## Reserve Quantity Estimate

(Construction Sand & Gravel)

#### Prepared for:

Prepared by:

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#### 1.0 Conclusions

Using 36 open test holes, pit walls opened and visible for inspection, and 10 Core Logs from a determination was made as to how much if any of the formation at these holes was economically mineable. Elevations for the top and bottom of the mineable formation were used in plotting a digital model of the total mineable formation. Topcon 3D Office software was used to calculate the volume of the total economically mineable formation of the deposit. The volume in cubic yards was converted to tons and listed below.

#### **Estimate of Deposit Quantity**

#### **985 Tons**

#### 2.0 Introduction

The purpose of this report is to provide my client, with a highly accurate estimate of the economically mineable quantity of the mineral deposit located of

#### 3.0 Scope and General Limitations

#### 3.1 Scope

This report has been prepared by the author to represent all available information. To perform a volumetric analysis of the deposit. To perform calculations to estimate the quantity of mineable construction aggregate materials, in tons, using the most accurate means available to the industry.

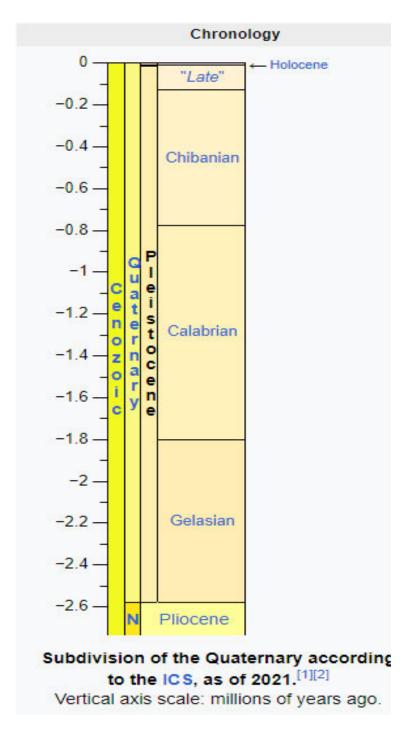
#### 3.2 General Limitations

No opinion is given of quality of title, encumbrances, suits, liens, or any other legal matter, and no responsibility is assumed by Aggregate Consulting, nor the Author. All data provided to the author for this report has been reviewed within the scope and limitations and no other responsibility is assumed for accuracy. The opinions included herein are unbiased, supportable, and justified. In no way does the fee received by Aggregate Consulting for this report have any influence on the calculations or findings in this report. No conflict of interest exists for the author or Aggregate Consulting with this property or project participants.

#### 4.0 General Geology

#### 4.1 Surface Geology Composition

The property consists of Quaternary deposits of the Holocene/Pleistocene (Qau), Clear Fork Group Permian shales of the Leonard (Pcf), Fluviatile Terrace Deposits of the Pleistocene (Qt) and Alluvium from floodplain deposits of the Holocene (Qal). The mineable deposit lies in the Terrace (Best) and Alluvium (Finer/No mineable material possibly) Deposits. See 4.4 Geologic Map.



#### 4.2 Drilling and Test Holes

Core logs prepared by \_\_\_\_\_\_. and open test holes were examined as well as the visible wall and pit floor by John Pitts Jr/Aggregate Consulting.

#### 4.3 Exposed Walls

There are a number of walls exposed for field examination at the site from previous and current mining. These exposed areas of the formation were examined for quality and composition to support observations of walls of the test holes that were not able to be examined with similar proximity due to safety considerations.

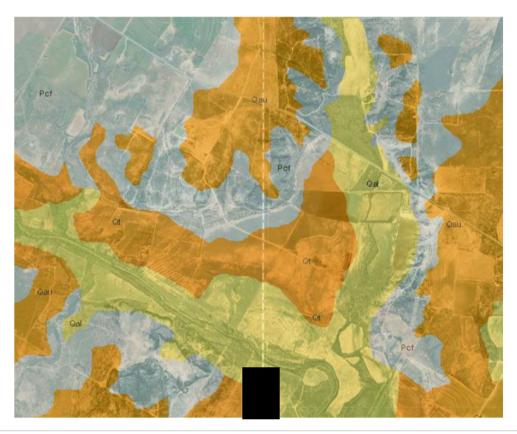


Old Pit on the SW Corner of Property-Test Hole (SWPIT)

Active Pit-Test Holes (ACT Pit North and ACT Pit South)



### 4.4 Geologic Map



#### 5.0 Quantity, Quality, Methodology, Calculation, and Limitations of Estimate

#### 5.1 Quantity Estimates

According to industry standards, typical unit weights (pounds per square foot) of Bank/Insitu Sand and Gravel range from 117 to 135. For this deposit 130lbs/ft<sup>3</sup> (3,510lbs/Yd<sup>3</sup>) was used due to compacted nature observed and size distribution.

The volume in cubic yards was calculated by Topcon 3D Office software with highly accurate survey points in X, Y, Z coordinates (3 Dimensions) during site visits (see 5.3 Methodolgy). Topcon 3D Office processes this data to create a digital surface model (DSM) or a digital terrain model (DTM) of the area. A DSM represents the surface of the terrain or formation. Surfaces are compared by creating cells built from point to point distances, cells are divided into four to create vertexes. Additionally the volume of only the split cells which share a vertex included within the calculation range out of the four vertexes of the original cell is calculated. Using this method in a varied and irregular pay thickness deposit allows for the greatest accuracy possible. Every point collected is used in the calculation verses the method of averging pay depth and mulipling by surface area that was employed before the advent of advanced software and GPS surveying equipment.

For this report, no waste or loss factor was applied in calculating the reserve quantity estimate.

The reported quantity was derived by multiplying the weight per cubic yard of the bank/insitu material by the volume in cubic yards to arrive at a tonnage figure. (See 5.4 Calculation)

#### 5.2 Quality of the Deposit

As is typical of terrace deposits, ancient evulsion and erosion play a large role in the composition of the current formation. Portions of the older fluviatile terrace deposits of the Pleistocene were removed over millions of years and replaced by newer alluvium from floodplain deposits of the Holocene. The newer alluvium on this site appears to be silt, clay, and finer silty sand with little coarse sand or gravel. The evulsion and erosion that occurred accounts for the inconsistent bed elevation and thickness of the existing Pleistocene (Coarser) deposit formation.

The geologic composition of the materials is mostly siliceous (Sand and quartz gravel), with some limestone present in small amounts within. No quality tests were conducted for this report, but I am told that the material currently being extracted from this site is being used with good results as fine and coarse aggregate for concrete.

Clay layers were observed in a large majority of the test holes, active pit and surge pile. During my visit I spent time watching the process plant wash the material. It was apparent that the production rate was definitely hindered due to the clay content. However, a good quality product was able to be produced.

The Overburden to Pay ratio is not optimal at a majority of test hole locations, but workable. This increases extraction costs comparable to other operations. Portions of the top layer of the pay formation, at a majority of the test hole locations, are too dirty or have too much clay to be economically mineable and were considered Overburden for reserve calculations.

#### 5.3 Methodology

The property boundaries were obtained from a google earth map provided. Using Topcon Hyper V GPS Base and Rover System, a project with local coordinates was created. control points were set, measured, and added to the project file. The mineable estimated reserve boundary was measured and entered. Test hole locations were measured and entered. Each test hole was measured for formation composition and formation depth from surface using a Trupulse 360 Laser and the GPS Base/Rover Hyper V system. The holes were field logged for depth and composition based on visual inspection in walls of test hole and material that had been extracted from the hole during prior excavation. Layers were created in the project file for surface, bottom of overburden, and bottom of pay. Elevations were shot into the project file for the surface and entered manually for bottom of overburden, and bottom of pay obtained from Field logs. This data was loaded into Topcon 3D Office software and surfaces were created to compare for volumetric calculations. Because most Test Hole/Bore locations were not present at the exact outer boundary of the reserve formation, the software extended the surfaces to the boundary in order to account for this and allow for a more representative volume calculation. Since the software is primarily used in earth moving operations, its volumetric calculation (for cubic yards) is presented in cut/fill format. This format has no bearing on the accuracy of the final calculated volume. Using bulk densities of similar materials a unit weight was determined, the bank/insitu volume calculated in cubic yards was converted to tons using this unit weight figure and presented in the conclusion section of this report.

#### 5.4 Calculation

130lbs/ft<sup>3</sup> x 27ft<sup>3</sup> = 3,510 Pounds per Cubic Yard

3,510lbs/yd<sup>3</sup> / 2000 Pounds = 1.755 Tons per Cubic Yard

1.755 Tons per  $yd^3$  x Reserve Volume in  $yd^3$  = Reserve Quantity Estimate in Tons.

#### 5.5 Limitations of Estimate

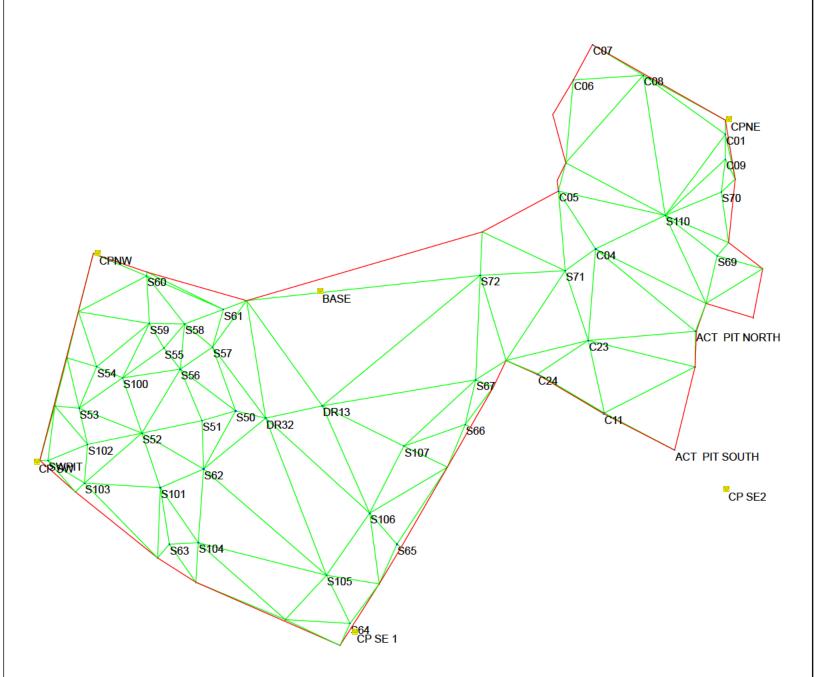
The full extents of the mineable deposit were not apparent due to lack of core/test holes in various locations. The extents were estimated by using surface geology maps, visual observations, proximity to property lines and non- pay formations. Due to the nature of terrace deposits, the irregularity, and inconsistency they present, no exact calculation is possible with test hole/bore holes alone. Every effort has been made to examine, evaluate, and include all the data available and make the best qualified estimate of the quantity of reserve for this report.

## Appendix A Calculations

1005'

### Triangle Measurement Drawing





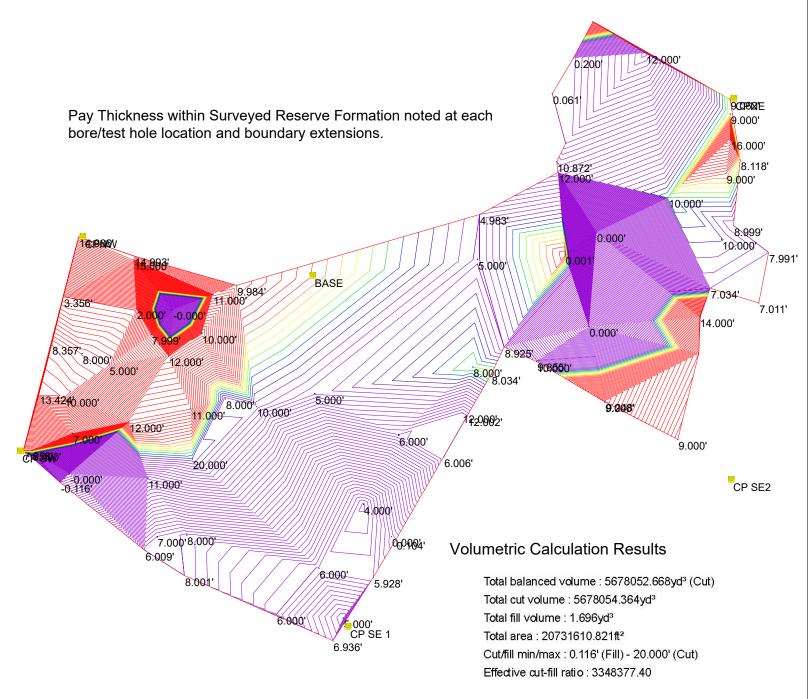
Topcon 3D Office created surfaces based on these point to point lines, their measurements, and elevations of the respective points. The 2 surfaces representing the top and bottom of pay, were compared by the software and a digital model of the pay formation was rendered. This model was calculated for volume and the results reported.

Comment:





### Volumetric Model and Tonnage Estimate



#### **Total Tonnage Calcluation**

5,678,054.364 Cubic Yards X 1.755 tons per yd3 = 9,964,985 Tons

Comment:



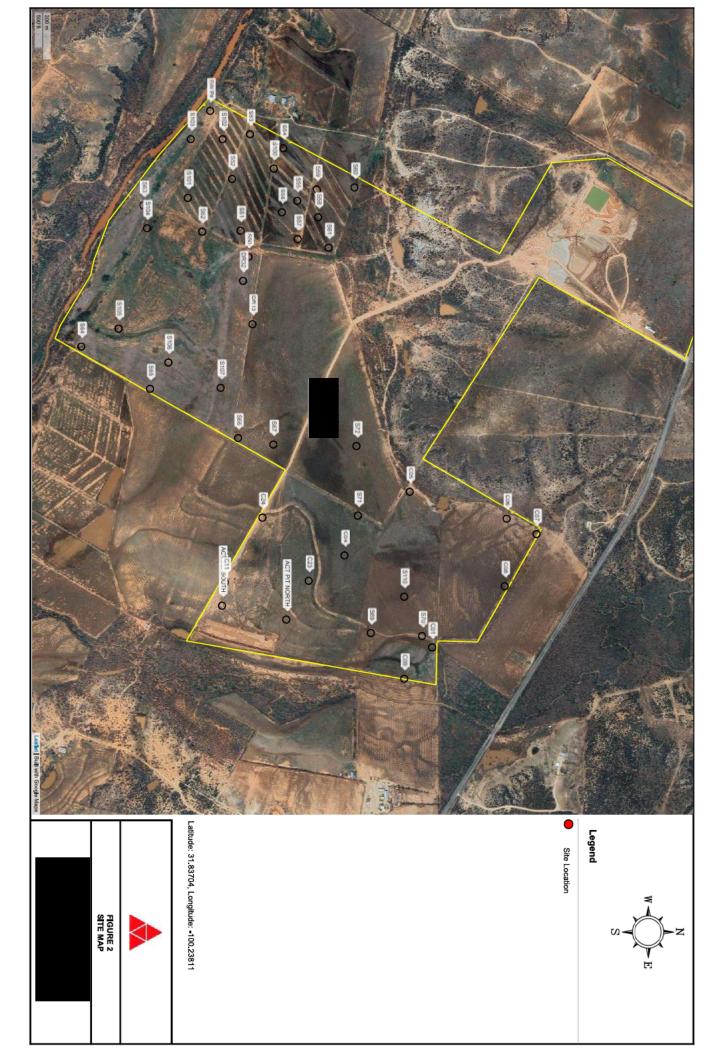
## Appendix B Qualifications of Consultant

#### John M Pitts Jr.

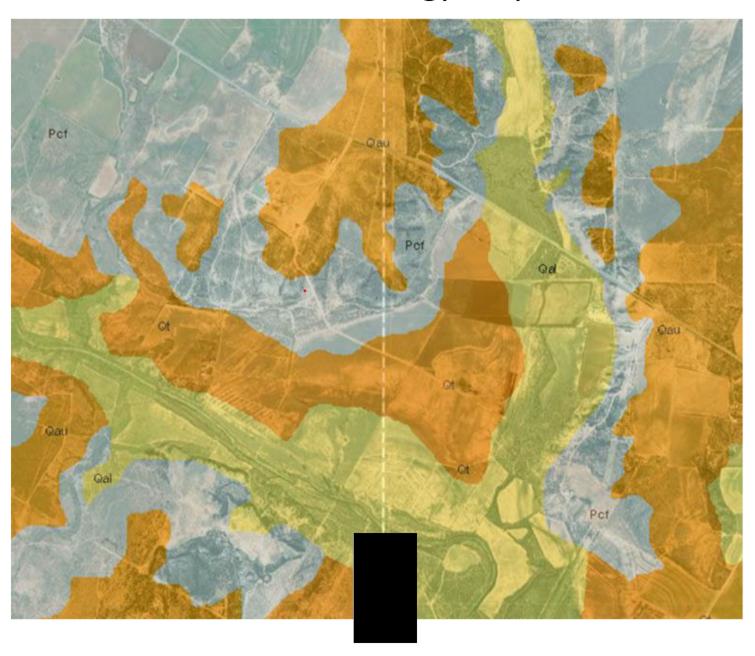
#### **BBA Finance-Texas Tech University**

- 4<sup>th</sup> Generation Aggregate Business Owner/Operator
- 36 years of experience owning, designing, building, and operating sand/gravel/crushed stone plants. Dry pit, dredge fed, booster pump, stripping and limestone crushing operations.
- Designed and built 6 stationary aggregate plants from 600 tph to 200 tph, including 2 greenfield sites.
- Owned/Operated 5 portable plants at 8 sites.
- Constructed/Reconstructed 3 dredges (Cutterhead, Chain Ladder, and Auger) Diesel and Electric and 2 Automated Boosters, Diesel and Electric.
- Directed and participated in all facets of the company including financial, accounting, purchasing, compliance, financing, planning, HR, sales, AR, AP, plant/machine maintenance, electrical installation, electrical repairs, IT setup/operation, engineering, legal, public relations, disaster recovery, locating greenfield/future mine sites, exploring/valuating potential deposits, strategic planning, core drilling, quality control, etc.
- Served as President and Vice President of Wichita Falls Chapter of CSI (Construction Specification Institute)
- Graduate of Texas A&M Dredging Engineering Short Course
- Extensive core drilling and exploration of existing mines and prospects, for my company and others. (over 30 to date).
- 10 years consulting experience.

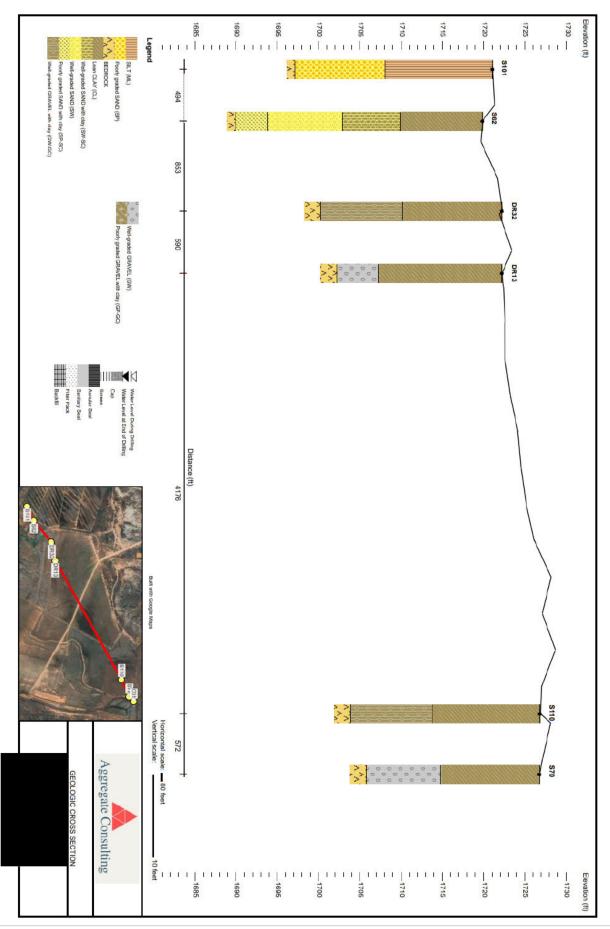
# Appendix C Supporting Maps and Documents

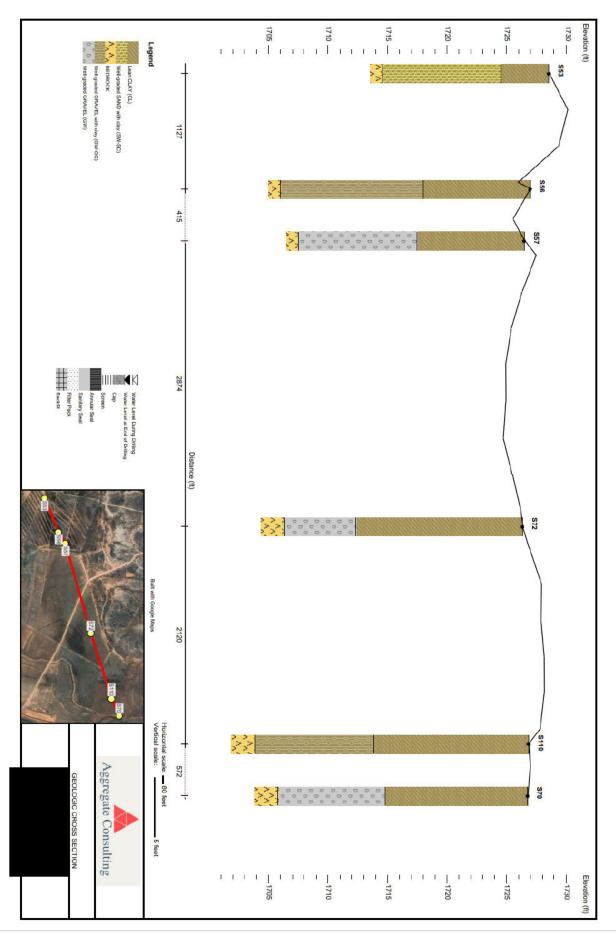


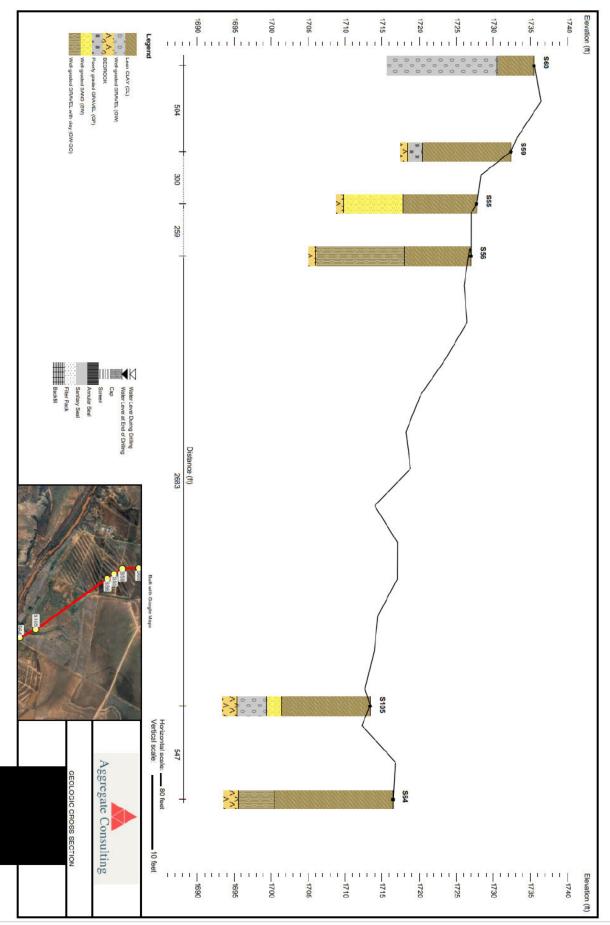
## Surface Geology Map

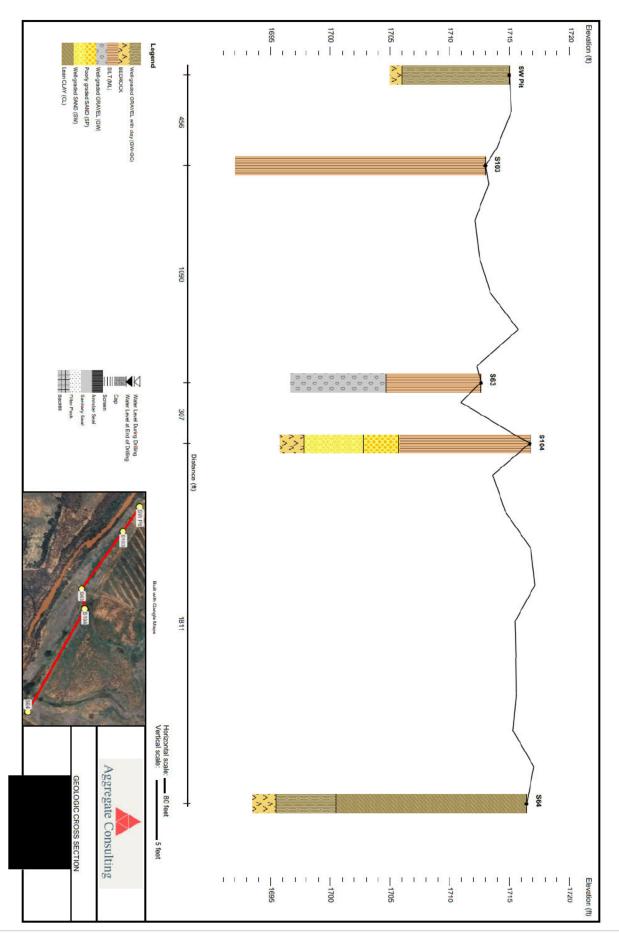


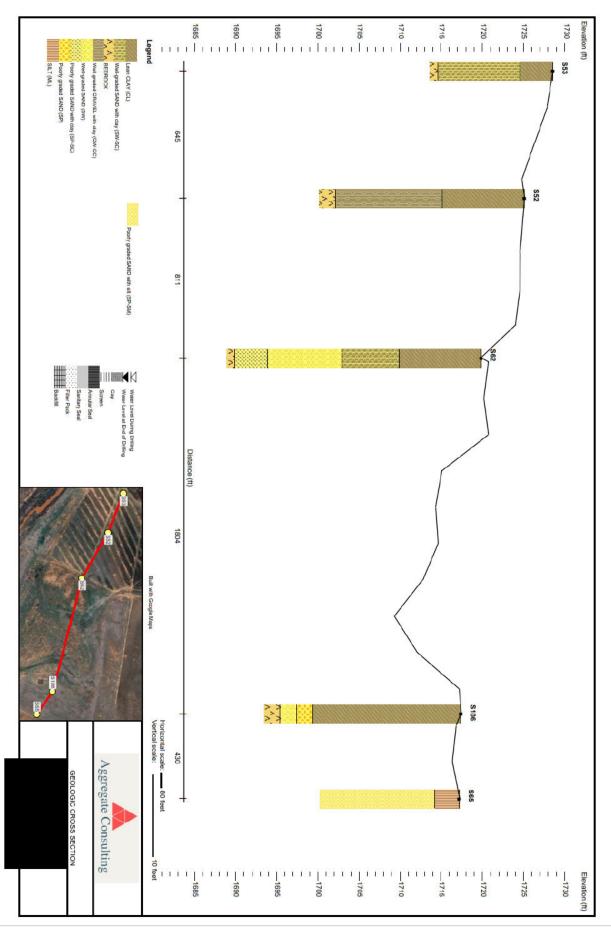


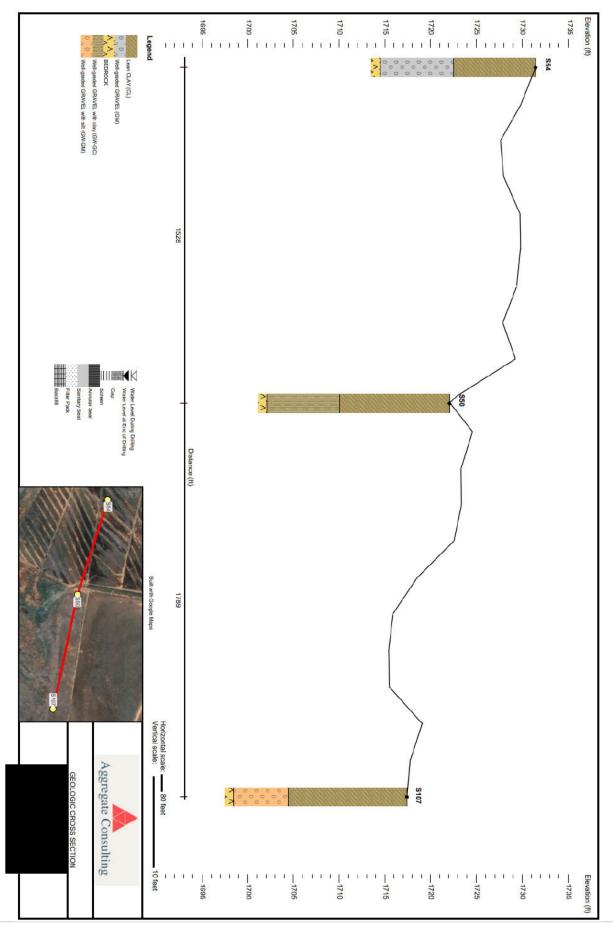


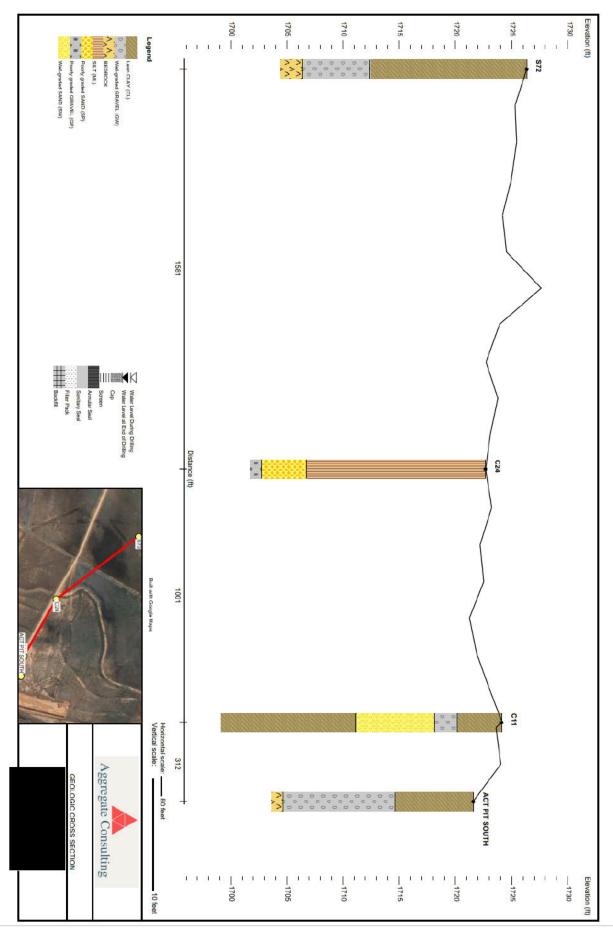


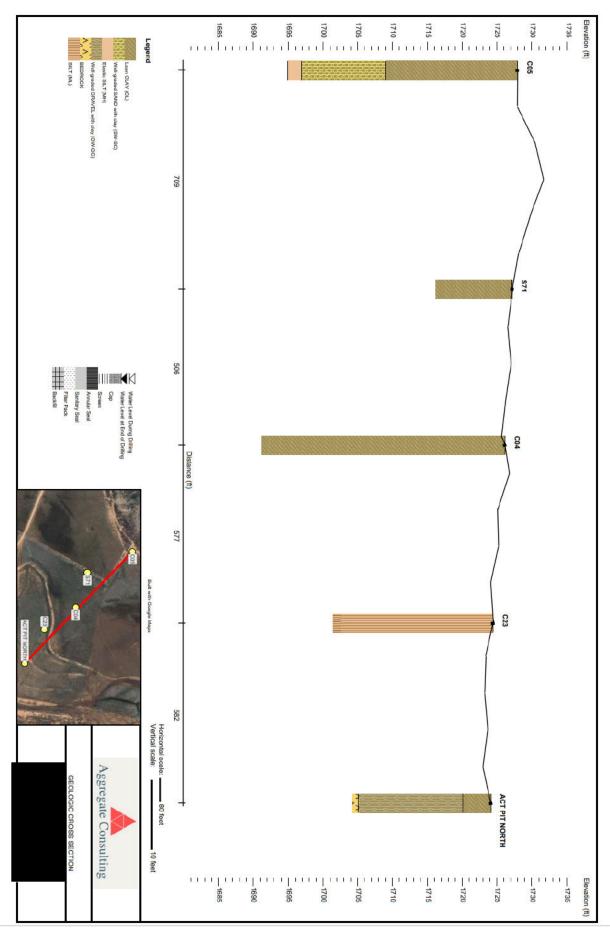


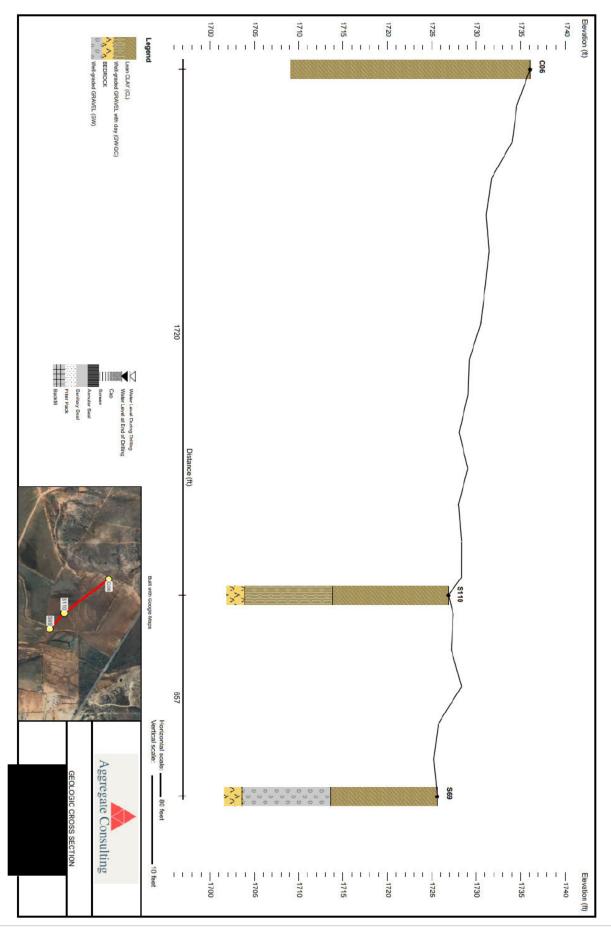


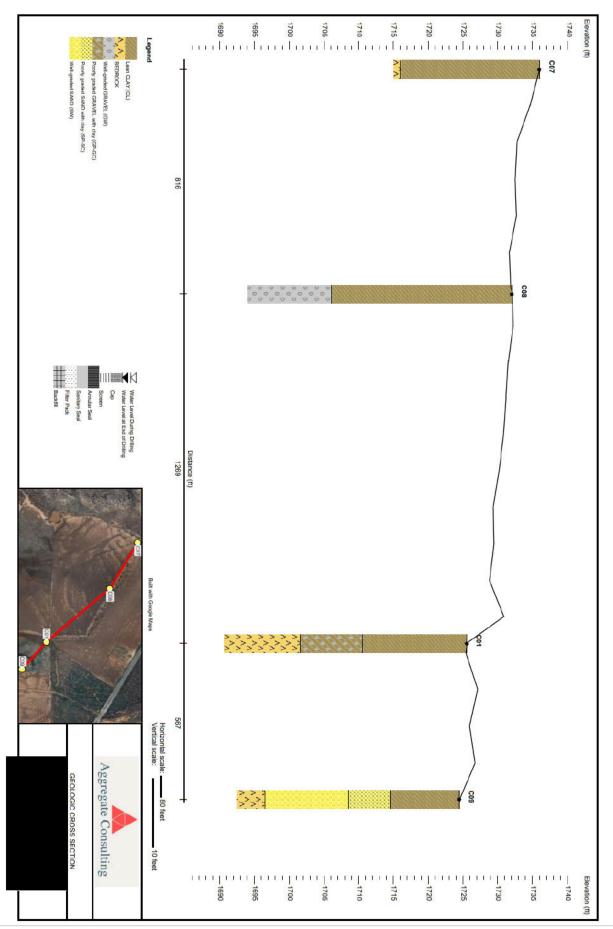


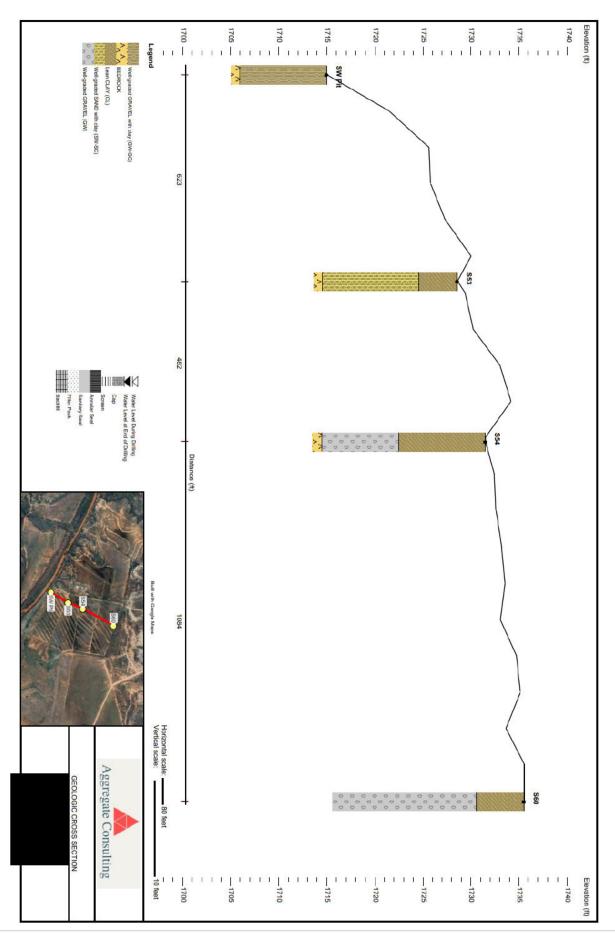




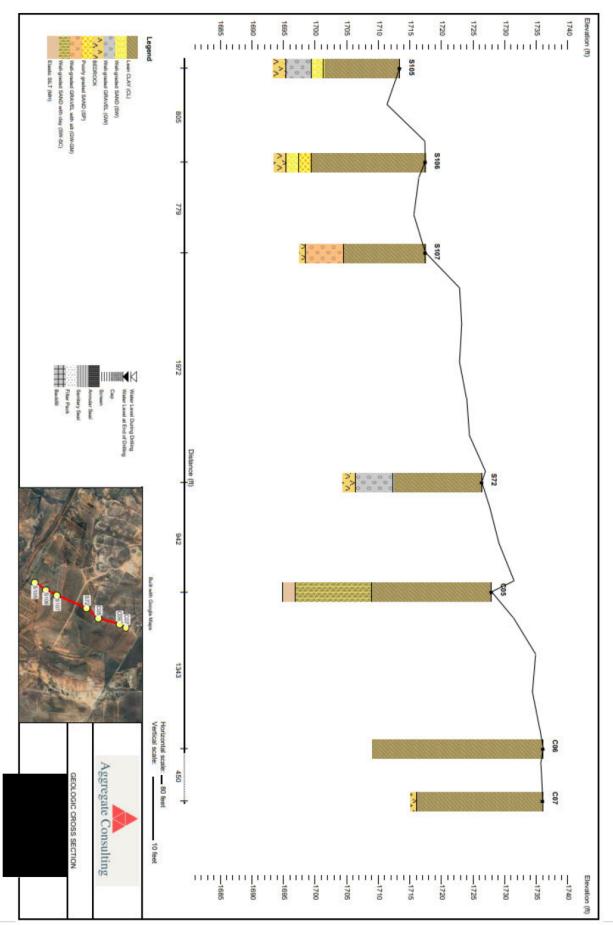


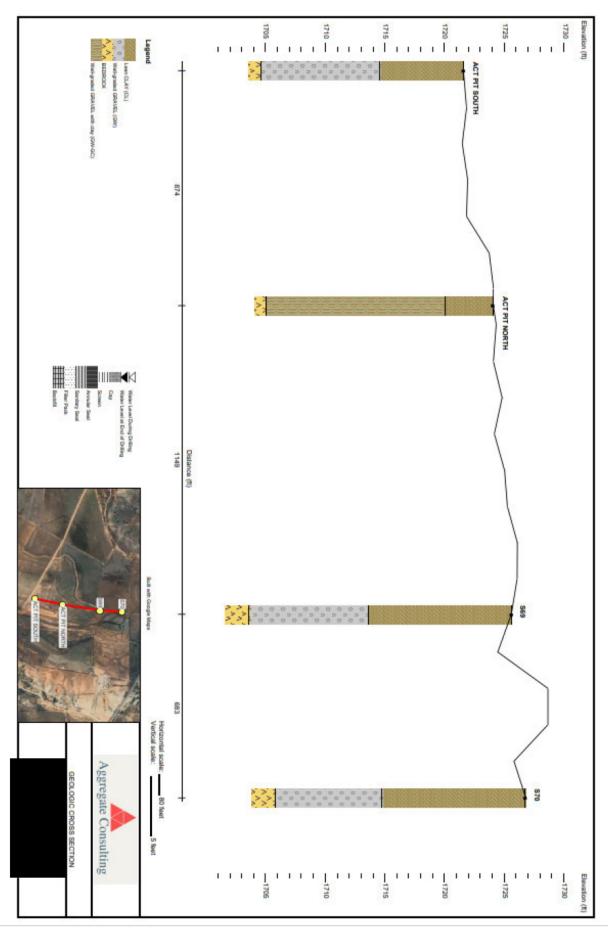


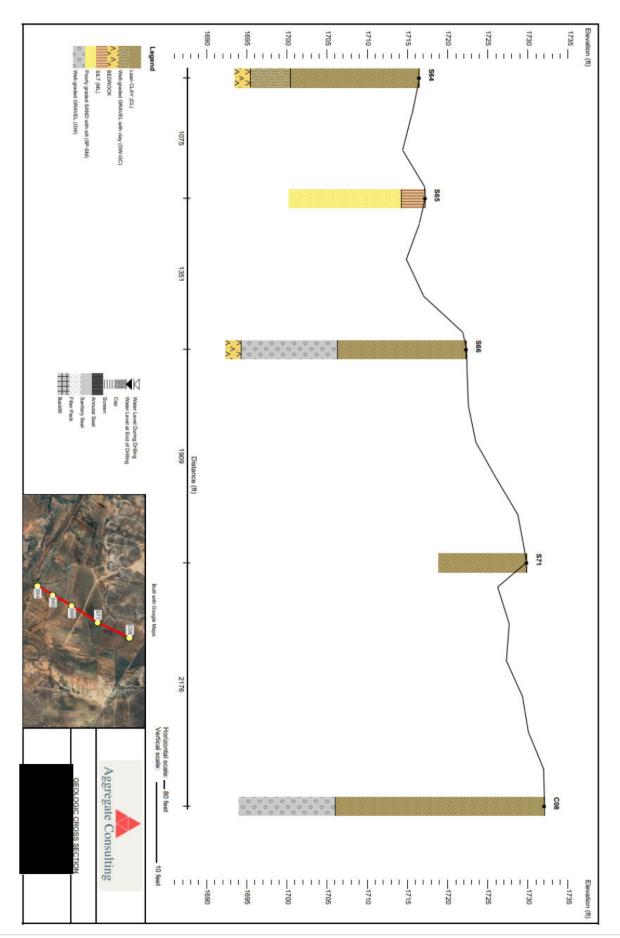


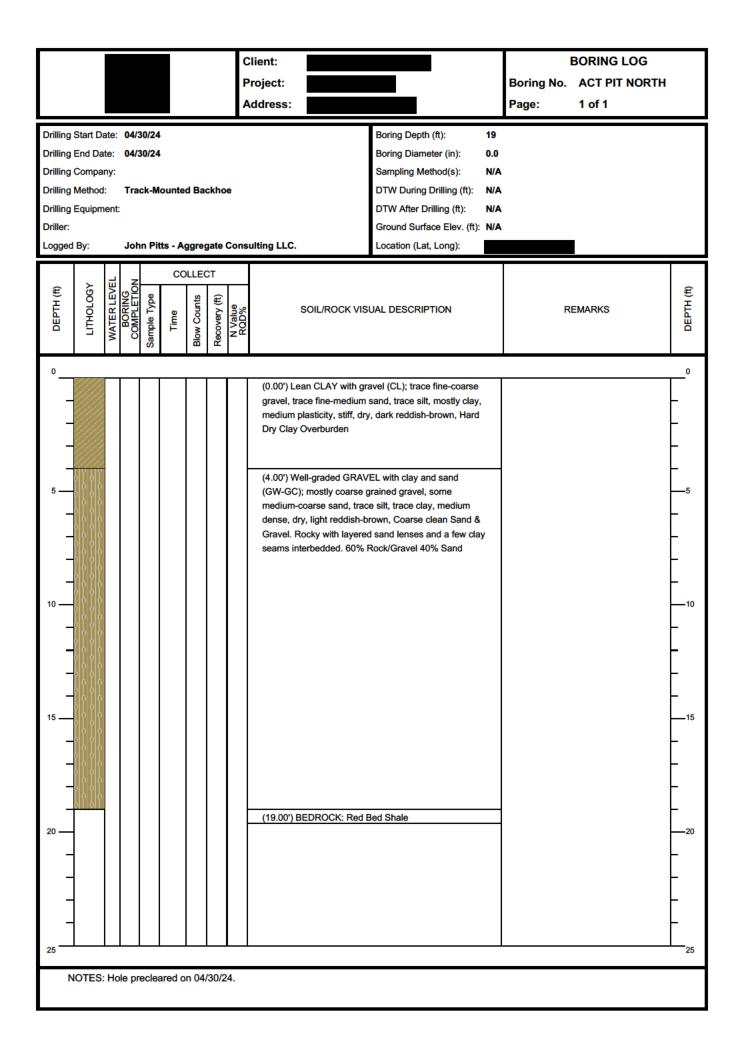


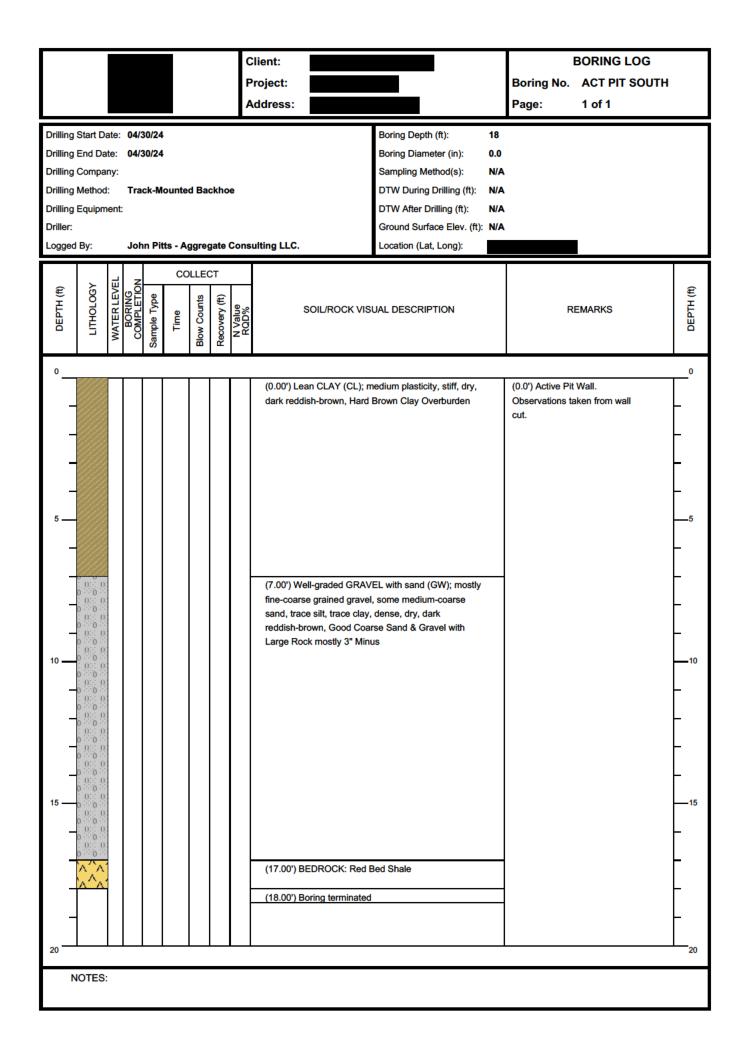


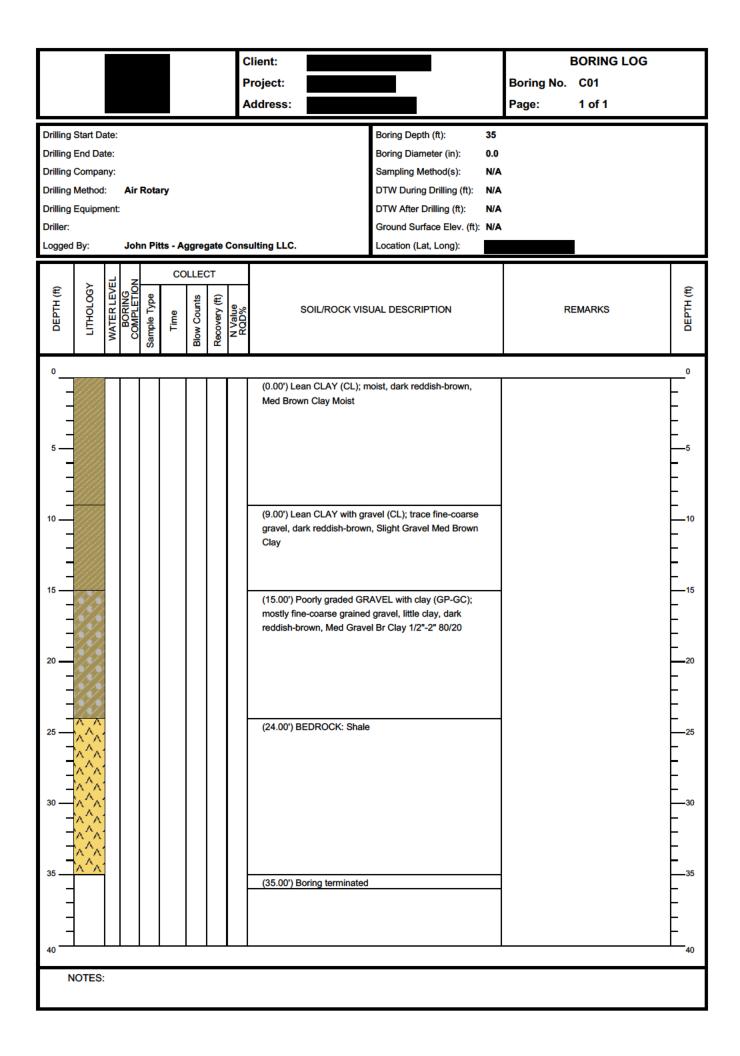


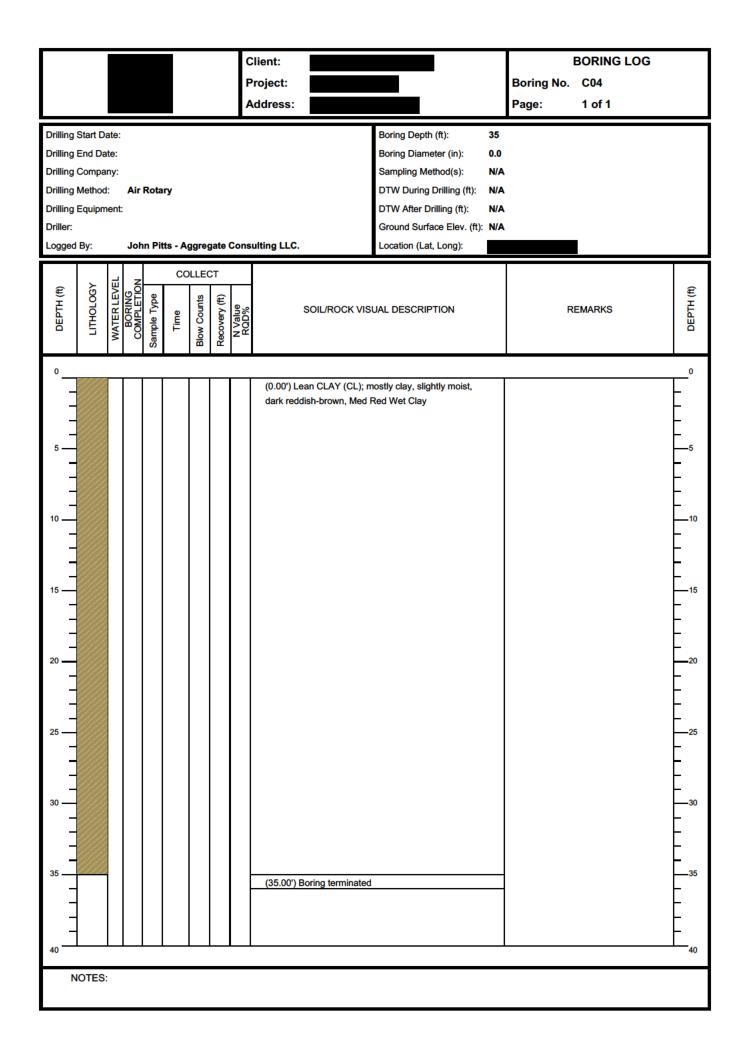


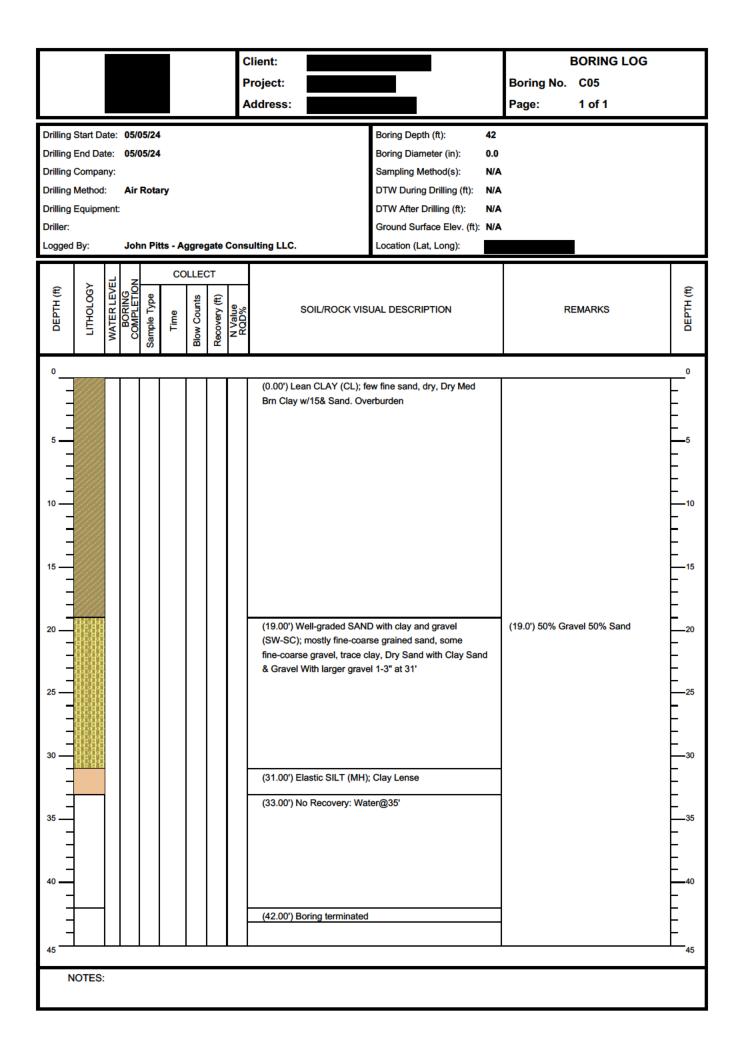


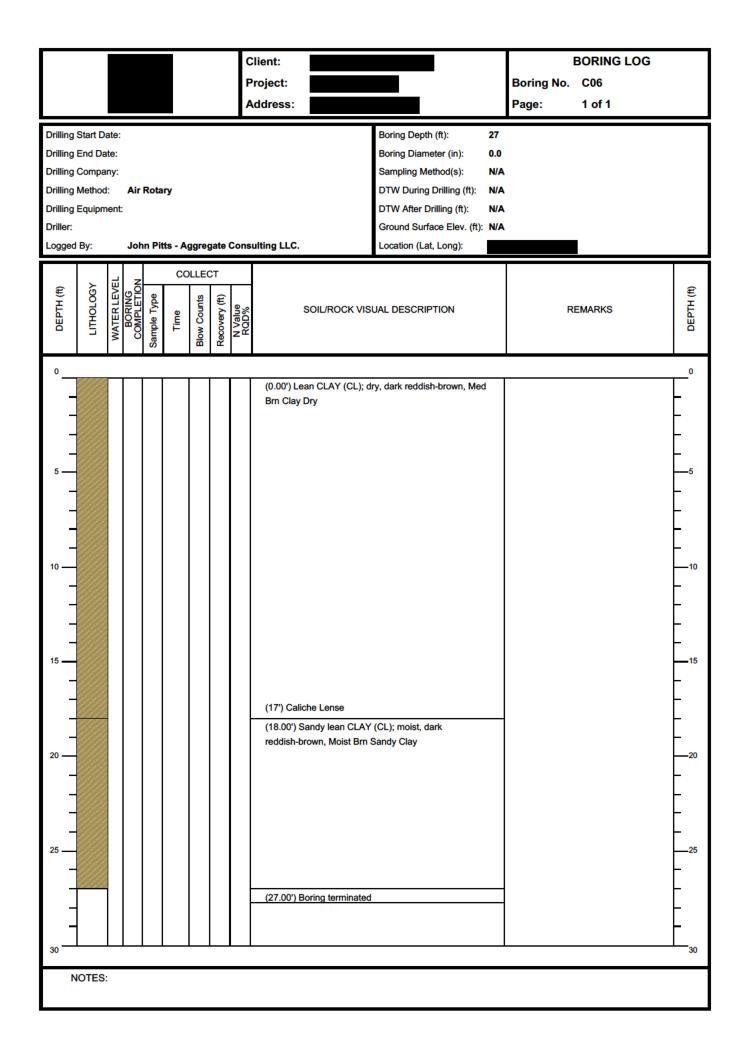


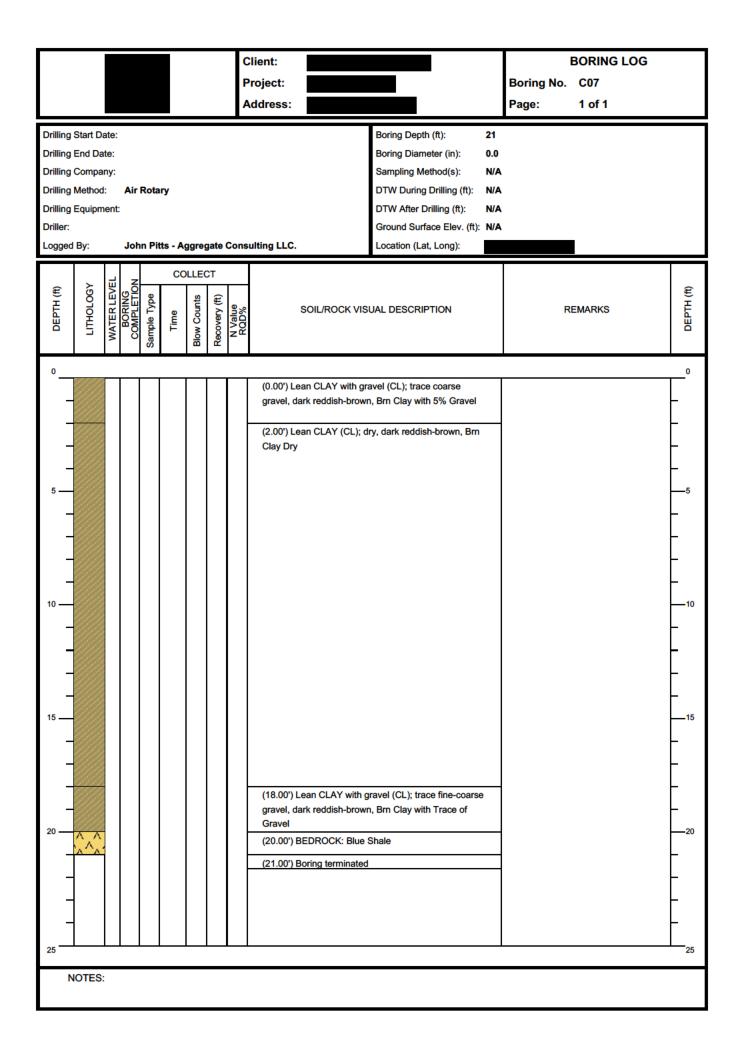


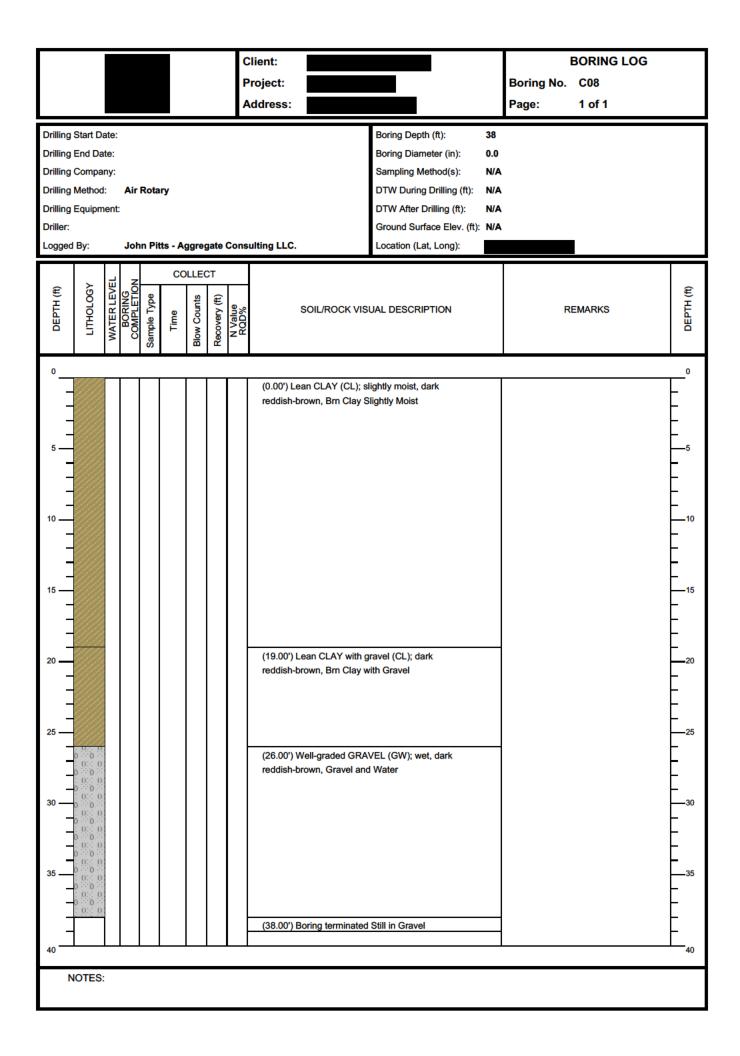


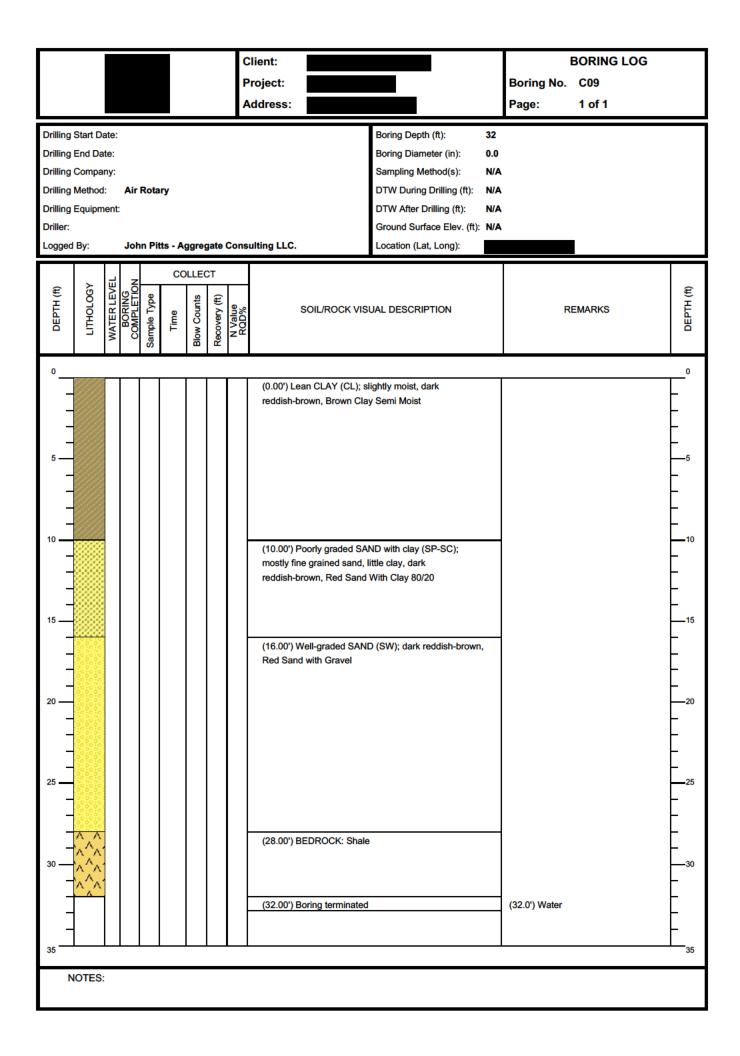


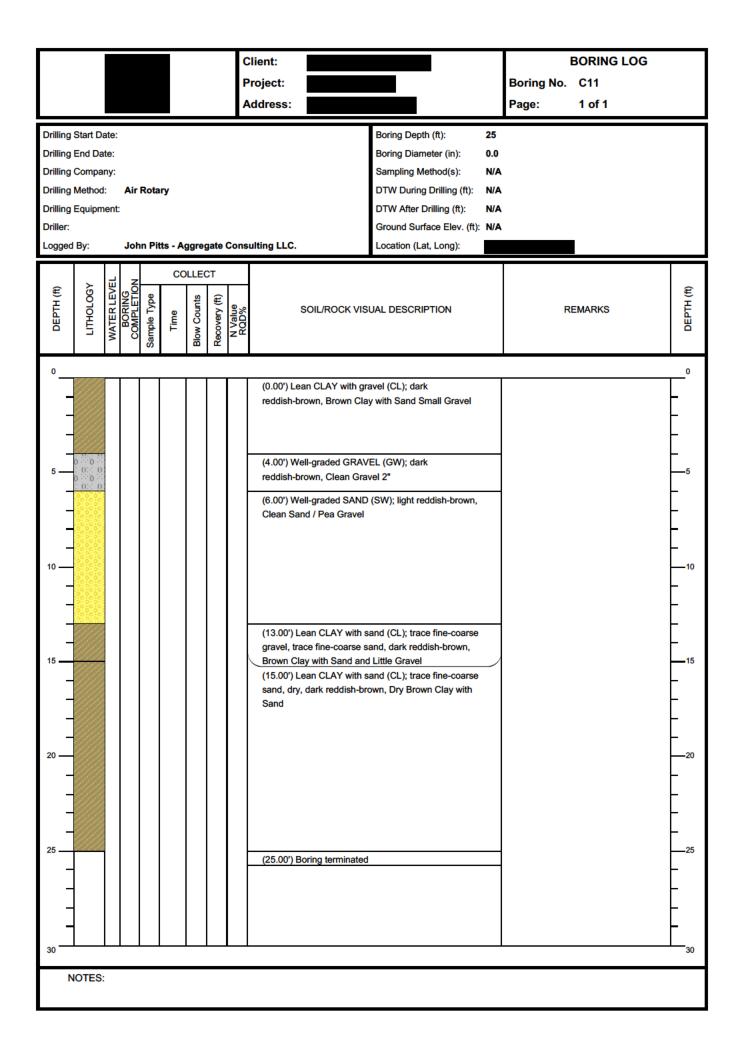


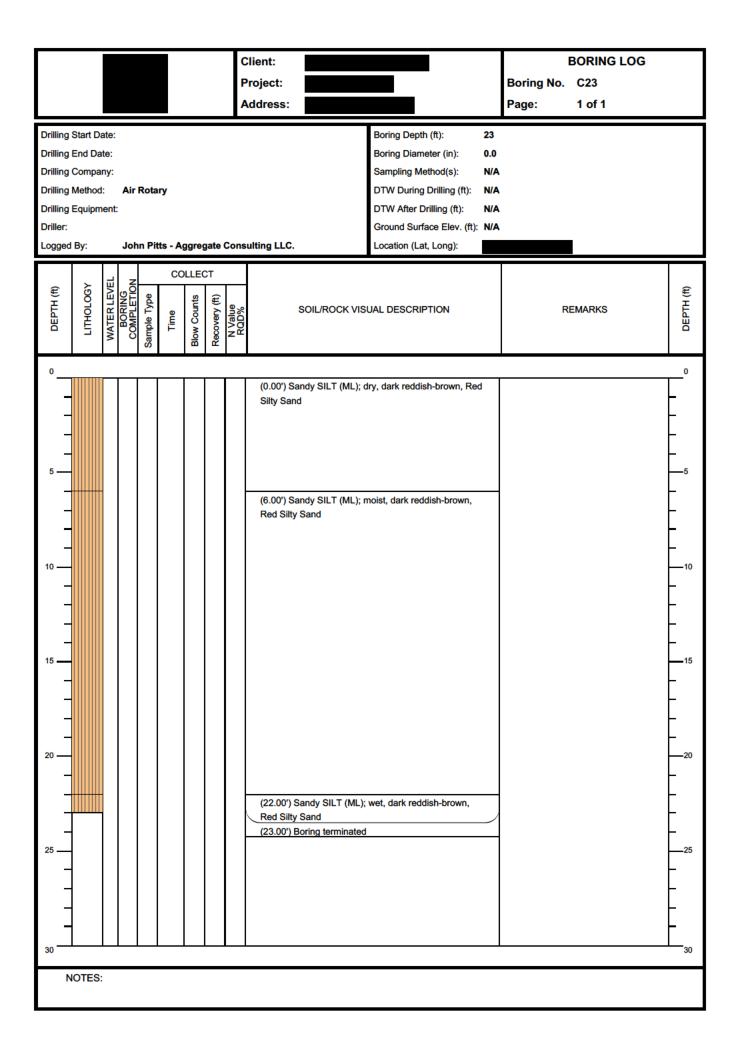


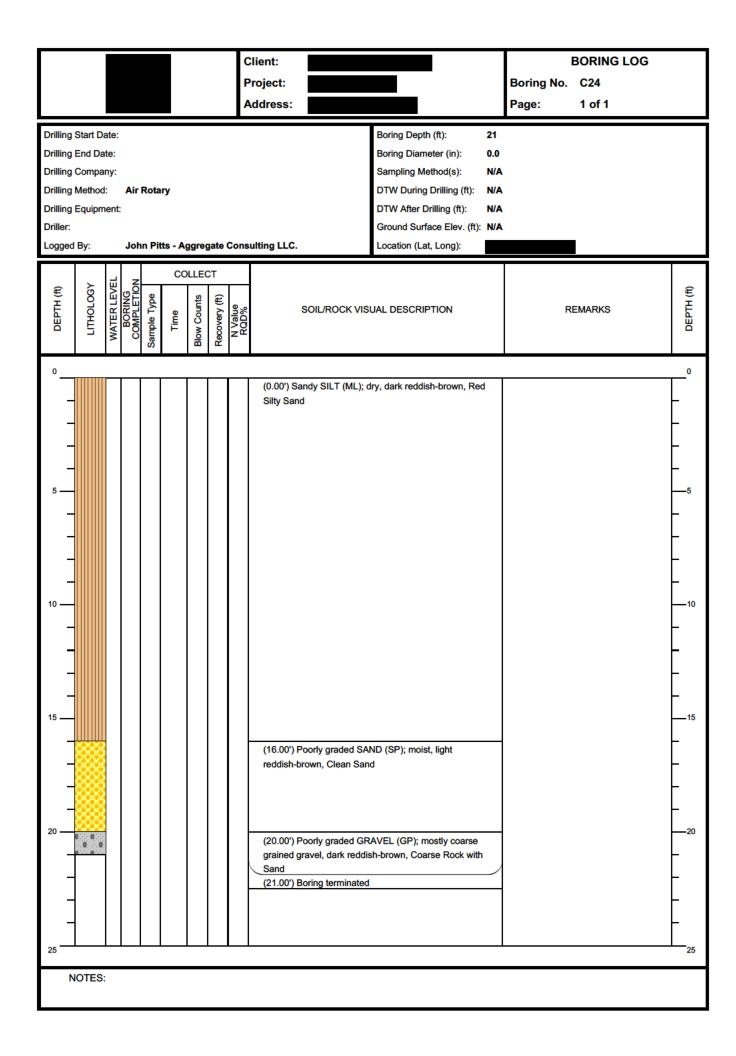


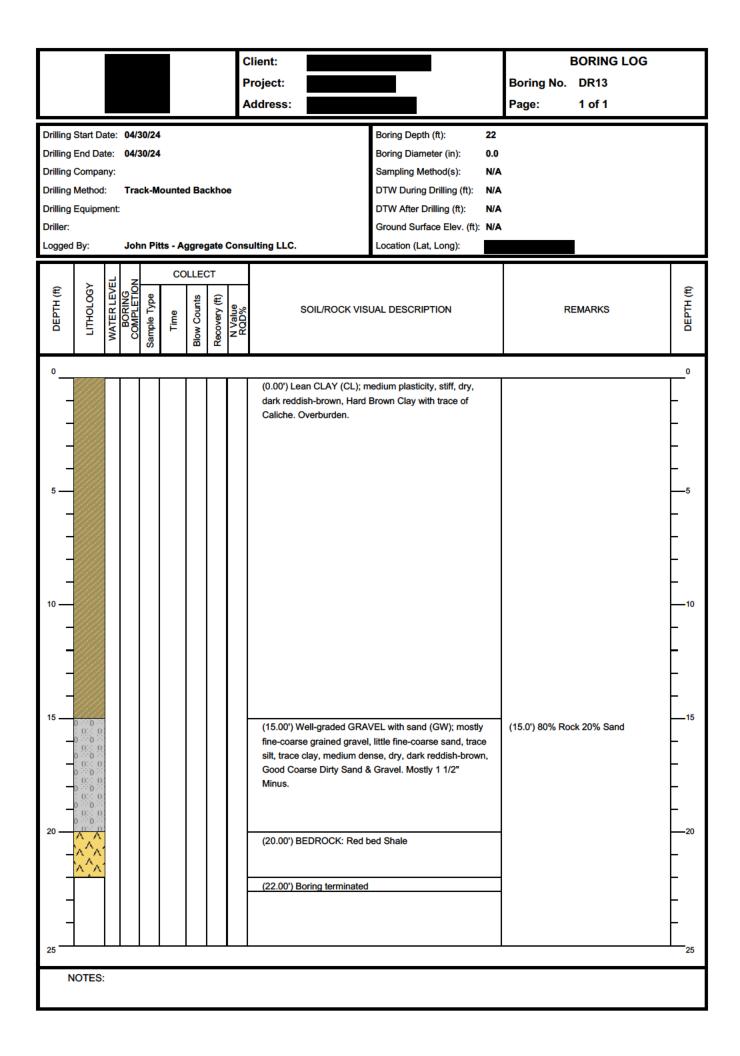


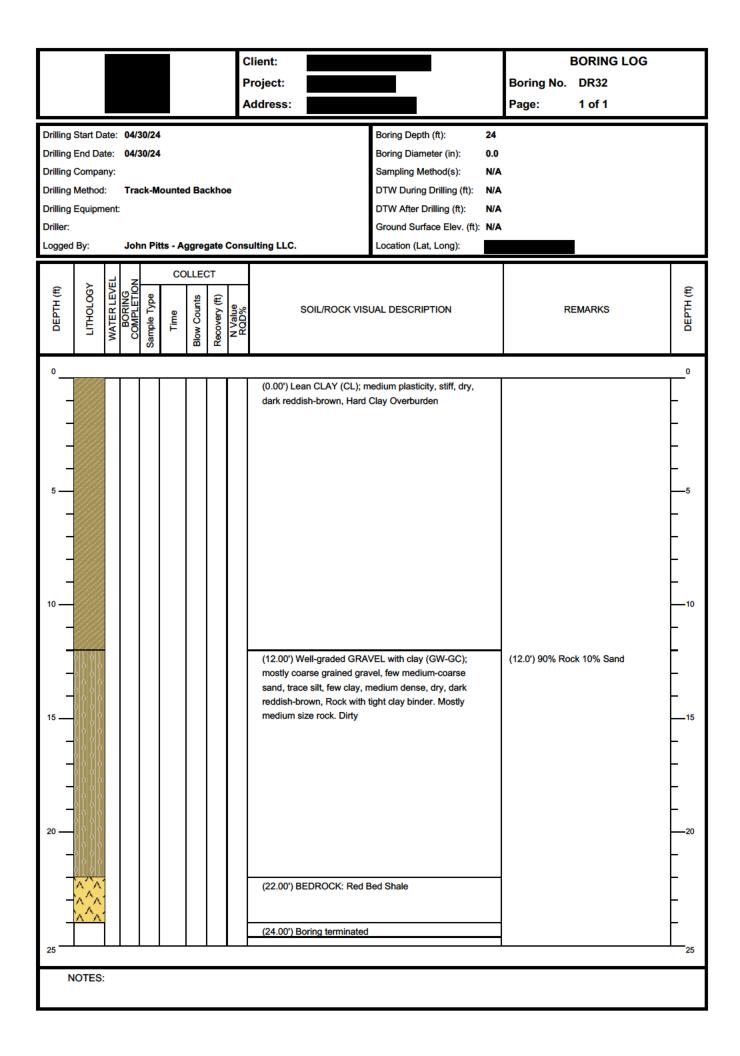


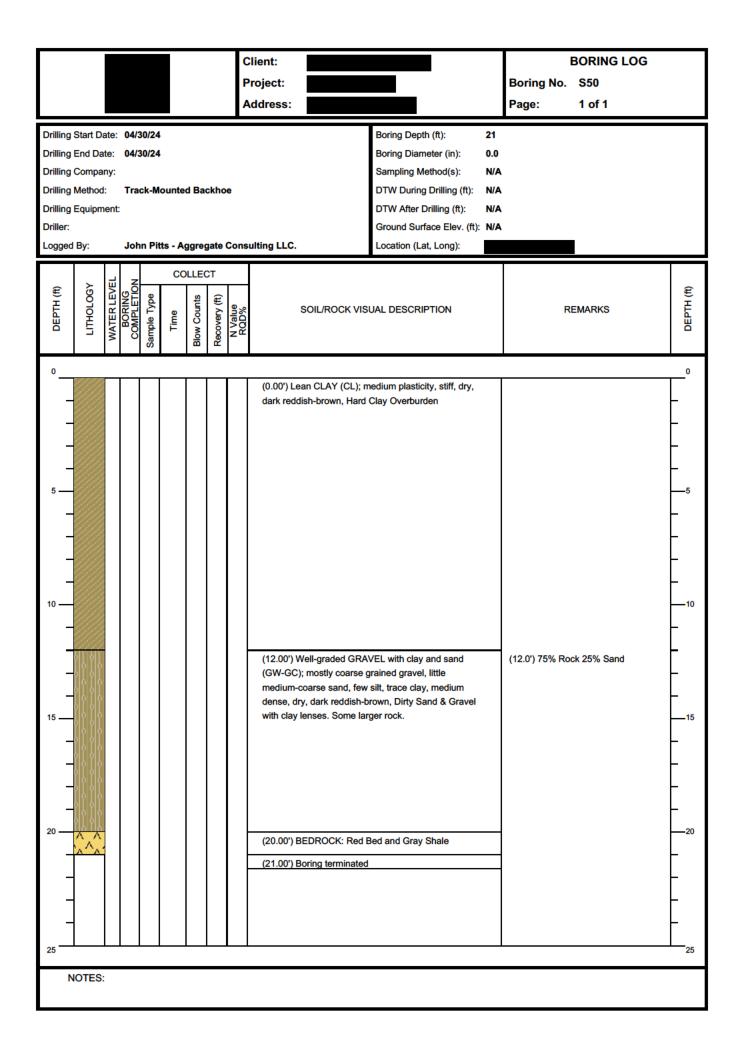


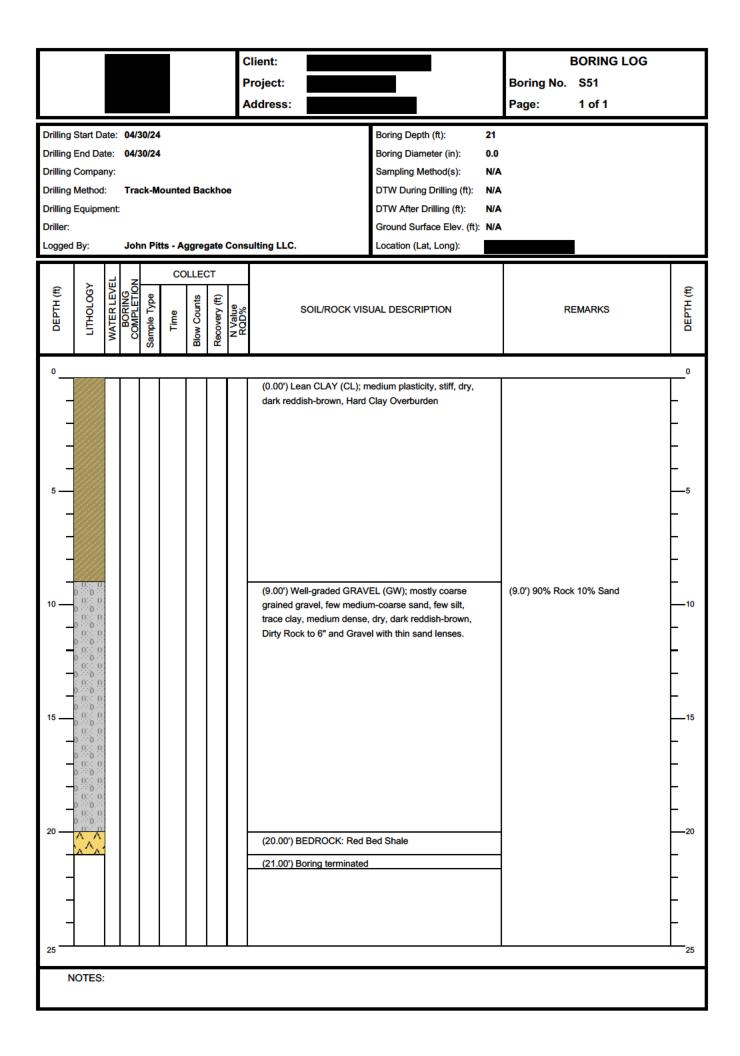


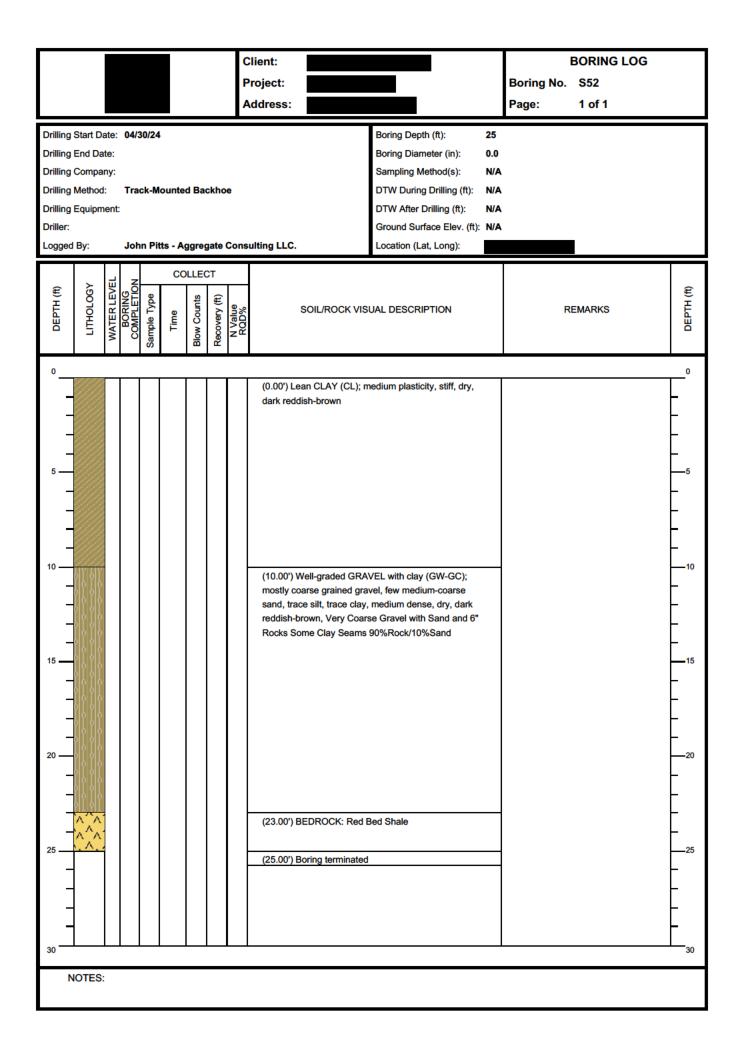


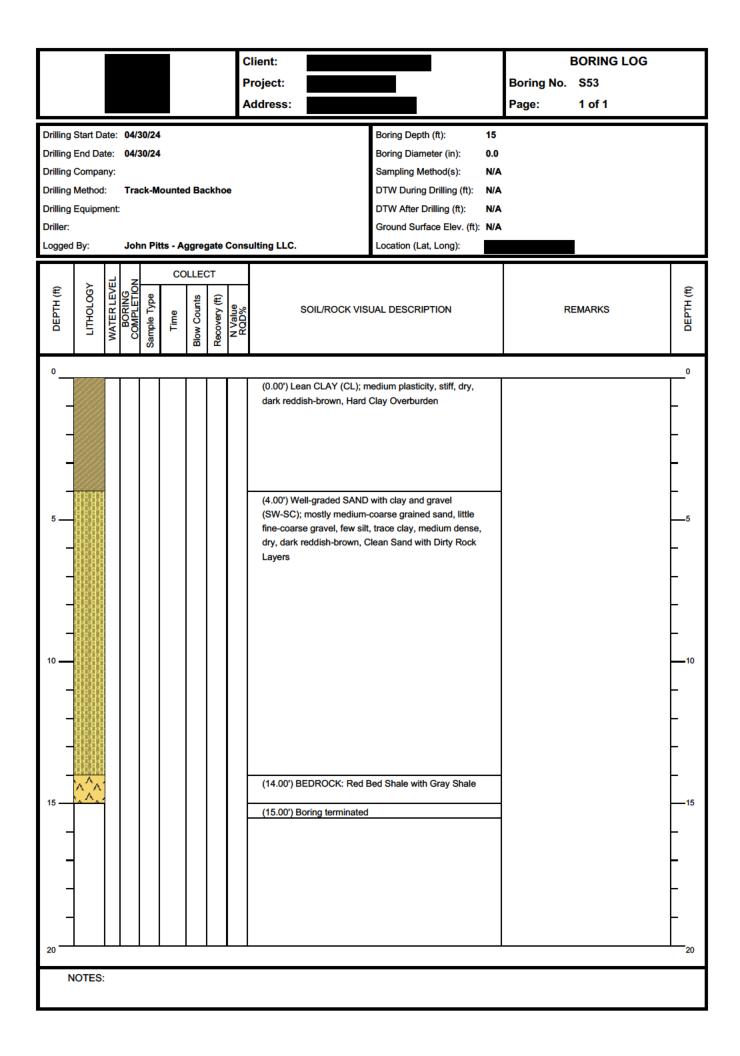


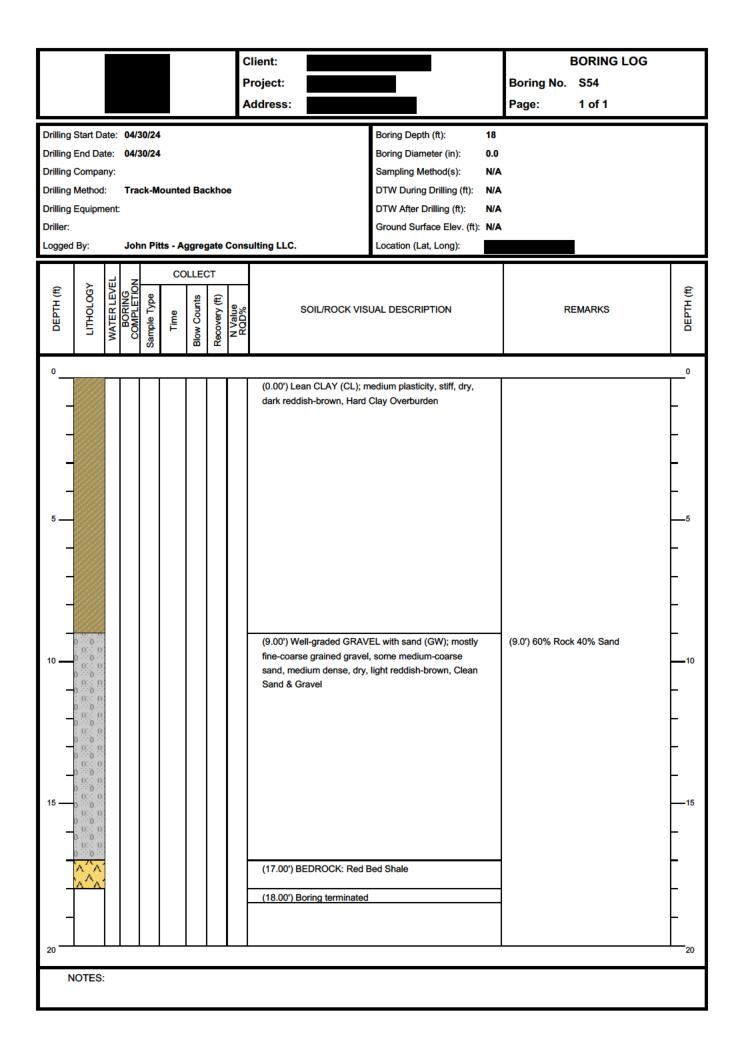


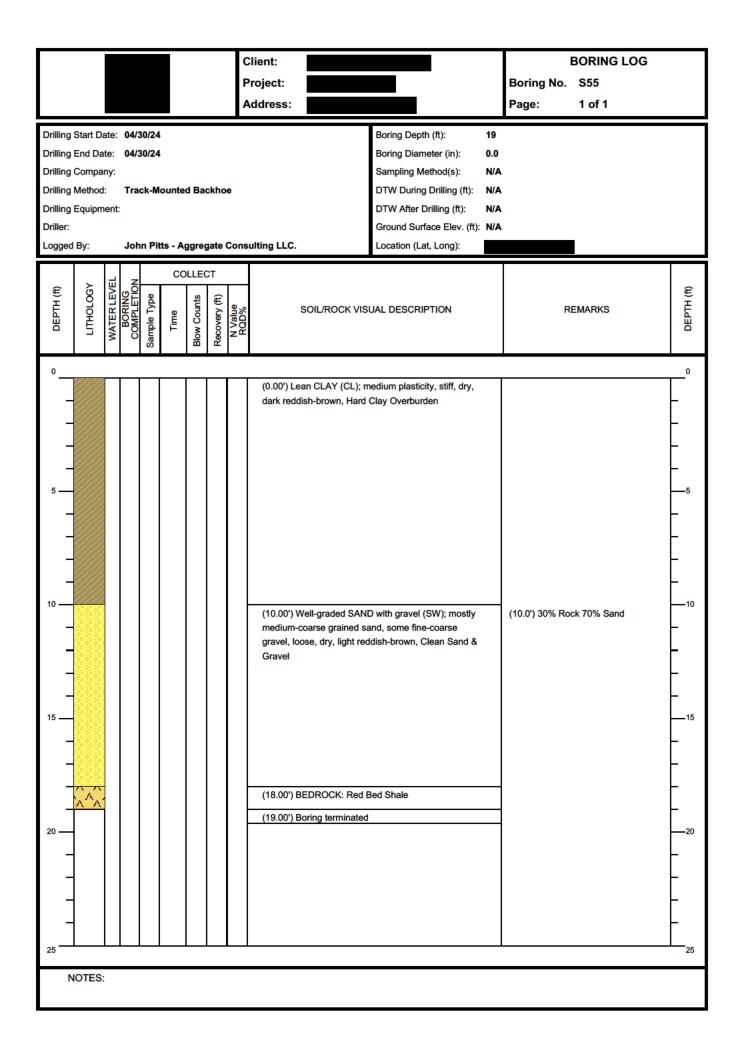


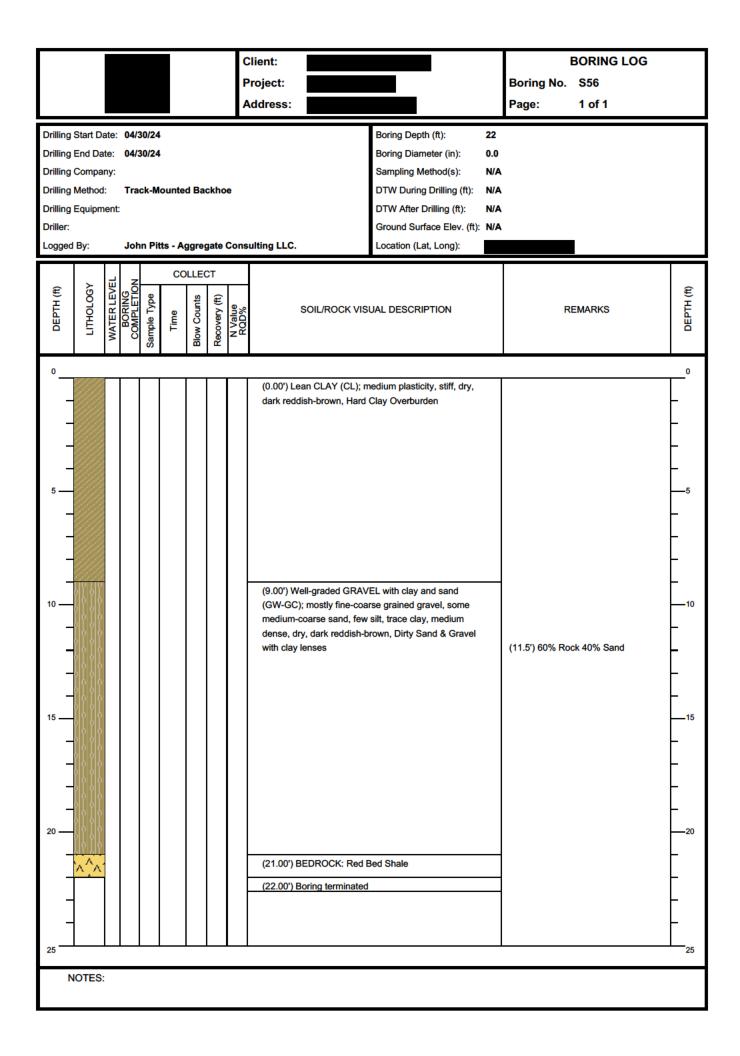












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