	56-65	26
07:00 PM	1	0	0	0	0	0	0	4	9	19	13	11	0	0	57	56-65	32
08:00 PM	1	0	0	0	0	0	0	5	6	11	5	4	0	1	33	51-60	17
09:00 PM	0	0	0	0	0	0	3	3	5	8	6	4	0	1	30	56-65	14
10:00 PM	0	0	0	0	0	1	1	0	5	8	7	5	0	0	27	56-65	15
11:00 PM	0	0	0	0	0	0	0	1	2	3	4	2	1	0	13	56-65	7
Day Total	14	1	1	1	9	27	56	102	196	400	376	125	27	10	1345	56-65	776
Percent	1%	0.1%	0.1%	0.1%	0.7%	2%	4.2%	7.6%	14.6%	29.7%	28%	9.3%	2%	0.7%			
AM Peak	10:00 AM	10:00 AM	10:00 AM	12:00 AM	6:00 AM	7:00 AM	7:00 AM	7:00 AM	11:00 AM	11:00 AM	8:00 AM	10:00 AM	6:00 AM	7:00 AM	11:00 AM		
Volume	2	1	1	0	1	5	5	7	15	46	31	9	4	1	102		
PM Peak	2:00 PM	12:00 PM	12:00 PM	3:00 PM	3:00 PM	3:00 PM	1:00 PM	4:00 PM	5:00 PM	1:00 PM	4:00 PM	3:00 PM	12:00 PM	4:00 PM	5:00 PM		
Volume	2	0	0	1	2	1	7	15	23	33	38	13	3	3	110		



Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

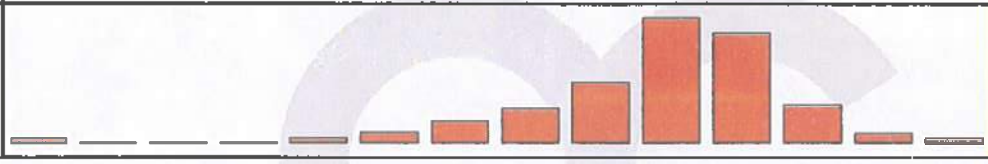
SUMMARY - Tube Count - Speed Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448504
DIRECTION: EB, WB
DATE: Jan 23 2024 - Jan 24 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total Percent	24 0.9%	1 0%	5 0.2%	3 0.1%	26 1%	67 2.5%	140 5.3%	214 8%	379 14.2%	785 29.5%	692 26%	243 9.1%	61 2.3%	25 0.9%	2665	56-65	1477
Cumulative Percent	0.9%	0.9%	1.1%	1.2%	2.2%	4.7%	10%	18%	32.2%	61.7%	87.7%	96.8%	99.1%	100%			

ADT
1332



85th Percentile: 64 MPH
Mean Speed(Average): 58 MPH
Median: 58 MPH
Mode: 58 MPH

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 **QC JOB #:** 16448504
SPECIFIC LOCATION: **DIRECTION:** EB, WB
CITY/STATE: Dinwiddie, VA **DATE:** Jan 23 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	4	1	0	1	0	0	0	0	0	0	0	0	0	6
01:00 AM	0	4	2	0	0	0	0	0	0	0	0	0	0	0	6
02:00 AM	0	0	0	0	2	0	0	1	0	0	0	0	0	0	3
03:00 AM	0	6	1	1	0	0	0	0	0	0	0	0	0	0	8
04:00 AM	0	6	5	2	0	0	0	0	4	0	0	0	0	0	17
05:00 AM	0	11	7	2	7	0	0	1	2	0	0	0	1	0	31
06:00 AM	0	28	11	3	8	0	0	2	2	0	0	0	0	0	54
07:00 AM	1	48	21	3	15	1	0	0	11	0	0	0	0	0	100
08:00 AM	0	38	18	4	13	0	0	3	5	1	0	0	0	1	83
09:00 AM	1	33	19	3	6	1	0	4	10	0	0	0	0	0	77
10:00 AM	1	29	15	3	14	0	1	3	10	2	0	0	0	3	81
11:00 AM	0	25	22	1	9	2	0	3	15	1	0	0	0	1	79
12:00 PM	2	31	17	3	17	3	0	5	9	0	0	0	0	1	88
01:00 PM	0	29	19	3	19	0	0	3	13	0	0	0	0	0	86
02:00 PM	1	39	24	3	17	0	0	1	12	0	0	0	1	0	98
03:00 PM	0	40	26	3	21	2	0	6	5	2	0	0	0	1	106
04:00 PM	0	49	21	2	17	0	0	1	8	0	0	0	0	2	100
05:00 PM	0	61	19	3	13	1	0	2	3	0	0	0	0	1	103
06:00 PM	0	48	12	2	11	0	0	1	1	0	0	0	0	0	75
07:00 PM	0	25	11	0	9	1	0	0	0	0	0	0	0	0	46
08:00 PM	0	10	7	3	2	0	0	0	1	0	0	0	0	0	23
09:00 PM	0	8	4	1	2	0	0	0	0	0	0	0	0	0	15
10:00 PM	1	14	1	3	1	0	0	0	0	1	0	0	0	0	21
11:00 PM	0	9	2	0	2	0	0	1	0	0	0	0	0	0	14
Day Total	7	595	285	48	206	11	1	37	111	7	0	0	2	10	1320
Percent	0.5%	45.1%	21.6%	3.6%	15.6%	0.8%	0.1%	2.8%	8.4%	0.5%	0%	0%	0.2%	0.8%	
ADT 1320															
AM Peak	7:00 AM	7:00 AM	11:00 AM	8:00 AM	7:00 AM	11:00 AM	10:00 AM	9:00 AM	11:00 AM	10:00 AM	12:00 AM	12:00 AM	5:00 AM	10:00 AM	7:00 AM
Volume	1	48	22	4	15	2	1	4	15	2	0	0	1	3	100
PM Peak	12:00 PM	5:00 PM	3:00 PM	12:00 PM	3:00 PM	12:00 PM	12:00 PM	3:00 PM	1:00 PM	3:00 PM	12:00 PM	12:00 PM	2:00 PM	4:00 PM	3:00 PM
Volume	2	61	26	3	21	3	0	6	13	2	0	0	1	2	106

Comments:

Report generated on 1/29/2024 12:57 PM SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 | **QC JOB #:** 16448504
SPECIFIC LOCATION: | **DIRECTION:** EB, WB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
01:00 AM	0	1	3	0	1	0	0	0	0	0	0	0	0	0	5
02:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
03:00 AM	0	4	1	0	0	1	0	0	0	0	0	0	0	0	6
04:00 AM	1	7	4	2	0	1	0	0	4	0	0	0	0	0	19
05:00 AM	0	9	13	0	7	0	0	0	1	0	0	0	0	0	30
06:00 AM	1	30	10	3	9	2	0	0	5	0	0	0	0	0	60
07:00 AM	1	43	19	3	9	1	0	0	11	0	0	0	1	0	88
08:00 AM	0	39	14	4	15	1	0	5	9	0	0	0	0	0	87
09:00 AM	0	20	9	12	11	1	0	1	10	5	0	0	0	1	70
10:00 AM	1	37	17	3	7	4	2	1	8	0	0	0	0	2	82
11:00 AM	0	40	24	4	15	2	1	2	12	0	0	0	0	2	102
12:00 PM	1	30	23	2	9	2	0	4	7	1	0	0	1	1	81
01:00 PM	0	37	21	5	10	0	1	2	6	1	0	0	0	1	84
02:00 PM	0	42	23	4	10	2	0	0	7	2	0	0	0	2	92
03:00 PM	0	40	23	4	19	1	0	4	4	0	0	0	0	1	96
04:00 PM	1	44	27	2	17	3	0	8	6	0	0	0	0	1	109
05:00 PM	0	65	24	0	13	1	0	1	5	0	0	0	0	1	110
06:00 PM	0	30	14	2	6	1	0	3	2	0	0	0	0	0	58
07:00 PM	0	32	15	1	2	0	0	2	4	0	0	0	0	1	57
08:00 PM	0	16	9	4	2	1	0	0	0	0	0	0	0	1	33
09:00 PM	0	24	1	1	3	0	0	0	1	0	0	0	0	0	30
10:00 PM	0	20	3	2	1	0	0	0	1	0	0	0	0	0	27
11:00 PM	0	6	2	1	2	0	0	0	2	0	0	0	0	0	13
Day Total	6	618	301	60	169	24	4	33	105	9	0	0	2	14	1345
Percent	0.4%	45.9%	22.4%	4.5%	12.6%	1.8%	0.3%	2.5%	7.8%	0.7%	0%	0%	0.1%	1%	
ADT 1345															
AM Peak	4:00 AM	7:00 AM	11:00 AM	9:00 AM	8:00 AM	10:00 AM	10:00 AM	8:00 AM	11:00 AM	9:00 AM	12:00 AM	12:00 AM	7:00 AM	10:00 AM	11:00 AM
Volume	1	43	24	12	15	4	2	5	12	5	0	0	1	2	102
PM Peak	12:00 PM	5:00 PM	4:00 PM	1:00 PM	3:00 PM	4:00 PM	1:00 PM	4:00 PM	12:00 PM	2:00 PM	12:00 PM	12:00 PM	12:00 PM	2:00 PM	5:00 PM
Volume	1	65	27	5	19	3	1	8	7	2	0	0	1	2	110

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448504
DIRECTION: EB, WB
DATE: Jan 23 2024 - Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Grand Total	13	1213	586	108	375	35	5	70	216	16	0	0	4	24	2665
Percent	0.5%	45.5%	22%	4.1%	14.1%	1.3%	0.2%	2.6%	8.1%	0.6%	0%	0%	0.2%	0.9%	

ADT
1332

Comments:

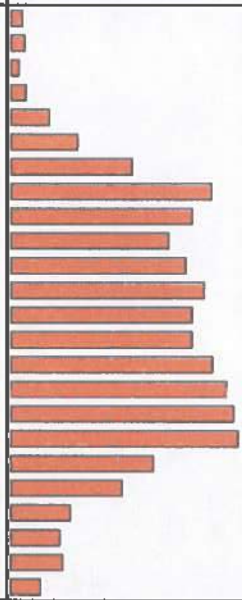
Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 | **QC JOB #:** 16448504
SPECIFIC LOCATION: | **DIRECTION:** EB, WB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Mon	Tue 23 Jan 24	Wed 24 Jan 24	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		6	4			5			5	
01:00 AM		6	5			6			6	
02:00 AM		3	2			3			3	
03:00 AM		8	6			7			7	
04:00 AM		17	19			18			18	
05:00 AM		31	30			31			31	
06:00 AM		54	60			57			57	
07:00 AM		100	88			94			94	
08:00 AM		83	87			85			85	
09:00 AM		77	70			74			74	
10:00 AM		81	82			82			82	
11:00 AM		79	102			91			91	
12:00 PM		88	81			85			85	
01:00 PM		86	84			85			85	
02:00 PM		98	92			95			95	
03:00 PM		106	96			101			101	
04:00 PM		100	109			105			105	
05:00 PM		103	110			107			107	
06:00 PM		75	58			67			67	
07:00 PM		46	57			52			52	
08:00 PM		23	33			28			28	
09:00 PM		15	30			23			23	
10:00 PM		21	27			24			24	
11:00 PM		14	13			14			14	
Day Total		1320	1345			1339			1339	
% Weekday Average		98.6%	100.4%							
% Week Average		98.6%	100.4%			100%				
AM Peak Volume		7:00 AM 100	11:00 AM 102			7:00 AM 94			7:00 AM 94	
PM Peak Volume		3:00 PM 106	5:00 PM 110			5:00 PM 107			5:00 PM 107	



Comments:

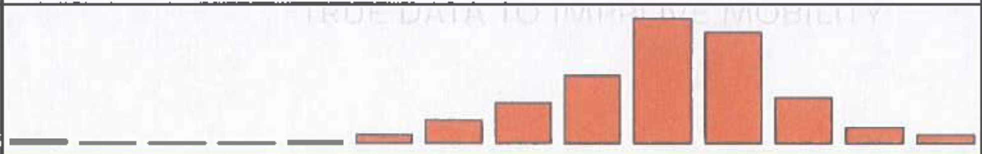
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 | **QC JOB #:** 16448504
SPECIFIC LOCATION: | **DIRECTION:** WB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	0	0	2	2	0	0	1	5	56-65	4
01:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	46-55	1
02:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	56-65	2
03:00 AM	0	0	0	0	0	0	0	0	0	1	1	1	0	1	4	56-65	2
04:00 AM	0	0	0	0	0	0	0	0	0	3	1	1	0	0	5	56-65	4
05:00 AM	0	0	0	0	0	0	0	0	0	5	0	1	1	0	7	51-60	5
06:00 AM	0	0	0	0	0	0	2	0	0	4	5	4	1	1	17	58-67	9
07:00 AM	0	0	0	0	0	1	3	3	3	4	13	5	5	0	37	61-70	18
08:00 AM	1	0	0	0	1	1	1	2	7	11	8	2	1	0	35	56-65	19
09:00 AM	0	0	0	0	1	2	2	3	5	13	5	3	0	0	34	51-60	18
10:00 AM	1	0	0	1	0	0	1	2	5	13	6	5	1	0	35	56-65	19
11:00 AM	0	0	0	0	0	0	0	5	7	13	18	4	0	0	47	56-65	31
12:00 PM	0	0	0	0	0	0	2	4	9	10	10	3	2	0	40	56-65	20
01:00 PM	0	0	0	0	0	2	2	4	6	16	7	4	0	0	41	56-65	23
02:00 PM	0	0	0	0	0	0	3	7	13	12	18	5	0	1	59	56-65	30
03:00 PM	0	0	0	0	1	0	3	3	7	18	12	7	0	1	52	56-65	30
04:00 PM	2	0	0	0	0	2	7	5	5	15	13	5	0	0	54	56-65	28
05:00 PM	0	0	0	0	0	3	0	6	16	17	15	6	3	1	67	51-60	33
06:00 PM	0	0	0	0	0	0	4	7	10	7	9	4	3	2	46	46-55	17
07:00 PM	0	0	0	0	0	0	0	4	3	5	8	4	2	3	29	56-65	13
08:00 PM	0	0	0	0	0	1	1	2	2	2	4	1	1	1	15	56-65	6
09:00 PM	0	0	0	0	0	0	0	1	1	1	1	0	2	0	6	66-75	2
10:00 PM	0	0	0	0	0	0	0	0	0	9	4	0	0	0	13	56-65	13
11:00 PM	0	0	0	0	0	0	2	1	0	0	2	2	0	0	7	61-70	4
Day Total	4	0	0	1	3	12	33	59	100	182	163	67	22	12	658	56-65	345
Percent	0.6%	0%	0%	0.2%	0.5%	1.8%	5%	9%	15.2%	27.7%	24.8%	10.2%	3.3%	1.8%			



	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total		
AM Peak	8:00 AM	12:00 AM	12:00 AM	10:00 AM	8:00 AM	9:00 AM	7:00 AM	11:00 AM	8:00 AM	9:00 AM	11:00 AM	7:00 AM	7:00 AM	12:00 AM	11:00 AM		
Volume	1	0	0	1	1	2	3	5	7	13	18	5	5	1	47		
PM Peak	4:00 PM	12:00 PM	12:00 PM	12:00 PM	3:00 PM	5:00 PM	4:00 PM	2:00 PM	5:00 PM	3:00 PM	2:00 PM	3:00 PM	5:00 PM	7:00 PM	5:00 PM		
Volume	2	0	0	0	1	3	7	7	16	18	18	7	3	3	67		

Comments:

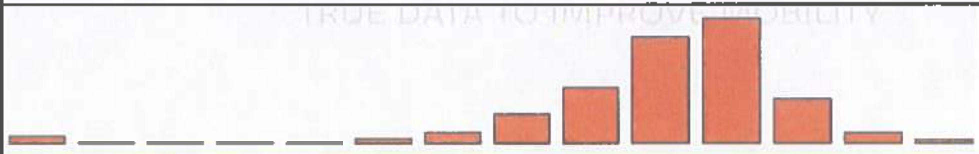
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 — **QC JOB #:** 16448504
SPECIFIC LOCATION: — **DIRECTION:** WB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 24 2024

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	1	1	0	0	0	1	0	0	0	3	36-45	2
01:00 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	46-55	1
02:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	56-65	2
03:00 AM	0	0	0	0	0	0	0	0	0	1	1	1	0	0	3	56-65	2
04:00 AM	0	0	0	0	0	0	0	0	1	1	2	0	0	0	4	56-65	3
05:00 AM	0	0	0	0	0	1	0	0	1	2	2	0	0	0	6	56-65	4
06:00 AM	0	0	0	0	0	0	0	0	2	6	9	2	2	0	21	56-65	15
07:00 AM	0	0	0	0	0	1	2	2	4	13	7	4	2	0	35	56-65	20
08:00 AM	0	0	0	0	0	0	0	0	5	11	9	4	0	0	29	56-65	20
09:00 AM	1	0	0	0	0	0	1	3	3	11	7	3	0	0	29	56-65	18
10:00 AM	1	1	1	0	0	0	1	4	2	7	12	2	2	0	33	56-65	19
11:00 AM	1	0	0	0	0	1	3	5	8	20	13	3	0	0	54	56-65	33
12:00 PM	1	0	0	0	0	0	0	2	6	8	11	2	3	0	33	56-65	19
01:00 PM	1	0	0	0	0	0	0	2	4	17	12	3	1	0	40	56-65	29
02:00 PM	1	0	0	0	0	0	0	6	7	15	14	7	1	0	51	56-65	29
03:00 PM	1	0	0	1	0	0	0	3	12	9	22	10	0	1	59	61-70	32
04:00 PM	1	0	0	0	2	1	3	7	4	10	22	9	1	2	62	56-65	32
05:00 PM	1	0	0	0	0	1	2	3	9	15	24	2	2	0	59	56-65	39
06:00 PM	0	0	0	0	0	1	1	4	6	5	13	7	2	0	39	61-70	20
07:00 PM	1	0	0	0	0	0	0	3	5	9	11	5	0	0	34	56-65	20
08:00 PM	1	0	0	0	0	0	0	2	3	6	3	2	0	1	18	51-60	9
09:00 PM	0	0	0	0	0	0	2	1	3	5	4	1	0	1	17	56-65	9
10:00 PM	0	0	0	0	0	1	1	0	4	5	5	4	0	0	20	56-65	10
11:00 PM	0	0	0	0	0	0	0	1	2	2	2	2	1	0	10	51-60	4
Day Total	11	1	1	1	2	8	17	48	92	178	208	74	17	5	663	56-65	386
Percent	1.7%	0.2%	0.2%	0.2%	0.3%	1.2%	2.6%	7.2%	13.9%	26.8%	31.4%	11.2%	2.6%	0.8%			



	1-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-75	76-999	Total
AM Peak	9:00 AM	10:00 AM	10:00 AM	12:00 AM	12:00 AM	12:00 AM	11:00 AM	11:00 AM	11:00 AM	11:00 AM	11:00 AM	7:00 AM	6:00 AM	12:00 AM	11:00 AM
Volume	1	1	1	0	0	1	3	5	8	20	13	4	2	0	54
PM Peak	12:00 PM	12:00 PM	12:00 PM	3:00 PM	4:00 PM	4:00 PM	4:00 PM	4:00 PM	3:00 PM	1:00 PM	5:00 PM	3:00 PM	12:00 PM	4:00 PM	4:00 PM
Volume	1	0	0	1	2	1	3	7	12	17	24	10	3	2	62

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Speed Data

SUMMARY - Tube Count - Speed Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448504
DIRECTION: WB
DATE: Jan 23 2024 - Jan 24 2024

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total Percent	15 1.1%	1 0.1%	1 0.1%	2 0.2%	5 0.4%	20 1.5%	50 3.8%	107 8.1%	192 14.5%	360 27.3%	371 28.1%	141 10.7%	39 3%	17 1.3%	1321	56-65	731
Cumulative Percent	1.1%	1.2%	1.3%	1.4%	1.8%	3.3%	7.1%	15.2%	29.8%	57%	85.1%	95.8%	98.7%	100%			

ADT
660

85th Percentile: 64 MPH
Mean Speed(Average): 58 MPH
Median: 58 MPH
Mode: 63 MPH

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 | **QC JOB #:** 16448504
SPECIFIC LOCATION: | **DIRECTION:** WB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
01:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00 AM	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
03:00 AM	0	2	1	1	0	0	0	0	0	0	0	0	0	0	4
04:00 AM	0	1	1	2	0	0	0	0	1	0	0	0	0	0	5
05:00 AM	0	3	0	0	3	0	0	1	0	0	0	0	0	0	7
06:00 AM	0	6	4	2	4	0	0	0	1	0	0	0	0	0	17
07:00 AM	0	14	5	3	9	0	0	0	6	0	0	0	0	0	37
08:00 AM	0	14	5	0	11	0	0	2	2	0	0	0	0	1	35
09:00 AM	0	13	5	2	4	0	0	3	7	0	0	0	0	0	34
10:00 AM	1	8	6	1	7	0	1	1	7	2	0	0	0	1	35
11:00 AM	0	16	13	1	5	2	0	0	9	1	0	0	0	0	47
12:00 PM	0	13	10	1	9	0	0	3	4	0	0	0	0	0	40
01:00 PM	0	16	8	2	9	0	0	2	4	0	0	0	0	0	41
02:00 PM	0	16	15	2	13	0	0	1	11	0	0	0	1	0	59
03:00 PM	0	23	8	2	15	0	0	1	1	2	0	0	0	0	52
04:00 PM	0	25	13	1	9	0	0	1	3	0	0	0	0	2	54
05:00 PM	0	40	11	2	9	1	0	2	2	0	0	0	0	0	67
06:00 PM	0	28	8	1	7	0	0	1	1	0	0	0	0	0	46
07:00 PM	0	14	9	0	6	0	0	0	0	0	0	0	0	0	29
08:00 PM	0	6	4	2	2	0	0	0	1	0	0	0	0	0	15
09:00 PM	0	2	1	1	2	0	0	0	0	0	0	0	0	0	6
10:00 PM	1	7	1	2	1	0	0	0	0	1	0	0	0	0	13
11:00 PM	0	4	1	0	1	0	0	1	0	0	0	0	0	0	7
Day Total	2	275	130	28	128	3	1	20	60	6	0	0	1	4	658
Percent	0.3%	41.8%	19.8%	4.3%	19.5%	0.5%	0.2%	3%	9.1%	0.9%	0%	0%	0.2%	0.6%	
ADT 658															
AM Peak	10:00 AM	11:00 AM	11:00 AM	7:00 AM	8:00 AM	11:00 AM	10:00 AM	9:00 AM	11:00 AM	10:00 AM	12:00 AM	12:00 AM	12:00 AM	8:00 AM	11:00 AM
Volume	1	16	13	3	11	2	1	3	9	2	0	0	0	1	47
PM Peak	10:00 PM	5:00 PM	2:00 PM	1:00 PM	3:00 PM	5:00 PM	12:00 PM	12:00 PM	2:00 PM	3:00 PM	12:00 PM	12:00 PM	2:00 PM	4:00 PM	5:00 PM
Volume	1	40	15	2	15	1	0	3	11	2	0	0	1	2	67

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 | **QC JOB #:** 16448504
SPECIFIC LOCATION: | **DIRECTION:** WB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
01:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2
02:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
03:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
04:00 AM	0	1	0	1	0	0	0	0	2	0	0	0	0	0	4
05:00 AM	0	3	1	0	2	0	0	0	0	0	0	0	0	0	6
06:00 AM	1	7	4	1	3	1	0	0	4	0	0	0	0	0	21
07:00 AM	1	15	5	3	4	1	0	0	6	0	0	0	0	0	35
08:00 AM	0	11	5	1	6	0	0	2	4	0	0	0	0	0	29
09:00 AM	0	9	5	3	6	0	0	0	4	1	0	0	0	1	29
10:00 AM	1	12	3	1	4	2	2	1	6	0	0	0	0	1	33
11:00 AM	0	18	13	1	10	2	1	1	7	0	0	0	0	1	54
12:00 PM	0	12	6	1	6	0	0	3	2	1	0	0	1	1	33
01:00 PM	0	12	12	3	7	0	1	1	2	1	0	0	0	1	40
02:00 PM	0	19	12	3	9	1	0	0	5	1	0	0	0	1	51
03:00 PM	0	24	14	3	13	0	0	3	1	0	0	0	0	1	59
04:00 PM	0	25	12	1	11	1	0	5	6	0	0	0	0	1	62
05:00 PM	0	36	10	0	9	1	0	0	2	0	0	0	0	1	59
06:00 PM	0	22	7	1	6	1	0	1	1	0	0	0	0	0	39
07:00 PM	0	18	8	1	1	0	0	1	4	0	0	0	0	1	34
08:00 PM	0	7	5	3	1	1	0	0	0	0	0	0	0	1	18
09:00 PM	0	14	0	0	2	0	0	0	1	0	0	0	0	0	17
10:00 PM	0	15	3	1	0	0	0	0	1	0	0	0	0	0	20
11:00 PM	0	4	1	1	2	0	0	0	2	0	0	0	0	0	10
Day Total	3	288	129	30	104	11	4	18	60	4	0	0	1	11	663
Percent	0.5%	43.4%	19.5%	4.5%	15.7%	1.7%	0.6%	2.7%	9%	0.6%	0%	0%	0.2%	1.7%	

ADT
663

	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
AM Peak	6:00 AM	11:00 AM	11:00 AM	7:00 AM	11:00 AM	10:00 AM	10:00 AM	8:00 AM	11:00 AM	9:00 AM	12:00 AM	12:00 AM	12:00 AM	9:00 AM	11:00 AM
Volume	1	18	13	3	10	2	2	2	7	1	0	0	0	1	54
PM Peak	12:00 PM	5:00 PM	3:00 PM	1:00 PM	3:00 PM	2:00 PM	1:00 PM	4:00 PM	4:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM
Volume	0	36	14	3	13	1	1	5	6	1	0	0	1	1	62

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 — **QC JOB #:** 16448504
SPECIFIC LOCATION: — **DIRECTION:** WB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Grand Total	5	563	259	58	232	14	5	38	120	10	0	0	2	15	1321
Percent	0.4%	42.6%	19.6%	4.4%	17.6%	1.1%	0.4%	2.9%	9.1%	0.8%	0%	0%	0.2%	1.1%	

ADT
660

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 — **QC JOB #:** 16448504

SPECIFIC LOCATION: — **DIRECTION:** WB

CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Mon	Tue 23 Jan 24	Wed 24 Jan 24	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		5	3			4			4	
01:00 AM		1	2			2			2	
02:00 AM		2	2			2			2	
03:00 AM		4	3			4			4	
04:00 AM		5	4			5			5	
05:00 AM		7	6			7			7	
06:00 AM		17	21			19			19	
07:00 AM		37	35			36			36	
08:00 AM		35	29			32			32	
09:00 AM		34	29			32			32	
10:00 AM		35	33			34			34	
11:00 AM		47	54			51			51	
12:00 PM		40	33			37			37	
01:00 PM		41	40			41			41	
02:00 PM		59	51			55			55	
03:00 PM		52	59			56			56	
04:00 PM		54	62			58			58	
05:00 PM		67	59			63			63	
06:00 PM		46	39			43			43	
07:00 PM		29	34			32			32	
08:00 PM		15	18			17			17	
09:00 PM		6	17			12			12	
10:00 PM		13	20			17			17	
11:00 PM		7	10			9			9	
Day Total		658	663			668			668	
% Weekday Average		98.5%	99.3%							
% Week Average		98.5%	99.3%			100%				
AM Peak Volume		11:00 AM 47	11:00 AM 54			11:00 AM 51			11:00 AM 51	
PM Peak Volume		5:00 PM 67	4:00 PM 62			5:00 PM 63			5:00 PM 63	

Comments:

Report generated on 1/29/2024 12:58 PM

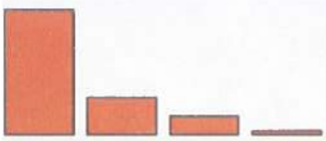
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins) — **QC JOB #:** 16448505
SPECIFIC LOCATION: — **DIRECTION:** NB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	2	0	0	0	2
01:00 AM	0	0	0	0	0
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	1	0	0	0	1
05:00 AM	1	0	0	0	1
06:00 AM	2	1	0	0	3
07:00 AM	7	3	0	0	10
08:00 AM	1	2	2	0	5
09:00 AM	5	1	3	0	9
10:00 AM	4	0	1	2	7
11:00 AM	4	1	1	0	6
12:00 PM	4	2	1	0	7
01:00 PM	4	1	1	0	6
02:00 PM	10	5	0	0	15
03:00 PM	7	2	0	0	9
04:00 PM	6	4	3	0	13
05:00 PM	12	2	2	0	16
06:00 PM	14	3	0	0	17
07:00 PM	6	0	0	0	6
08:00 PM	2	1	0	0	3
09:00 PM	1	0	0	0	1
10:00 PM	0	0	0	0	0
11:00 PM	1	0	0	0	1
Day Total	94	28	14	2	138
Percent	68.1%	20.3%	10.1%	1.4%	

ADT 138



	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
AM Peak	7:00 AM	7:00 AM	9:00 AM	10:00 AM	7:00 AM
Volume	7	3	3	2	10
PM Peak	6:00 PM	2:00 PM	4:00 PM	12:00 PM	6:00 PM
Volume	14	5	3	0	17

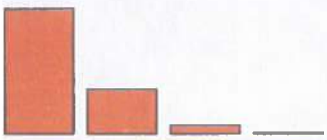
Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins) **QC JOB #:** 16448505
SPECIFIC LOCATION: **DIRECTION:** NB
CITY/STATE: Dinwiddie, VA **DATE:** Jan 24 2024

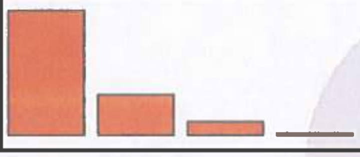
Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	2	0	0	0	2
01:00 AM	1	0	0	0	1
02:00 AM	0	0	0	0	0
03:00 AM	0	0	0	0	0
04:00 AM	1	0	0	0	1
05:00 AM	0	0	0	0	0
06:00 AM	1	0	0	0	1
07:00 AM	4	5	0	0	9
08:00 AM	4	1	0	0	5
09:00 AM	3	3	0	0	6
10:00 AM	2	2	1	0	5
11:00 AM	9	1	1	0	11
12:00 PM	3	4	0	0	7
01:00 PM	4	1	1	0	6
02:00 PM	7	3	0	0	10
03:00 PM	6	0	0	0	6
04:00 PM	14	3	2	0	19
05:00 PM	11	6	0	0	17
06:00 PM	7	1	1	0	9
07:00 PM	5	1	0	0	6
08:00 PM	1	1	0	0	2
09:00 PM	5	1	0	0	6
10:00 PM	1	0	0	0	1
11:00 PM	1	0	0	0	1
Day Total	92	33	6	0	131
Percent	70.2%	25.2%	4.6%	0%	
ADT 131					
AM Peak	11:00 AM	7:00 AM	10:00 AM	12:00 AM	11:00 AM
Volume	9	5	1	0	11
PM Peak	4:00 PM	5:00 PM	4:00 PM	12:00 PM	4:00 PM
Volume	14	6	2	0	19

Comments:

Report generated on 1/29/2024 12:57 PM SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data **SUMMARY - Tube Count - Vehicle Classification Data**

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins) **QC JOB #:** 16448505
SPECIFIC LOCATION: **DIRECTION:** NB
CITY/STATE: Dinwiddie, VA **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
Grand Total Percent	186 69.1%	61 22.7%	20 7.4%	2 0.7%	269
ADT 134					

Comments:

Report generated on 1/29/2024 12:57 PM SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins) — **QC JOB #:** 16448505
SPECIFIC LOCATION: — **DIRECTION:** NB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Mon	Tue 23 Jan 24	Wed 24 Jan 24	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		2	2			2			2	
01:00 AM		0	1			1			1	
02:00 AM		0	0			0			0	
03:00 AM		0	0			0			0	
04:00 AM		1	1			1			1	
05:00 AM		1	0			1			1	
06:00 AM		3	1			2			2	
07:00 AM		10	9			10			10	
08:00 AM		5	5			5			5	
09:00 AM		9	6			8			8	
10:00 AM		7	5			6			6	
11:00 AM		6	11			9			9	
12:00 PM		7	7			7			7	
01:00 PM		6	6			6			6	
02:00 PM		15	10			13			13	
03:00 PM		9	6			8			8	
04:00 PM		13	19			16			16	
05:00 PM		16	17			17			17	
06:00 PM		17	9			13			13	
07:00 PM		6	6			6			6	
08:00 PM		3	2			3			3	
09:00 PM		1	6			4			4	
10:00 PM		0	1			1			1	
11:00 PM		1	1			1			1	
Day Total		138	131			140			140	
% Weekday Average		98.6%	93.6%							
% Week Average		98.6%	93.6%			100%				
AM Peak Volume		7:00 AM 10	11:00 AM 11			7:00 AM 10			7:00 AM 10	
PM Peak Volume		6:00 PM 17	4:00 PM 19			5:00 PM 17			5:00 PM 17	

Comments:

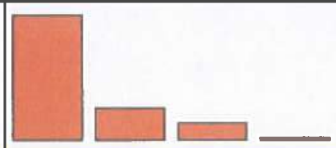
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins) | **QC JOB #:** 16448505
SPECIFIC LOCATION: | **DIRECTION:** NB, SB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	2	0	0	0	2
01:00 AM	1	0	0	0	1
02:00 AM	0	1	0	0	1
03:00 AM	1	0	0	0	1
04:00 AM	4	0	0	0	4
05:00 AM	6	2	0	0	8
06:00 AM	5	2	0	0	7
07:00 AM	19	7	0	0	26
08:00 AM	7	3	4	0	14
09:00 AM	10	1	6	0	17
10:00 AM	15	1	3	3	22
11:00 AM	7	1	1	0	9
12:00 PM	9	4	4	0	17
01:00 PM	9	3	3	0	15
02:00 PM	20	5	0	0	25
03:00 PM	8	4	0	0	12
04:00 PM	18	9	3	0	30
05:00 PM	22	3	2	0	27
06:00 PM	18	3	0	0	21
07:00 PM	8	0	0	0	8
08:00 PM	2	2	0	0	4
09:00 PM	2	0	0	0	2
10:00 PM	3	0	0	0	3
11:00 PM	1	0	0	0	1
Day Total	197	51	26	3	277
Percent	71.1%	18.4%	9.4%	1.1%	
ADT 277					
AM Peak	7:00 AM	7:00 AM	9:00 AM	10:00 AM	7:00 AM
Volume	19	7	6	3	26
PM Peak	5:00 PM	4:00 PM	12:00 PM	12:00 PM	4:00 PM
Volume	22	9	4	0	30



Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

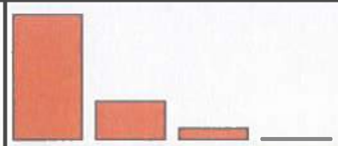
Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins) — **QC JOB #:** 16448505

SPECIFIC LOCATION: — **DIRECTION:** NB, SB

CITY/STATE: Dinwiddie, VA — **DATE:** Jan 24 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	2	0	0	0	2
01:00 AM	2	0	0	0	2
02:00 AM	0	0	0	0	0
03:00 AM	0	1	0	0	1
04:00 AM	4	1	1	0	6
05:00 AM	1	1	0	0	2
06:00 AM	6	2	1	0	9
07:00 AM	19	10	0	0	29
08:00 AM	12	2	1	0	15
09:00 AM	7	4	2	0	13
10:00 AM	9	3	2	0	14
11:00 AM	14	2	1	0	17
12:00 PM	9	5	1	0	15
01:00 PM	10	4	1	0	15
02:00 PM	16	3	0	0	19
03:00 PM	13	1	1	0	15
04:00 PM	18	6	3	0	27
05:00 PM	18	8	0	0	26
06:00 PM	10	1	1	0	12
07:00 PM	6	1	0	0	7
08:00 PM	2	1	0	0	3
09:00 PM	7	1	0	0	8
10:00 PM	1	0	0	0	1
11:00 PM	1	0	0	0	1
Day Total	187	57	15	0	259
Percent	72.2%	22%	5.8%	0%	
ADT 259					
AM Peak	7:00 AM	7:00 AM	9:00 AM	12:00 AM	7:00 AM
Volume	19	10	2	0	29
PM Peak	4:00 PM	5:00 PM	4:00 PM	12:00 PM	4:00 PM
Volume	18	8	3	0	27



Comments:

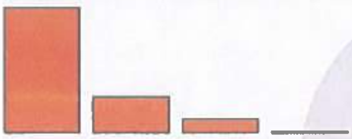
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins)
QC JOB #: 16448505
SPECIFIC LOCATION:
DIRECTION: NB, SB
CITY/STATE: Dinwiddie, VA
DATE: Jan 23 2024 - Jan 24 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
Grand Total Percent	384 71.6%	108 20.1%	41 7.6%	3 0.6%	536
ADT 268					

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins)										QC JOB #: 16448505
SPECIFIC LOCATION:										DIRECTION: NB, SB
CITY/STATE: Dinwiddie, VA										DATE: Jan 23 2024 - Jan 24 2024
Start Time	Mon	Tue 23 Jan 24	Wed 24 Jan 24	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		2	2			2			2	
01:00 AM		1	2			2			2	
02:00 AM		1	0			1			1	
03:00 AM		1	1			1			1	
04:00 AM		4	6			5			5	
05:00 AM		8	2			5			5	
06:00 AM		7	9			8			8	
07:00 AM		26	29			28			28	
08:00 AM		14	15			15			15	
09:00 AM		17	13			15			15	
10:00 AM		22	14			18			18	
11:00 AM		9	17			13			13	
12:00 PM		17	15			16			16	
01:00 PM		15	15			15			15	
02:00 PM		25	19			22			22	
03:00 PM		12	15			14			14	
04:00 PM		30	27			29			29	
05:00 PM		27	26			27			27	
06:00 PM		21	12			17			17	
07:00 PM		8	7			8			8	
08:00 PM		4	3			4			4	
09:00 PM		2	8			5			5	
10:00 PM		3	1			2			2	
11:00 PM		1	1			1			1	
Day Total		277	259			273			273	
% Weekday Average		101.5%	94.9%							
% Week Average		101.5%	94.9%			100%				
AM Peak Volume		7:00 AM 26	7:00 AM 29			7:00 AM 28			7:00 AM 28	
PM Peak Volume		4:00 PM 30	4:00 PM 27			4:00 PM 29			4:00 PM 29	
Comments:										

Report generated on 1/29/2024 12:58 PM

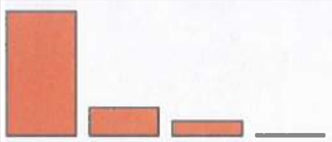
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins) — **QC JOB #:** 16448505

SPECIFIC LOCATION: — **DIRECTION:** SB

CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	0	0	0	0	0
01:00 AM	1	0	0	0	1
02:00 AM	0	1	0	0	1
03:00 AM	1	0	0	0	1
04:00 AM	3	0	0	0	3
05:00 AM	5	2	0	0	7
06:00 AM	3	1	0	0	4
07:00 AM	12	4	0	0	16
08:00 AM	6	1	2	0	9
09:00 AM	5	0	3	0	8
10:00 AM	11	1	2	1	15
11:00 AM	3	0	0	0	3
12:00 PM	5	2	3	0	10
01:00 PM	5	2	2	0	9
02:00 PM	10	0	0	0	10
03:00 PM	1	2	0	0	3
04:00 PM	12	5	0	0	17
05:00 PM	10	1	0	0	11
06:00 PM	4	0	0	0	4
07:00 PM	2	0	0	0	2
08:00 PM	0	1	0	0	1
09:00 PM	1	0	0	0	1
10:00 PM	3	0	0	0	3
11:00 PM	0	0	0	0	0
Day Total	103	23	12	1	139
Percent	74.1%	16.5%	8.6%	0.7%	
ADT 139					
AM Peak	7:00 AM	7:00 AM	9:00 AM	10:00 AM	7:00 AM
Volume	12	4	3	1	16
PM Peak	4:00 PM	4:00 PM	12:00 PM	12:00 PM	4:00 PM
Volume	12	5	3	0	17

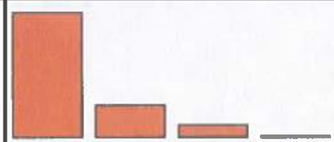
Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins) — **QC JOB #:** 16448505
SPECIFIC LOCATION: — **DIRECTION:** SB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 24 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	0	0	0	0	0
01:00 AM	1	0	0	0	1
02:00 AM	0	0	0	0	0
03:00 AM	0	1	0	0	1
04:00 AM	3	1	1	0	5
05:00 AM	1	1	0	0	2
06:00 AM	5	2	1	0	8
07:00 AM	15	5	0	0	20
08:00 AM	8	1	1	0	10
09:00 AM	4	1	2	0	7
10:00 AM	7	1	1	0	9
11:00 AM	5	1	0	0	6
12:00 PM	6	1	1	0	8
01:00 PM	6	3	0	0	9
02:00 PM	9	0	0	0	9
03:00 PM	7	1	1	0	9
04:00 PM	4	3	1	0	8
05:00 PM	7	2	0	0	9
06:00 PM	3	0	0	0	3
07:00 PM	1	0	0	0	1
08:00 PM	1	0	0	0	1
09:00 PM	2	0	0	0	2
10:00 PM	0	0	0	0	0
11:00 PM	0	0	0	0	0
Day Total	95	24	9	0	128
Percent	74.2%	18.8%	7%	0%	
ADT 128					
AM Peak	7:00 AM	7:00 AM	9:00 AM	12:00 AM	7:00 AM
Volume	15	5	2	0	20
PM Peak	2:00 PM	1:00 PM	12:00 PM	12:00 PM	1:00 PM
Volume	9	3	1	0	9

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins)
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448505
DIRECTION: SB
DATE: Jan 23 2024 - Jan 24 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
Grand Total Percent	198 74.2%	47 17.6%	21 7.9%	1 0.4%	267
ADT 133					

Comments:

Report generated on 1/29/2024 12:57 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

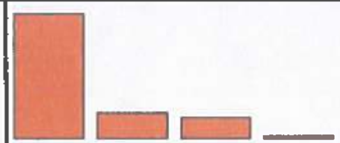
LOCATION: Rte 630 btwn Rocky Branch Rd and Rte 40 (Reduced Bins)										**QC JOB #:** 16448505
SPECIFIC LOCATION:										**DIRECTION:** SB
CITY/STATE: Dinwiddie, VA										**DATE:** Jan 23 2024 - Jan 24 2024
Start Time	**Mon**	**Tue** 23 Jan 24	**Wed** 24 Jan 24	**Thu**	**Fri**	**Average Weekday Hourly Traffic**	**Sat**	**Sun**	**Average Week Hourly Traffic**	**Average Week Profile**
12:00 AM		0	0			0			0	
01:00 AM		1	1			1			1	
02:00 AM		1	0			1			1	
03:00 AM		1	1			1			1	
04:00 AM		3	5			4			4	
05:00 AM		7	2			5			5	
06:00 AM		4	8			6			6	
07:00 AM		16	20			18			18	
08:00 AM		9	10			10			10	
09:00 AM		8	7			8			8	
10:00 AM		15	9			12			12	
11:00 AM		3	6			5			5	
12:00 PM		10	8			9			9	
01:00 PM		9	9			9			9	
02:00 PM		10	9			10			10	
03:00 PM		3	9			6			6	
04:00 PM		17	8			13			13	
05:00 PM		11	9			10			10	
06:00 PM		4	3			4			4	
07:00 PM		2	1			2			2	
08:00 PM		1	1			1			1	
09:00 PM		1	2			2			2	
10:00 PM		3	0			2			2	
11:00 PM		0	0			0			0	
Day Total		139	128			139			139	
% Weekday Average		100%	92.1%							
% Week Average		100%	92.1%			100%				
AM Peak Volume		7:00 AM 16	7:00 AM 20			7:00 AM 18			7:00 AM 18	
PM Peak Volume		4:00 PM 17	1:00 PM 9			4:00 PM 13			4:00 PM 13	
Comments:										

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins) — **QC JOB #:** 16448506
SPECIFIC LOCATION: — **DIRECTION:** EB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	1	0	0	0	1
01:00 AM	5	0	0	0	5
02:00 AM	0	1	0	0	1
03:00 AM	4	0	0	0	4
04:00 AM	9	0	3	0	12
05:00 AM	15	6	3	0	24
06:00 AM	29	5	3	0	37
07:00 AM	51	6	6	0	63
08:00 AM	37	6	5	0	48
09:00 AM	35	3	5	0	43
10:00 AM	30	9	5	2	46
11:00 AM	18	4	9	1	32
12:00 PM	27	10	10	1	48
01:00 PM	24	11	10	0	45
02:00 PM	33	5	1	0	39
03:00 PM	35	7	11	1	54
04:00 PM	32	9	5	0	46
05:00 PM	29	5	1	1	36
06:00 PM	24	5	0	0	29
07:00 PM	13	3	1	0	17
08:00 PM	7	1	0	0	8
09:00 PM	9	0	0	0	9
10:00 PM	7	1	0	0	8
11:00 PM	6	1	0	0	7
Day Total	480	98	78	6	662
Percent	72.5%	14.8%	11.8%	0.9%	
ADT 662					
AM Peak	7:00 AM	10:00 AM	11:00 AM	10:00 AM	7:00 AM
Volume	51	9	9	2	63
PM Peak	3:00 PM	1:00 PM	3:00 PM	12:00 PM	3:00 PM
Volume	35	11	11	1	54

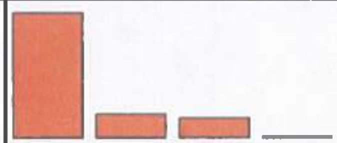
Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins) | **QC JOB #:** 16448506
SPECIFIC LOCATION: | **DIRECTION:** EB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 24 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	1	0	0	0	1
01:00 AM	3	0	0	0	3
02:00 AM	0	0	0	0	0
03:00 AM	2	0	1	0	3
04:00 AM	11	1	3	0	15
05:00 AM	18	5	1	0	24
06:00 AM	29	8	2	0	39
07:00 AM	42	5	6	0	53
08:00 AM	37	12	9	0	58
09:00 AM	15	14	12	0	41
10:00 AM	39	5	4	1	49
11:00 AM	33	8	6	1	48
12:00 PM	36	4	8	0	48
01:00 PM	34	5	5	0	44
02:00 PM	34	2	4	1	41
03:00 PM	25	7	5	0	37
04:00 PM	35	7	5	0	47
05:00 PM	43	4	4	0	51
06:00 PM	15	1	3	0	19
07:00 PM	21	1	1	0	23
08:00 PM	13	2	0	0	15
09:00 PM	11	2	0	0	13
10:00 PM	5	2	0	0	7
11:00 PM	3	0	0	0	3
Day Total	505	95	79	3	682
Percent	74%	13.9%	11.6%	0.4%	
ADT 682					
AM Peak	7:00 AM	9:00 AM	9:00 AM	10:00 AM	8:00 AM
Volume	42	14	12	1	58
PM Peak	5:00 PM	3:00 PM	12:00 PM	2:00 PM	5:00 PM
Volume	43	7	8	1	51

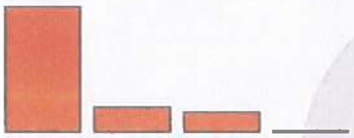
Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data **SUMMARY - Tube Count - Vehicle Classification Data**

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins) **QC JOB #:** 16448506
SPECIFIC LOCATION: **DIRECTION:** EB
CITY/STATE: Dinwiddie, VA **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
Grand Total Percent	985 73.3%	193 14.4%	157 11.7%	9 0.7%	1344
ADT 672					

Comments:

Report generated on 1/29/2024 12:58 PM SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins) — **QC JOB #:** 16448506

SPECIFIC LOCATION: — **DIRECTION:** EB

CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Mon	Tue 23 Jan 24	Wed 24 Jan 24	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		1	1			1			1	
01:00 AM		5	3			4			4	
02:00 AM		1	0			1			1	
03:00 AM		4	3			4			4	
04:00 AM		12	15			14			14	
05:00 AM		24	24			24			24	
06:00 AM		37	39			38			38	
07:00 AM		63	53			58			58	
08:00 AM		48	58			53			53	
09:00 AM		43	41			42			42	
10:00 AM		46	49			48			48	
11:00 AM		32	48			40			40	
12:00 PM		48	48			48			48	
01:00 PM		45	44			45			45	
02:00 PM		39	41			40			40	
03:00 PM		54	37			46			46	
04:00 PM		46	47			47			47	
05:00 PM		36	51			44			44	
06:00 PM		29	19			24			24	
07:00 PM		17	23			20			20	
08:00 PM		8	15			12			12	
09:00 PM		9	13			11			11	
10:00 PM		8	7			8			8	
11:00 PM		7	3			5			5	
Day Total		662	682			677			677	
% Weekday Average		97.8%	100.7%							
% Week Average		97.8%	100.7%			100%				
AM Peak Volume		7:00 AM 63	8:00 AM 58			7:00 AM 58			7:00 AM 58	
PM Peak Volume		3:00 PM 54	5:00 PM 51			12:00 PM 48			12:00 PM 48	

Comments:

Report generated on 1/29/2024 12:58 PM

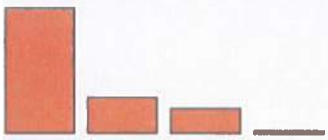
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins)
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 16448506
DIRECTION: EB, WB
DATE: Jan 23 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	5	1	0	0	6
01:00 AM	6	0	0	0	6
02:00 AM	0	2	1	0	3
03:00 AM	7	1	0	0	8
04:00 AM	11	2	4	0	17
05:00 AM	18	9	4	0	31
06:00 AM	39	11	4	0	54
07:00 AM	70	18	12	0	100
08:00 AM	56	17	9	1	83
09:00 AM	53	9	15	0	77
10:00 AM	45	17	16	3	81
11:00 AM	47	10	21	1	79
12:00 PM	50	20	17	1	88
01:00 PM	48	22	16	0	86
02:00 PM	64	20	14	0	98
03:00 PM	66	24	15	1	106
04:00 PM	70	19	9	2	100
05:00 PM	80	16	6	1	103
06:00 PM	60	13	2	0	75
07:00 PM	36	9	1	0	46
08:00 PM	17	5	1	0	23
09:00 PM	12	3	0	0	15
10:00 PM	16	4	1	0	21
11:00 PM	11	2	1	0	14
Day Total	887	254	169	10	1320
Percent	67.2%	19.2%	12.8%	0.8%	
ADT 1320					
AM Peak	7:00 AM	7:00 AM	11:00 AM	10:00 AM	7:00 AM
Volume	70	18	21	3	100
PM Peak	5:00 PM	3:00 PM	12:00 PM	4:00 PM	3:00 PM
Volume	80	24	17	2	106



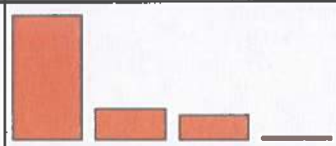
Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins)	QC JOB #: 16448506
SPECIFIC LOCATION:	DIRECTION: EB, WB
CITY/STATE: Dinwiddie, VA	DATE: Jan 24 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	4	0	0	0	4
01:00 AM	4	1	0	0	5
02:00 AM	0	2	0	0	2
03:00 AM	5	0	1	0	6
04:00 AM	12	2	5	0	19
05:00 AM	22	7	1	0	30
06:00 AM	41	12	7	0	60
07:00 AM	63	12	13	0	88
08:00 AM	53	19	15	0	87
09:00 AM	29	23	17	1	70
10:00 AM	55	10	15	2	82
11:00 AM	64	19	17	2	102
12:00 PM	54	11	15	1	81
01:00 PM	58	15	10	1	84
02:00 PM	65	14	11	2	92
03:00 PM	63	23	9	1	96
04:00 PM	72	19	17	1	109
05:00 PM	89	13	7	1	110
06:00 PM	44	8	6	0	58
07:00 PM	47	3	6	1	57
08:00 PM	25	6	1	1	33
09:00 PM	25	4	1	0	30
10:00 PM	23	3	1	0	27
11:00 PM	8	3	2	0	13
Day Total	925	229	177	14	1345
Percent	68.8%	17%	13.2%	1%	
ADT 1345					
AM Peak	11:00 AM	9:00 AM	9:00 AM	10:00 AM	11:00 AM
Volume	64	23	17	2	102
PM Peak	5:00 PM	3:00 PM	4:00 PM	2:00 PM	5:00 PM
Volume	89	23	17	2	110

Comments:

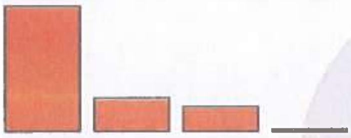
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins) | **QC JOB #:** 16448506
SPECIFIC LOCATION: | **DIRECTION:** EB, WB
CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
Grand Total Percent	1812 68%	483 18.1%	346 13%	24 0.9%	2665
ADT 1332					

Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

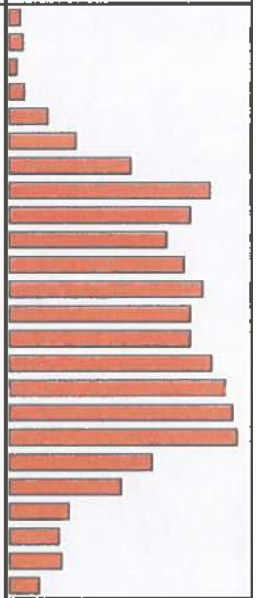
Type of report: Tube Count - Volume Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins) | **QC JOB #:** 16448506

SPECIFIC LOCATION: | **DIRECTION:** EB, WB

CITY/STATE: Dinwiddie, VA | **DATE:** Jan 23 2024 - Jan 24 2024

Start Time	Mon	Tue 23 Jan 24	Wed 24 Jan 24	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		6	4			5			5	
01:00 AM		6	5			6			6	
02:00 AM		3	2			3			3	
03:00 AM		8	6			7			7	
04:00 AM		17	19			18			18	
05:00 AM		31	30			31			31	
06:00 AM		54	60			57			57	
07:00 AM		100	88			94			94	
08:00 AM		83	87			85			85	
09:00 AM		77	70			74			74	
10:00 AM		81	82			82			82	
11:00 AM		79	102			91			91	
12:00 PM		88	81			85			85	
01:00 PM		86	84			85			85	
02:00 PM		98	92			95			95	
03:00 PM		106	96			101			101	
04:00 PM		100	109			105			105	
05:00 PM		103	110			107			107	
06:00 PM		75	58			67			67	
07:00 PM		46	57			52			52	
08:00 PM		23	33			28			28	
09:00 PM		15	30			23			23	
10:00 PM		21	27			24			24	
11:00 PM		14	13			14			14	
Day Total		1320	1345			1339			1339	
% Weekday Average		98.6%	100.4%							
% Week Average		98.6%	100.4%			100%				
AM Peak Volume		7:00 AM 100	11:00 AM 102			7:00 AM 94			7:00 AM 94	
PM Peak Volume		3:00 PM 106	5:00 PM 110			5:00 PM 107			5:00 PM 107	



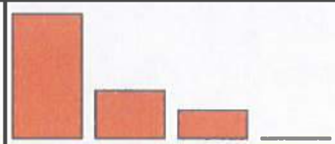
Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins) — **QC JOB #:** 16448506
SPECIFIC LOCATION: — **DIRECTION:** WB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 23 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	4	1	0	0	5
01:00 AM	1	0	0	0	1
02:00 AM	0	1	1	0	2
03:00 AM	3	1	0	0	4
04:00 AM	2	2	1	0	5
05:00 AM	3	3	1	0	7
06:00 AM	10	6	1	0	17
07:00 AM	19	12	6	0	37
08:00 AM	19	11	4	1	35
09:00 AM	18	6	10	0	34
10:00 AM	15	8	11	1	35
11:00 AM	29	6	12	0	47
12:00 PM	23	10	7	0	40
01:00 PM	24	11	6	0	41
02:00 PM	31	15	13	0	59
03:00 PM	31	17	4	0	52
04:00 PM	38	10	4	2	54
05:00 PM	51	11	5	0	67
06:00 PM	36	8	2	0	46
07:00 PM	23	6	0	0	29
08:00 PM	10	4	1	0	15
09:00 PM	3	3	0	0	6
10:00 PM	9	3	1	0	13
11:00 PM	5	1	1	0	7
Day Total	407	156	91	4	658
Percent	61.9%	23.7%	13.8%	0.6%	
ADT 658					
AM Peak	11:00 AM	7:00 AM	11:00 AM	8:00 AM	11:00 AM
Volume	29	12	12	1	47
PM Peak	5:00 PM	3:00 PM	2:00 PM	4:00 PM	5:00 PM
Volume	51	17	13	2	67

Comments:

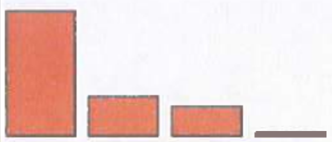
Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins) — **QC JOB #:** 16448506
SPECIFIC LOCATION: — **DIRECTION:** WB
CITY/STATE: Dinwiddie, VA — **DATE:** Jan 24 2024

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
12:00 AM	3	0	0	0	3
01:00 AM	1	1	0	0	2
02:00 AM	0	2	0	0	2
03:00 AM	3	0	0	0	3
04:00 AM	1	1	2	0	4
05:00 AM	4	2	0	0	6
06:00 AM	12	4	5	0	21
07:00 AM	21	7	7	0	35
08:00 AM	16	7	6	0	29
09:00 AM	14	9	5	1	29
10:00 AM	16	5	11	1	33
11:00 AM	31	11	11	1	54
12:00 PM	18	7	7	1	33
01:00 PM	24	10	5	1	40
02:00 PM	31	12	7	1	51
03:00 PM	38	16	4	1	59
04:00 PM	37	12	12	1	62
05:00 PM	46	9	3	1	59
06:00 PM	29	7	3	0	39
07:00 PM	26	2	5	1	34
08:00 PM	12	4	1	1	18
09:00 PM	14	2	1	0	17
10:00 PM	18	1	1	0	20
11:00 PM	5	3	2	0	10
Day Total	420	134	98	11	663
Percent	63.3%	20.2%	14.8%	1.7%	
ADT 663					
AM Peak	11:00 AM	11:00 AM	10:00 AM	9:00 AM	11:00 AM
Volume	31	11	11	1	54
PM Peak	5:00 PM	3:00 PM	4:00 PM	12:00 PM	4:00 PM
Volume	46	16	12	1	62



Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net

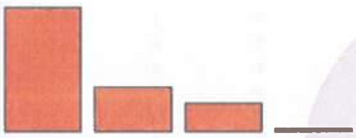
Type of report: Tube Count - Vehicle Classification Data

SUMMARY - Tube Count - Vehicle Classification Data

LOCATION: Rte 40 btwn Rte 630 and Rte 626 (Reduced Bins)
SPECIFIC LOCATION:
CITY/STATE: Dinwiddie, VA

QC JOB #: 164485(
DIRECTION: W
DATE: Jan 23 2024 - Jan 24 202

Start Time	FHWA Classes 1-3	FHWA Classes 4-5	FHWA Classes 6-13	Not Classed	Total
Grand Total	827	290	189	15	1321
Percent	62.6%	22%	14.3%	1.1%	
ADT 660					



Comments:

Report generated on 1/29/2024 12:58 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.n

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	50	3	7	35	5	11
Future Volume (Veh/h)	50	3	7	35	5	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	61	4	9	43	6	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			65		124	63
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			65		124	63
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			99		99	99
cM capacity (veh/h)			1464		825	958

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	65	52	19
Volume Left	0	9	6
Volume Right	4	0	13
cSH	1700	1464	912
Volume to Capacity	0.04	0.01	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	1.3	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.0
Approach LOS			A

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	38	4	13	46	7	9
Future Volume (Veh/h)	38	4	13	46	7	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	42	4	14	51	8	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			46		123	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			46		123	44
tC, single (s)			4.4		6.7	6.2
tC, 2 stage (s)						
tF (s)			2.5		3.8	3.3
p0 queue free %			99		99	99
cM capacity (veh/h)			1394		803	1032

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	46	65	18
Volume Left	0	14	8
Volume Right	4	0	10
cSH	1700	1394	916
Volume to Capacity	0.03	0.01	0.02
Queue Length 95th (ft)	0	1	2
Control Delay (s)	0.0	1.7	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	1.7	9.0
Approach LOS			A

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	51	33	37	35	35	41
Future Volume (Veh/h)	51	33	37	35	35	41
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	62	40	45	43	43	50
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			102		215	82
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			102		215	82
tC, single (s)			4.9		7.3	7.0
tC, 2 stage (s)						
tF (s)			2.9		4.3	4.0
p0 queue free %			96		93	94
cM capacity (veh/h)			1107		591	805

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	102	88	93
Volume Left	0	45	43
Volume Right	40	0	50
cSH	1700	1107	689
Volume to Capacity	0.06	0.04	0.13
Queue Length 95th (ft)	0	3	12
Control Delay (s)	0.0	4.5	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	4.5	11.0
Approach LOS			B

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	21.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	60	16	0	60	10
Future Volume (Veh/h)	0	60	16	0	60	10
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	65	17	0	65	11
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	158	17			17	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	158	17			17	
tC, single (s)	6.4	7.2			5.1	
tC, 2 stage (s)						
tF (s)	3.5	4.2			3.1	
p0 queue free %	100	92			94	
cM capacity (veh/h)	790	837			1142	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	65	17	76
Volume Left	0	0	65
Volume Right	65	0	0
cSH	837	1700	1142
Volume to Capacity	0.08	0.01	0.06
Queue Length 95th (ft)	6	0	5
Control Delay (s)	9.7	0.0	7.2
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	7.2
Approach LOS	A		

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	20.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	38	34	43	46	37	39
Future Volume (Veh/h)	38	34	43	46	37	39
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	42	37	47	51	41	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			79		206	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			79		206	60
tC, single (s)			4.9		7.3	7.0
tC, 2 stage (s)						
tF (s)			2.9		4.3	4.0
p0 queue free %			96		93	95
cM capacity (veh/h)			1150		602	831

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	79	98	84
Volume Left	0	47	41
Volume Right	37	0	43
cSH	1700	1150	701
Volume to Capacity	0.05	0.04	0.12
Queue Length 95th (ft)	0	3	10
Control Delay (s)	0.0	4.1	10.8
Lane LOS		A	B
Approach Delay (s)	0.0	4.1	10.8
Approach LOS			B

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	60	16	0	60	17
Future Volume (Veh/h)	0	60	16	0	60	17
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	65	17	0	65	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	165	17			17	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	165	17			17	
tC, single (s)	6.4	7.2			5.1	
tC, 2 stage (s)						
tF (s)	3.5	4.2			3.1	
p0 queue free %	100	92			94	
cM capacity (veh/h)	783	837			1142	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	65	17	83
Volume Left	0	0	65
Volume Right	65	0	0
cSH	837	1700	1142
Volume to Capacity	0.08	0.01	0.06
Queue Length 95th (ft)	6	0	5
Control Delay (s)	9.7	0.0	6.6
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	6.6
Approach LOS	A		

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	51	3	7	35	5	11
Future Volume (Veh/h)	51	3	7	35	5	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	62	4	9	43	6	13
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			66		125	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			66		125	64
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			99		99	99
cM capacity (veh/h)			1463		824	957

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	66	52	19
Volume Left	0	9	6
Volume Right	4	0	13
cSH	1700	1463	911
Volume to Capacity	0.04	0.01	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	1.3	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	1.3	9.0
Approach LOS			A

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	38	4	13	46	7	9
Future Volume (Veh/h)	38	4	13	46	7	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	42	4	14	51	8	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			46		123	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			46		123	44
tC, single (s)			4.4		6.7	6.2
tC, 2 stage (s)						
tF (s)			2.5		3.8	3.3
p0 queue free %			99		99	99
cM capacity (veh/h)			1394		803	1032

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	46	65	18
Volume Left	0	14	8
Volume Right	4	0	10
cSH	1700	1394	916
Volume to Capacity	0.03	0.01	0.02
Queue Length 95th (ft)	0	1	2
Control Delay (s)	0.0	1.7	9.0
Lane LOS		A	A
Approach Delay (s)	0.0	1.7	9.0
Approach LOS			A

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	19.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	54	33	38	38	35	42
Future Volume (Veh/h)	54	33	38	38	35	42
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	66	40	46	46	43	51
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			106		224	86
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			106		224	86
tC, single (s)			4.9		7.3	7.0
tC, 2 stage (s)						
tF (s)			2.9		4.3	4.0
p0 queue free %			96		93	94
cM capacity (veh/h)			1103		582	800

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	106	92	94
Volume Left	0	46	43
Volume Right	40	0	51
cSH	1700	1103	683
Volume to Capacity	0.06	0.04	0.14
Queue Length 95th (ft)	0	3	12
Control Delay (s)	0.0	4.4	11.1
Lane LOS		A	B
Approach Delay (s)	0.0	4.4	11.1
Approach LOS			B

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	60	17	0	60	11
Future Volume (Veh/h)	0	60	17	0	60	11
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	65	18	0	65	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	160	18			18	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	160	18			18	
tC, single (s)	6.4	7.2			5.1	
tC, 2 stage (s)						
tF (s)	3.5	4.2			3.1	
p0 queue free %	100	92			94	
cM capacity (veh/h)	788	836			1141	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	65	18	77
Volume Left	0	0	65
Volume Right	65	0	0
cSH	836	1700	1141
Volume to Capacity	0.08	0.01	0.06
Queue Length 95th (ft)	6	0	5
Control Delay (s)	9.7	0.0	7.1
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	7.1
Approach LOS	A		

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	41	34	44	49	38	40
Future Volume (Veh/h)	41	34	44	49	38	40
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	45	37	48	54	42	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			82		214	64
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			82		214	64
tC, single (s)			4.9		7.3	7.0
tC, 2 stage (s)						
tF (s)			2.9		4.3	4.0
p0 queue free %			96		93	95
cM capacity (veh/h)			1147		594	828

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	82	102	86
Volume Left	0	48	42
Volume Right	37	0	44
cSH	1700	1147	694
Volume to Capacity	0.05	0.04	0.12
Queue Length 95th (ft)	0	3	11
Control Delay (s)	0.0	4.1	10.9
Lane LOS		A	B
Approach Delay (s)	0.0	4.1	10.9
Approach LOS			B

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	60	18	0	60	18
Future Volume (Veh/h)	0	60	18	0	60	18
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	65	20	0	65	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	170	20			20	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	170	20			20	
tC, single (s)	6.4	7.2			5.1	
tC, 2 stage (s)						
tF (s)	3.5	4.2			3.1	
p0 queue free %	100	92			94	
cM capacity (veh/h)	778	833			1139	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	65	20	85
Volume Left	0	0	65
Volume Right	65	0	0
cSH	833	1700	1139
Volume to Capacity	0.08	0.01	0.06
Queue Length 95th (ft)	6	0	5
Control Delay (s)	9.7	0.0	6.5
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	6.5
Approach LOS	A		

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	21.3%	ICU Level of Service	A
Analysis Period (min)	15		