

DUE DILIGENCE GEOTECHNICAL REPORT

Woodland Project
345 North Pekin Road
Woodland, Washington

For
Trammell Crow Portland Development, Inc.
January 26, 2023

Project: TrammellCr-118-02

N|V|5

January 26, 2023

Trammell Crow Portland Development, Inc.
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Attention: Holly Huber

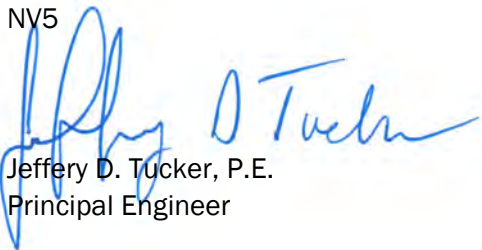
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Project: TrammellCr-118-02

NV5 is pleased to submit this due diligence geotechnical report for the Woodland Project site located at 345 North Pekin Road in Woodland, Washington. Our services for this project were conducted in accordance with our proposal dated November 9, 2022.

We appreciate the opportunity to be of service to you. Please contact us if you have questions regarding this report.

Sincerely,

NV5



Jeffery D. Tucker, P.E.
Principal Engineer

cc: Kirk Olsen, Trammell Crow Portland Development, Inc.

TAP:JDT:kt

Attachments

One copy submitted

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EXECUTIVE SUMMARY

The primary geotechnical considerations for the project are summarized as follows:

- Between 5.5 and 9 inches of liquefaction-induced settlement is possible at the ground surface during a seismic event. Differential settlement at the ground surface is expected to be approximately one-half of the total settlement over a 50-foot span. Provided the building is a single-story, concrete structure with column spacing of at least 50 feet and a seismic Risk Category of I/II, specialized foundation systems will not be required to support the building from a seismic perspective, provided the owner is willing to accept the risk of building damage after a seismic event.
- The native fine-grained soil below the surficial sand at the site is compressible and fill and floor slab loads can induce significant settlement. Where the combination of fill and floor slab loading exceeds 400 psf over the existing condition, a surcharge is recommended.
- Certain ground improvements can be used to reduce both liquefaction-induced and static settlement.
- Spread foundations supporting column loads up to 300 kips can be used to support the proposed building, provided the subgrade is prepared as described in the “Settlement Considerations” section and ground improvements have been performed to reduce the potential liquefaction settlement.
- Buildings with column loads of more than 300 kips should be supported on conventional spread footings on soil improvements or deep foundations.
- The near-surface soil at the site consists of sand fill with low fines content. The sand fill is capable of supporting some construction loading; however, it will likely not support large equipment and areas with heavy traffic, particularly in the wet season, and granular haul roads and staging areas may be necessary.
- Development was in the conceptual stages at the time this report was prepared. We recommend that NV5 be involved in development as it progresses and revise geotechnical recommendations if necessary.

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Appendix B

Cone Penetration Testing

B-1

CPT Logs

ACRONYMS AND ABBREVIATIONS

ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
BGS	below ground surface
CDSM	cement deep soil mix
CPT	cone penetration test
CSZ	Cascadia subduction zone
g	gravitational acceleration (32.2 feet/second ²)
H:V	horizontal to vertical
IBC	International Building Code
km	kilometers
MCE	maximum considered earthquake
M _w	moment magnitude
OSHA	Occupational Safety and Health Administration
pcf	pounds per cubic foot
pci	pounds per cubic inch
PGA	peak ground acceleration
psf	pounds per square foot
SPT	standard penetration test
USGS	U.S. Geological Survey

1.0 INTRODUCTION

This report presents the results of our due diligence geotechnical engineering evaluation for the Woodland Project site located at 345 North Pekin Road in Woodland, Washington. The site is shown relative to surrounding features on Figure 1. Figure 2 shows the existing conditions at the site. Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

2.0 PROJECT UNDERSTANDING

The primary option for the development will be a single approximately 935,000-square-foot structure with the long axis of the building oriented in the east to west direction in the center of the site. Based on correspondence with Trammell Crow Portland Development, Inc., the building will likely be a Risk Category I/II structure with a fundamental period of less than 0.5 second. Based on Table 12.12-3 of ASCE 7-16, the maximum tolerable differential seismic settlement of these types of structures is 4.5 inches.

3.0 PURPOSE AND SCOPE

The purpose of our services was to provide preliminary geotechnical engineering recommendations for design and construction of the future development. The specific scope of our services is summarized as follows:

- Reviewed available, published geologic information and our in-house files for geotechnical information near the site.
- Coordinated and managed the field explorations, including utility locates and scheduling subcontractors and NV5 field staff.
- Conducted the following explorations at the site:
 - Drilled two borings to depths of 81.5 and 101.5 feet BGS
 - Advanced four CPT probes to depths between approximately 80.5 and 81.4 feet BGS
- Maintained continuous logs of the borings and collected samples at representative intervals.
- Completed laboratory testing on soil samples collected from the borings that included the following:
 - Twenty-six moisture content determinations in general accordance with ASTM D2216
 - Eight particle-size analyses in general accordance with ASTM C117 or ASTM D1140
 - Two Atterberg limits tests in general accordance with ASTM D4318
 - Three organic content determinations in general accordance with ASTM D2974
 - Two consolidation tests in general accordance with ASTM D2435
 - Two dry density determinations in general accordance with ASTM D7263
- Prepared this due diligence report summarizing our findings, conclusions, and recommendations, including information related to the following:
 - Subsurface soil and groundwater conditions
 - Discussion of liquefaction potential at the site and mitigation alternatives
 - Discussion of settlement due to the new building loads, including recommendations for surcharging or other methods to mitigate the settlement

- Preliminary recommendations for site preparation, grading and drainage, stripping depths, fill type for imported material, compaction criteria, trench excavation and backfill, use of on-site soil, and wet/dry weather earthwork
- Preliminary recommendations for foundation support of the building
- Preliminary recommendations for preparing the floor slab subgrade
- Preliminary recommendations for the management of identified groundwater conditions that may affect the performance of structures or pavement
- Code-based seismic design parameters in accordance with ASCE 7-16 (we have assumed the fundamental period of the structure will be less than 0.5 second and that a site-specific seismic hazard analysis will not be required per ASCE 7-16 Section 20.3.1)

4.0 SITE CONDITIONS

4.1 GEOLOGIC CONDITIONS

The site is located within the northern portion of the Portland Basin that formed as a structural depression located in the Puget-Willamette Lowland physiographic province. The Portland Basin is a pull-apart depression that resulted from a northwest-trending tectonic dextral shear along fault zones located along the Coast Range to the west and the Cascade Range to the east (Evarts, 2002). The basin is filled with a thick sequence of sedimentary deposits formed by the Columbia River and late Pleistocene Missoula floods that overlie bedrock units.

The near-surface geologic unit is mapped as Quaternary alluvium. The unit consists of silt, fine to medium sand, and gravel that form the floodplains of the Lewis River (Evarts, 2002; Phillips, 1987). Underlying the alluvium are Pleistocene flood deposits (Missoula flood deposits) from the Glacial Lake Missoula outburst floods, which occurred between 13,000 and 15,500 years ago. The unit consists of silt; fine to coarse, horizontally stratified sand; and gravel. The material is made up of quartz and mafic lithic fragments. Water well logs from the Washington State Department of Ecology indicate the alluvium and flood deposits in the site vicinity range up to 150 feet thick locally throughout the area.

Underlying the alluvium and flood deposits is the Pliocene to Pleistocene Epoch (5 million to 1.5 million years before present) Troutdale Formation “lower member,” which consists of laminated silty clay, micaceous sand, poorly consolidated siltstone, and mudstone. The Troutdale Formation has been incised by the Columbia River during late Pleistocene low sea level stands that occurred as a result of maximum continental glacial periods. The fine-grained unit in the site vicinity is estimated from deep water well logs to range from 50 to 100 feet thick (Evarts, 2002; Gannett and Caldwell, 1998).

The fine-grained unit of the Troutdale Formation is underlain by the Miocene Epoch (20 million to 10 million years before present) Columbia River Basalt Group, which is a series of basalt flows that originated from southeastern Washington and northeastern Oregon. The Columbia River Basalt Group is considered the geologic basement unit for this report.

4.2 SURFACE CONDITIONS

The approximately 60-acre site is composed of three separate parcels (507350102, 507350104, and a portion of 507350103) of agricultural land. The site is bordered by undeveloped land, an industrial property, and residential properties to the north; North Pekin Road to the east; and undeveloped and residential properties to the south and west. The site is flat and has small wetland areas located on the north and west borders. The property is an active agricultural area and is currently surfaced with landscaped grass.

4.3 SUBSURFACE CONDITIONS

4.3.1 General

Subsurface conditions at the site were explored by drilling two borings (B-1 and B-2) to depths of 81.5 and 101.5 feet BGS and advancing four CPT probes (CPT-1 through CPT-4) to depths between approximately 80.5 and 81.4 feet BGS. The locations of all explorations are shown on Figure 2. Logs of the borings and laboratory testing results are presented in Appendix A. Logs of the CPTs are presented in Appendix B.

Subsurface conditions at the site generally consist of 33 to 38 feet of native sand with silt underlain by native silt and clay with occasional interbedded zones of silty sand or sand with silt to depths between 60 and 80 feet BGS. In most of the explorations, sand was observed beneath the fine-grained soil to the maximum depths explored. A detailed description of the subsurface soil is discussed below.

4.3.2 Soil Conditions

4.3.2.1 Shallow Sand and Gravel

Native sand with varying amounts of silt and gravel and gravel with silt and sand are present below the ground surface at the site. The sand is generally very loose to loose, with occasional zones of loose to medium dense gravel with silt. The sand is moist to wet and extends approximately 33 to 38 feet BGS.

4.3.2.2 Fine-Grained Soil

Beneath the sand and gravel is native fine-grained soil consisting of clay and silt with interbedded layers of silty sand and trace organics. The clay and silt are generally very soft to medium stiff. The fine-grained soil extends to depths between approximately 60 and 75 feet BGS in B-2, CPT-1, CPT-2, and CPT-4. The fine-grained soil extends to the maximum depths explored in B-1 and CPT-3, approximately 101.5 and 80.5 feet BGS, respectively.

Laboratory testing indicates the silt and clay have moderate to high plasticity with moisture contents that ranged from 39 to 99 percent at the time of exploration. Consolidation testing indicates the clay and silt have moderate to high compressibility.

4.3.2.3 Sand

Underlying the fine-grained soil is medium dense sand with varying amounts of silt. The sand is gray and wet. The sand extends to the maximum depth explored in B-2, CPT-1, CPT-2, and CPT-4.

4.3.3 Groundwater

Mud rotary drilling methods prevented the direct measurement of groundwater in the drilled borings; however, increased moisture of soil samples was observed at depths of approximately 10 to 15 feet BGS. Pore water dissipation testing in the CPTs indicated groundwater was present at depths of 9.5 to 12 feet BGS. Perched water may be present above the static groundwater, particularly in the wet season.

4.4 SEISMIC HAZARDS

4.4.1 Seismic Setting

4.4.1.1 Earthquake Source Zones

Three scenario earthquakes are possible with the local seismic setting. Two of the possible earthquake sources are associated with the CSZ, and the third event is a shallow, local crustal earthquake that could occur in the North American Plate. The three earthquake scenarios are discussed below.

4.4.1.2 Regional Events

The CSZ is the region where the Juan de Fuca Plate is being subducted beneath the North American Plate. This subduction is occurring in the coastal region between Vancouver Island and northern California. Evidence has accumulated suggesting that this subduction zone has generated eight great earthquakes in the last 4,000 years, with the most recent event occurring approximately 300 years ago (Weaver and Shedlock, 1991). The fault trace is mapped approximately 50 to 120 km off the Washington Coast.

Two types of subduction zone earthquakes are possible and considered in this study:

1. An interface event earthquake on the seismogenic part of the interface between the Juan de Fuca Plate and the North American Plate on the CSZ. This source is capable of generating earthquakes with a moment magnitude of 9.0.
2. A deep intraplate earthquake on the seismogenic part of the subducting Juan de Fuca Plate. These events typically occur at depths of between 30 and 60 km. This source is capable of generating an event with a moment magnitude of up to 8.0.

4.4.1.3 Local Events

An earthquake could occur on a local fault within the North American Plate. The closest local mapped faults are more than 20 km from the site and the potential for local crustal faulting is low.

4.4.1.4 Earthquake Source Contribution

We anticipate the fundamental period of structures constructed at the site will be between 0.2 and 0.5 second. Based on deaggregation by USGS, a majority of the site hazard is from the CSZ interface event (approximately 65 to 75 percent). The remainder of the hazard is from the crustal background seismicity (20 to 25 percent) and the CSZ intraplate events (5 to 10 percent).

4.4.2 Liquefaction

Liquefaction is caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles to near zero. Granular soil, which relies on interparticle friction for

strength, is susceptible to liquefaction until the excess pore pressures can dissipate. In general, loose, saturated sand soil with low silt and clay content is most susceptible to liquefaction. Silty soil with low plasticity is also susceptible to liquefaction or strain softening under relatively higher levels of ground shaking. We completed a liquefaction analysis to evaluate the possible magnitude of liquefaction settlement of the soft silt and loose sand layers encountered in the explorations.

We performed liquefaction analysis using the information from explorations and the results of laboratory testing. Triggering was completed in accordance with Boulanger and Idriss (2014). Groundwater was assumed at 10 feet BGS in analysis. Evaluation was completed for the CSZ interface event using $M_w = 9.0$ and $PGA = 0.25$ g. Due to the distance of mapped crustal faults (more than 50 km) from the site, the risk of a crustal event is low and was not considered in analysis.

Analysis indicates total seismic settlement at the ground surface as a result of liquefaction will range between 5.5 and 9 inches. Differential settlement is expected to be one-half of the total settlement over a 50-foot span (2.5 to 4.5 inches).

According to ASCE 7-16, seismic differential settlement must be less than the values determined in Table 12.13-3 or soil improvements or deep foundations are required to support buildings. Settlement tolerances in Table 12.13-3 are based on the type, column spacing, and risk category of structures. Based on our experience, warehouse- or distribution-type buildings are typically Risk Category I or II. Table 1 shows the maximum tolerable seismic settlement limits for various structure types and column spacing for Risk Category I/II structures. As shown in the table, the allowable seismic settlement increases with column spacing and decreases with multi-story structures. We should be contacted to provide additional information if the structures are Type III or IV.

Table 1. ASCE 7-16 Allowable Seismic Differential Settlement for Risk Category I or II Structures

Structure Type	Column Spacing (feet)					
	25	30	35	40	45	50
Single-Story Structure with Concrete or Masonry Walls	2.2	2.7	3.1	3.6	4.0	4.5
Other Single-Story Structures	4.5	5.4	6.3	7.2	8.1	9.0
Multi-Story Structure with Concrete or Masonry Walls	1.5	1.8	2.1	2.4	2.7	3.0
Other Multi Multi-Story Structures	3.0	3.6	4.2	4.8	5.4	6.0

Assuming a single-story, concrete building with column spacing of at least 50 feet (and a Risk Category of I/II) as anticipated, the predicted differential settlement (2.5 to 4.5 inches) is less

than or equal to the maximum allowable limit in Table 12.13-3 of ASCE 7-16 of 4.5 inches. Accordingly, buildings with column spacing of at least 50 feet can be supported on conventional spread footings and soil improvements or deep foundations are not required, provided the owner is willing to accept the potential for building damage after a seismic event (damage potential to be provided by project structural engineer).

Table 1 should be used to determine the maximum allowable differential settlement if column spacing is less than 50 feet. In general, if the tolerable limit in Table 1 is less than 4.5 inches, soil improvements or deep foundations will be required.

Per ASCE 7-16 Section 12.13.9, foundation ties will likely be required for the building because anticipated differential settlement is greater than one-quarter of the tolerances in Table 12.13-3 of ASCE 7-16.

4.4.3 Lateral Spreading

4.4.3.1 General

Lateral spreading is a liquefaction-related seismic hazard that occurs on gently sloping or flat sites underlain by liquefiable sediment adjacent to an open face, such as a riverbank. Liquefied soil adjacent to an open face can flow toward the open face, resulting in lateral ground displacement. Based on the topography of the site, lateral spreading is not considered a hazard.

5.0 DESIGN

5.1 SETTLEMENT CONSIDERATIONS

5.1.1 General

Grading plans had not been developed at the time of this report. Based on correspondence with the design team, maximum floor slab loading will be up to 500 psf. The near-surface soil generally consists of up to 33 to 38 feet of sand with varying amounts of silt underlain by soft to medium stiff, compressible clay and silt that are prone to settlement under structural and/or fill loads. Based on laboratory testing and analysis, a net increase in pressure of 400 psf above the existing condition from the combination of fill and floor slab loading will result in settlement that exceeds typical static foundation settlement tolerances of 1 inch total and 0.5 inch differential over a 50-foot span.

Where the combination of fill and floor slab loading exceeds 400 psf above the existing condition, we recommend building footprints be surcharged. The net increase in load should be calculated assuming a new fill density of 120 pcf and an in-place soil density of 110 pcf. For example, if floor slab loading is 500 psf and new fills of 3 feet are planned, the net pressure increase is 860 psf ($500 \text{ psf} + 3 \text{ [feet]} \times 120 \text{ pcf} = 860 \text{ psf}$). Alternatively, if the floor slab loading is 500 psf and a 4-foot cut is planned, the net pressure increase is 20 psf ($500 \text{ psf} - 4 \text{ [feet]} \times 110 \text{ pcf} = 20 \text{ psf}$).

5.1.2 Surcharge

We recommend a surcharge of 200 psf above the anticipated floor slab loading. The pressure should be calculated from finished subgrade and the unit weight of the surcharge should be assumed to be 100 pcf. For example, if the floor slab loading is 500 psf, a surcharge pressure of

700 psf is required above finished subgrade (500 psf floor load + 200 psf surcharge = 700 psf). The resulting surcharge height will be 7 feet above finished subgrade (700 psf/100 pcf = 7 feet).

The actual surcharge duration should be evaluated based on the results of settlement plate monitoring as described in the following section. The surcharge should extend laterally at least 5 feet beyond surcharge area in building footprints. The surcharge embankment side slopes should be inclined no steeper than 1H:1V.

Surcharging can be accomplished in stages (rolling surcharge) if there is not enough material available to cover all of the building footprints or if buildings are constructed in multiple phases. If multiple surcharge stages occur over a single building footprint, we recommend that successive surcharge areas overlap by at least 20 feet. Recommendations for surcharge heights and duration will not change for a rolling surcharge, provided the building areas and loads do not change.

All fill placed below finished soil subgrade elevation should be placed and compacted as structural fill. Surcharge material placed above finished subgrade does not need to be compacted as structural fill, provided the total unit weight of the material is at least 100 pcf.

Due to the presence of clay, fill-induced consolidation could be longer than normal. Actual completion of fill-induced settlement will vary based on fill thickness; however, settlement will generally be complete within 14 to 20 weeks of placing fill to final grade. Settlement plates should be installed to monitor settlement and determine when it is appropriate to remove the surcharge.

It is important to note that surcharging reduces static settlement as a result of fill and floor slab loading only and the building will still be subject to the seismic settlements predicted in the “Seismic Hazards” section.

5.1.3 Settlement Monitoring

Settlement plates should be installed to determine the surcharge duration. A typical settlement plate detail is shown on Figure 3. For preliminary planning purposes, we recommend settlement monitoring points be installed at a rate of one per 20,000 square feet surcharge constructed.

For ease in handling, the casing and rod portions of the settlement plate are usually installed in 5-foot sections. As filling progresses, couplings are used to install additional sections. Continuity in the monitoring data is maintained by reading and recording the top of the measurement rod immediately prior to and following the addition of new sections. Care must be taken during fill construction not to bend or break the rods.

The settlement monitoring points should be surveyed twice weekly for at least six weeks. The settlement monitoring points should be monitored using survey equipment with accuracy of 1/100th of a foot and referenced to a stationary datum established at least 500 feet from fill placement. The survey data should be supplied to NV5 within three days of the survey.

5.2 FOUNDATION SUPPORT

5.2.1 General

Based on discussion with Trammell Crow Portland Development, Inc., we anticipate the building at the site will be a single-story, concrete structure with column spacing of at least 50 feet and a Risk Category of I/II. Maximum column loads for these types of structures are typically less than 300 kips, and static foundation design tolerances are typically 1 inch total and 0.5 inch differential between adjacent footings.

As described in the “Seismic Hazards” section, the site is liquefiable during a seismic event. Estimated seismic settlement ranges between 5.5 and 9 inches, with differential seismic settlement over approximately 50 feet expected to be 2.5 to 4.5 inches.

Assuming a single-story, concrete building with a Risk Category of I/II and column spacing of at least 50 feet, the anticipated seismic differential settlement at the site is less than the allowable limits in Table 12.12-3 of ASCE 7-16 and buildings with column loads less than 300 kips can be supported on conventional spread footings.

If column loads exceed 300 kips, a reduction in the seismic settlement beneath building footings is desired, or column spacing changes and the differential settlements in Table 12.13-3 of ASCE 7-16 are exceeded, soil improvements or deep foundations will be required to support the building.

A discussion of foundation alternatives for supporting structures at the site is presented in the sections below.

5.2.2 Conventional Spread Footings

Conventional spread footings can be used to support building column loads up to 300 kips, provided the following:

- The subgrade is prepared as described in the “Settlement Considerations” section.
- The predicted seismic differential settlement is less than values described in Table 12.12-3 of ASCE 7-16.
- The owner is willing to accept the potential for building damage in a seismic event.

Footings should be proportioned on a maximum allowable bearing pressure of 3,000 psf. This value is a net bearing pressure; the weight of the footing and overlying backfill can be ignored in calculating footing sizes. The recommended allowable bearing pressure applies to the total of dead plus long-term live loads and can be increased by 50 percent for short-term loads resulting from wind or seismic forces. Continuous wall and isolated spread footings should be at least 18 and 24 inches wide, respectively. The bottom of exterior footings should be at least 18 inches below the lowest adjacent exterior grade. The bottom of interior footings should be established at least 12 inches below the base of the slab.

Provided the subgrade is prepared as described in the “Settlement Considerations” section and total static post-construction settlement is expected to be less than 1 inch, differential settlement will be less than 0.5 inch over a 50-foot span. Potential seismic settlements are described in “Seismic Hazards” section.

Lateral loads on building and retaining wall footings can be resisted by passive earth pressure on the sides of the structures and by friction on the base of footings. The allowable passive earth pressure for footings confined by the on-site soil or planned structural fill is 300 pcf. Adjacent floor slabs, pavement, or the upper 12-inch depth of adjacent, unpaved areas should not be considered when calculating passive resistance.

An allowable coefficient of friction equal to 0.35 can be used for footings bearing on sand.

All footing subgrade should be evaluated by a representative of NV5 to confirm suitable bearing conditions. Localized over-excavation of footing subgrade may be required to penetrate soft, loose, or deleterious material.

5.2.3 Soil Improvements

5.2.3.1 General

Soil improvements consisting of deep dynamic compaction, stone columns, aggregate piers, and CDSM columns could be used to support the building if column loads exceed 300 kips. Deep dynamic compaction, stone columns, and aggregate piers can likely only be used to support column loads up to 500 to 1,000 kips (this will vary with soil improvement type), and CDSM columns extending to depths up to 80 feet BGS will likely be required if loading is more than 1,000 kips.

Deep dynamic compaction, stone columns, and CDSM columns can also be used to reduce or limit liquefaction settlement at the site.

Soil improvement systems are typically designed by a specialty design-build contractor to adhere to design criteria established by the design team. Soil improvements may be used in combination with surcharging described in the “Settlement Considerations” section to meet typical building static settlement tolerances.

5.2.3.2 Deep Dynamic Compaction

Dynamic compaction is a soil improvement technique for predominately granular soil in which a large weight is dropped from specific heights. The energy from the impact of the weight densifies the soil below the ground surface. Dynamic compaction is typically designed and completed by a specialty contractor and completed in a grid pattern with weights of 6 to 25 tons and drop heights of up to 80 feet. The process generally includes 7 to 15 higher energy drops at each location in the grid pattern as well as ironing passes to compact loose soil around the grid caused from impact. Ironing passes do not require the same number of drops as the high energy drops. Deep dynamic compaction can typically achieve improvement to depths of 25 feet BGS. After dynamic compaction is complete, the building can be supported on conventional spread footings bearing directly on the improved soil.

Deep dynamic compaction at the site will densify the near-surface sand, provide higher bearing capacities, and reduce seismic settlement. Based on our experience, spread footings supported on soil improved with deep dynamic compaction can typically be sized using an allowable bearing pressure of up to 4,000 psf. Provided a minimum SPT N-value in the improvement zone of 25 to 30 blows, we anticipate a total seismic settlement 2 to 3.5 inches and the amount of settlement observed at the surface be approximately 0.5 inch to 1.5 inches. Verification of the densification should be determined by post-construction SPT testing.

Prior to the start of production dynamic compaction, test areas should be completed with varying combinations of drop heights, spacing, and number of drops to determine the appropriate combination for production. Dynamic compaction should extend a minimum distance of 20 feet beyond the footprint of the building. Dynamic compaction will result in craters from compaction of the soil. After completion of dynamic compaction, craters should be leveled or filled with material and compacted as structural fill. This is typically completed by the earthwork contractor and is not part of the specialty contractor's scope of work.

Because dynamic compaction does not densify the compressible soil below the sand, surcharging will likely be required in combination with deep dynamic compaction to meet typical static design tolerances for the building.

5.2.3.3 Stone Columns

Conventional spread footings bearing on stone columns can be used to support buildings with column loads greater than 300 kips and likely up to 600 kips. Stone columns are constructed by inserting a vibrating probe into the subsurface soil to the desired depth. As the probe is extracted, the void is backfilled with crushed rock aggregate. Stone columns reinforce and densify the surrounding soil matrix, reducing the potential for liquefaction to occur. Cement can be mixed into the crushed rock for stone columns for added strength and stiffness to resist lateral loads.

Stone columns can be used to increase bearing capacity of the existing soil and reduce seismic settlement. Stone column ground improvement systems are designed by specialty design-build contractors. Based on our experience, spread footings supported on stone column ground improvement can typically be sized using an allowable bearing pressure of up to 4,000 psf. Testing in the immediate vicinity of the site suggests a single 36- to 42-inch-diameter stone column installed to a depth of approximately 35 to 40 feet BGS can achieve an allowable axial capacity of approximately 100 kips.

The magnitude of liquefaction mitigation from stone columns will depend on the depth of installation. If stone columns are installed to the base of the sand (approximately 30 feet BGS), we anticipate total seismic settlement of the site can be reduced to less than 2 inches. If stone columns are installed to a depth of 40 feet BGS, we anticipate total seismic settlement will be less than 1 inch. Differential seismic settlement is expected to be one-half the total settlement over a distance of 50 feet. Stone columns used to reduce seismic settlement will likely need to extend 10 to 20 feet beyond the edges of footings.

If stone columns are installed beneath footings only, surcharging will likely be required to limit static settlement from fill and slab loading. Alternatively, static settlement from the combination of foundation, fill, and floor slab loading could be limited to design tolerances if stone columns are installed beneath entire building footprints. We anticipate stone columns will need to be installed to depths of at least 50 feet BGS beneath the entire building footprint to limit static settlement to typical design tolerances discussed in this report.

NV5 should be allowed to review the final design and proposed installation methods by the specialty contractor. A representative of our firm should observe the installation of test columns and quality control testing. We should be present during installation of production columns to confirm that soil conditions are as anticipated. We should also review the data obtained during installation to confirm that the expected design bearing pressure and settlement criteria can be achieved. We recommend that a test program be implemented at the start of construction to verify that the selected stone column size and spacing will be adequate or to evaluate other possible configurations.

5.2.3.4 Aggregate Piers

Aggregate piers are a ground improvement system that consists of installing compacted aggregate piers that reinforce and improve the soil. Aggregate piers can be used to support moderate loading generally up to 800 to 1,000 kips. In general, aggregate pier foundations consist of 2- to 3-foot-diameter drilled holes backfilled with compacted crushed rock. The crushed rock is placed in the hole in lifts and compacted. Piers are typically arranged in a grid pattern to provide uniform support for foundations. After installation of the aggregate piers, buildings are supported on conventional spread footings bearing directly on the piers.

Aggregate piers are used to increase bearing pressures of soil but do not reduce liquefaction. Accordingly, buildings constructed on aggregate piers will be subject to the seismic settlements discussed in the “Seismic Considerations” section. In addition, buildings supported on aggregate piers will not densify soft soil below the sand, and surcharging may be required in combination with aggregate piers to meet typical static design tolerances for the building.

Aggregate pier foundations are typically proprietary systems designed and constructed by specialty contractors. The allowable bearing pressure for shallow foundations supported on rammed aggregate piers is typically 4,000 to 6,000 psf. This value can typically be increased by one-third when considering transient loads, such as wind and seismic forces. A specialty contractor should be contacted to provide the actual allowable bearing pressures and aggregate pier configurations if they are being considered for this project.

If aggregate piers are used for this project, we recommend that NV5 be allowed to review the final design and proposed installation methods. A representative of our firm should observe test pier installation and load testing and review the data obtained to confirm that the expected design bearing pressure and settlement criteria can be achieved. We should also be present during installation of production piers to confirm that soil conditions are as anticipated.

5.2.3.5 CDSM Columns

Conventional spread footings bearing on CDSM columns can be used to support moderate to heavy building column loading. CDSM columns improve weak soil by mechanically mixing it with cement slurry. CDSM columns are installed using a drill equipped with radial mixing paddles located near the bottom of the drill rods used to mix cement slurry into the subsurface soil. Slurry is pumped through the drill rods as the drill bit is advanced, and the soil and slurry are mixed together as the drill bit is advanced and withdrawn. The process constructs individual CDSM column elements to increase bearing capacity and decrease settlement. CDSM columns typically vary in diameter between 48 and 72 inches. Spoils generated during installation can be used on site as structural fill or hauled off site. A 12- to 24-inch-thick layer of compacted angular crushed rock is typically placed between the top of the CDSM columns and the bottom of the foundations to distribute foundation loads to the CDSM columns and to provide a working surface for constructing the foundations.

CDSM columns can mitigate liquefaction if installed in a lattice pattern; however, due to the cost associated with a lattice system, it is more likely that CDSM columns would be installed beneath footings to depths up to 80 feet BGS to achieve the required skin friction to support the structures. Liquefaction settlement, as described in the “Seismic Considerations” section, would still occur, but the CDSM columns would be designed to incorporate the downdrag effects as a result of the seismic settlement.

If CDSM columns are installed beneath foundations only, floor slabs will be subject to the static settlement from fill and floor loads as described in the “Settlement Considerations” section and surcharging may be needed to control slab settlement. In addition, floor slabs would be subject to the seismic settlement as described in the “Seismic Considerations” section.

CDSM columns can be used to structurally support floor slabs and mitigate both static and seismic settlement if they are installed beneath the entire slab in a grid pattern and extend to medium dense to dense sand.

CDSM column ground improvement systems are designed by a design-build contractor. Based on our experience, foundations supported on CDSM columns can typically be sized using an allowable bearing pressure of at least 4,000 to 6,000 psf. This can typically be increased by one-third when considering transient loads, such as wind and seismic forces.

If CDSM column ground improvement is designed by a specialty contractor, we recommend that NV5 be allowed to review the final design and proposed installation methods. A representative of our firm should observe the installation of test columns and quality control testing. We should be present during installation of production columns to confirm that soil conditions are as anticipated. We should also review the data obtained during installation to confirm that the expected design bearing pressure and settlement criteria can be achieved.

5.3 SEISMIC DESIGN CRITERIA

The building at the site will likely be designed in accordance with the 2020 IBC and ASCE 7-16. Due to the potential for liquefaction, the seismic site class at the site is F. ASCE 7-16 Section 20.3.1 requires a site-specific ground motion analysis be completed for structures with a

fundamental period greater than 0.5 second that are located within a Site Class F. If structures have a fundamental period of less than 0.5 second, seismic design parameters can be determined using the pre-liquefaction class.

Based on experience, most single-story, warehouse- or distribution-type buildings are concrete structures with fundamental periods less than 0.5 second, and seismic design parameters can be in accordance with the pre-liquefaction site classification. Multi-story buildings over three stories in height could have fundamental periods greater than 0.5 second and may require a site-specific seismic hazard evaluation.

Based on shear wave velocity testing in CPTs at the site, a pre-liquefaction seismic site class of E is appropriate. A site class of E can be used for design, provided Exception 3 in ASCE 7-16 Section 11.4.8 is met. If the exception is not met, a site-specific seismic analysis will be required. Seismic design parameters in accordance with ASCE 7-16 Site Class E (and Exception 3 of Section 11.4.8) are presented in Table 2. The pre-liquefaction site class of E is applicable for seismic design parameters only, and additional requirements for buildings on Site Class F soil should be incorporated into the design of the building (i.e., foundation ties). A site-specific seismic evaluation was not included in our due diligence scope of services; however, building-specific, site-specific hazard evaluations could potentially reduce the design parameters in Table 2.

Table 2. Seismic Design Parameters

Seismic Design Parameter	Short Period (T_s)	1 Second Period (T_1)
MCE Spectral Acceleration	$S_s = 0.823 \text{ g}$	$S_1 = 0.394 \text{ g}$
Site Class	F*	
Site Coefficient	$F_a = 1.300$	$F_v = 4.0$
Adjusted Spectral Acceleration	$S_{MS} = 1.070 \text{ g}$	$S_{M1} = 1.576 \text{ g}$
Design Spectral Response Acceleration Parameters	$S_{DS} = 0.713 \text{ g}$	$S_{D1} = 1.051 \text{ g}$

* Seismic design parameters in accordance with a seismic site class of E per Exception 3 in ASCE 7-16 Section 11.4.8.

5.4 FLOOR SLABS

Floor slab subgrade should be prepared in accordance with the “Site Preparation” and “Settlement Considerations” sections. Adherence to these sections will limit static settlement to design tolerances; however, floor slabs will be subject to the seismic settlements described in the “Seismic Hazards” section, unless the subgrade soil is improved or the floor slab is structurally supported by deep foundations.

A modulus of reaction of 125 pci can be used for slabs-on-grade constructed on subgrade prepared as recommended. A minimum 6-inch-thick layer of imported granular material should be placed and compacted over the prepared subgrade to assist as a capillary break. The floor

slab base rock should be compacted crushed rock or crushed gravel. The imported granular material should be placed in one lift and compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D1557. Floor slab base rock contaminated with excessive fines (greater than 5 percent by dry weight passing the U.S. Standard No. 200 sieve) should be replaced.

Flooring manufacturers often require vapor barriers to protect flooring and flooring adhesives. Many flooring manufacturers will warrant their product only if a vapor barrier is installed according to their recommendations. Selection and design of an appropriate vapor barrier, if needed, should be based on discussions among members of the design team. We can provide additional information to assist you with your decision.

All slab subgrade should be evaluated by the geotechnical engineer to confirm suitable bearing conditions. Observations should also confirm that loose or soft material, organic material, unsuitable fill, prior topsoil zones, and softened subgrade have been removed and replaced with structural fill.

5.5 DRAINAGE

5.5.1 Temporary

During work at the site, the contractor should be made responsible for temporary drainage of surface water as necessary to prevent standing water and/or erosion at the working surface. During rough and finished grading of the site, the contractor should keep all pads and subgrade free of ponding water.

5.5.2 Surface

The ground surface around finished building pads should be sloped away from the edge of the pad at a minimum 2 percent gradient for a distance of at least 5 feet. Roof drainage from the building should be directed into solid, smooth-wall drainage pipes that carry the collected water to the storm drain system. Trapped planter areas should not be created adjacent to pavement and structures without providing means for positive drainage (e.g., swales or catch basins).

Surface and subsurface drainage systems should not be tied to one another, unless special provisions are taken to prevent backflow of surface water into the subsurface drainage system.

5.5.3 Subsurface

Based on the depths to groundwater, perimeter footing drains will not be required, unless footings are more than 5 feet below current grades. If installed, drains should consist of a filter fabric-wrapped, drain rock-filled trench that extends at least 12 inches below the lowest adjacent grade (i.e., slab subgrade elevation). A perforated pipe should be placed at the base to collect water that gathers in the drain rock. Discharge for footing drains should not be tied directly into the stormwater drainage system, unless mechanisms are installed to prevent backflow.

5.6 PERMANENT SLOPES

Permanent cut and fill slopes should not exceed 2H:1V. Slopes that will be mowed should not exceed 3H:1V. Access roads and pavement should be located at least 5 feet from the top of cut and fill slopes. The setback should be increased to 10 feet for buildings. The slopes should be

planted with appropriate vegetation to provide protection against erosion as soon as possible after grading. Surface water runoff should be collected and directed away from slopes to prevent water from running down the face of the slope.

6.0 CONSTRUCTION CONSIDERATIONS

6.1 TRAFFICABILITY

The near-surface soil primarily consists of sand with varying amounts of fines. The soil can support some construction loading; however, it will likely not support large equipment and areas with heavy traffic, particularly in the wet season, and granular haul roads and staging areas may be necessary.

Based on our experience, between 12 and 18 inches of imported granular material is generally required in staging areas and between 18 and 24 inches in haul roads areas. Stabilization material may be used as a substitute, provided the top 4 inches of material consists of imported granular material. The actual thickness will depend on the contractor's means and methods and, accordingly, should be the contractor's responsibility.

As an alternative to thickened crushed rock sections, haul roads and utility work zones may be constructed using cement-amended subgrade overlain by a crushed rock wearing surface. NV5 can provide recommendations for cement amendment as development progresses.

6.2 EXCAVATION

6.2.1 General

We anticipate static groundwater will generally be between 5 and 10 feet BGS. Perched groundwater could also be present at shallow depths and particularly in the wet season.

The near-surface sand with silt extends approximately 33 to 38 feet BGS and is prone to caving at all depths. Open excavation techniques will likely be needed to excavate trenches at the site. The walls of the excavations can be cut at a slope of 1H:1V, provided groundwater seepage is not present. Excavations should be flattened to 1.5H:1V or 2H:1V if excessive sloughing or raveling occurs. If groundwater is present, caving, raveling, and "running" conditions could occur. In lieu of large and open cuts, approved temporary shoring may be used for excavation support. A wide variety of shoring and dewatering systems are available. Consequently, we recommend that the contractor be responsible for selecting the appropriate shoring and dewatering systems.

If shoring is used, we recommend that the type and design of the shoring system be the responsibility of the contractor, who is in the best position to choose a system that fits the overall plan of operation. All excavations should be made in accordance with applicable OSHA and state regulations.

6.2.2 Dewatering

Dewatering may be required for excavations at the site, particularly during the wet season. If encountered, pumping from a sump located within the trench may be effective in dewatering

localized sections of trench. However, this method is unlikely to prove effective in dewatering long sections of trench or large excavations. In addition, the sidewalls of trench excavations will need to be flattened or shored if seepage is encountered.

Where groundwater seepage into shored excavations occurs, we recommend placing at least 1 foot to 2 feet of stabilization material at the base of the excavations.

We note that these recommendations are for guidance only. Dewatering of excavations is the sole responsibility of the contractor, as the contractor is in the best position to select these systems based on their means and methods.

7.0 LIMITATIONS

We have prepared this due diligence report for use by Trammell Crow Portland Development, Inc. and members of the design and construction team for the proposed development. This report should be considered preliminary and can be used for estimating purposes, but our report, conclusions, and interpretations should not be construed as a warranty of the subsurface conditions and are not applicable to other sites.

Soil explorations indicate soil conditions only at specific locations and only to the depths penetrated. They do not necessarily reflect soil strata or water level variations that may exist between exploration locations. If subsurface conditions differing from those described are noted during the course of excavation and construction, re-evaluation will be necessary.

The site development plans and design details were not finalized at the time this report was prepared. When the design has been finalized and if there are changes in the site grades or location, configuration, design loads, or type of construction, the conclusions and recommendations presented may not be applicable. If design changes are made, we should be retained to review our conclusions and recommendations and to provide a written evaluation or modification.

The scope of our services does not include services related to construction safety precautions, and our recommendations are not intended to direct the contractor's methods, techniques, sequences, or procedures, except as specifically described in this report for consideration in design.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.



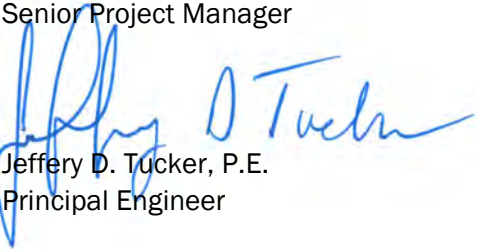
We appreciate the opportunity to be of service to you. Please call if you have questions concerning this report or if we can provide additional services.

Sincerely,

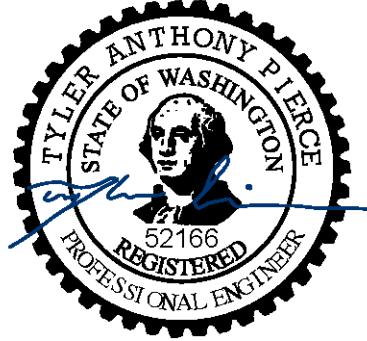
NV5



Tyler A. Pierce, P.E.
Senior Project Manager



Jeffery D. Tucker, P.E.
Principal Engineer



Signed 01/26/2023

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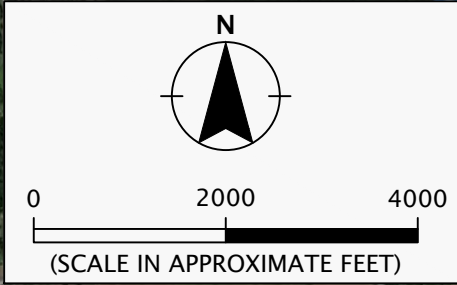
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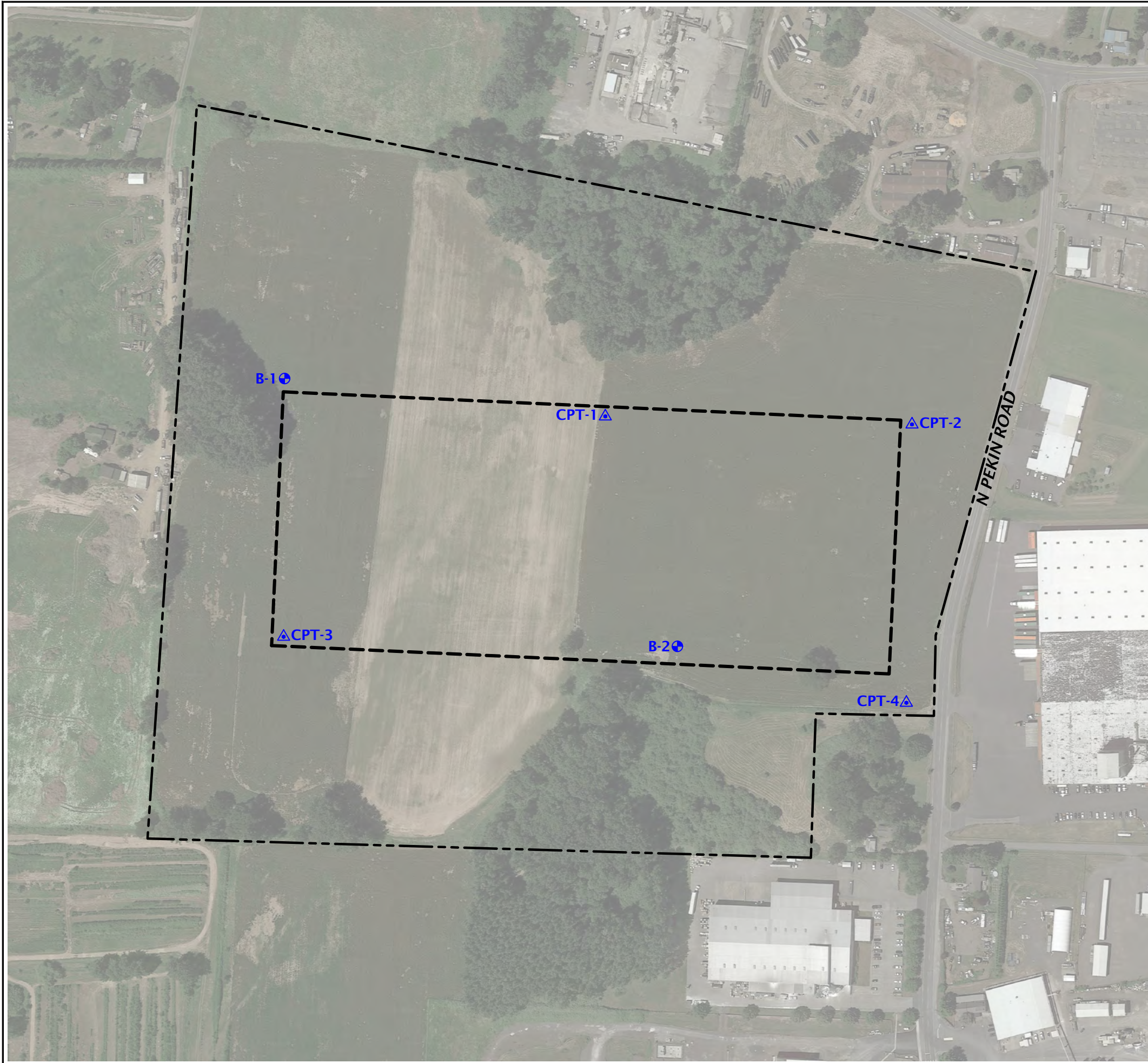
FIGURES







VICINITY MAP BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®

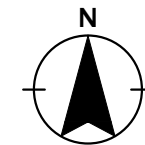


	TRAMMELLCR-118-02	VICINITY MAP	
	JANUARY 2023	WOODLAND PROJECT WOODLAND, WA	FIGURE 1

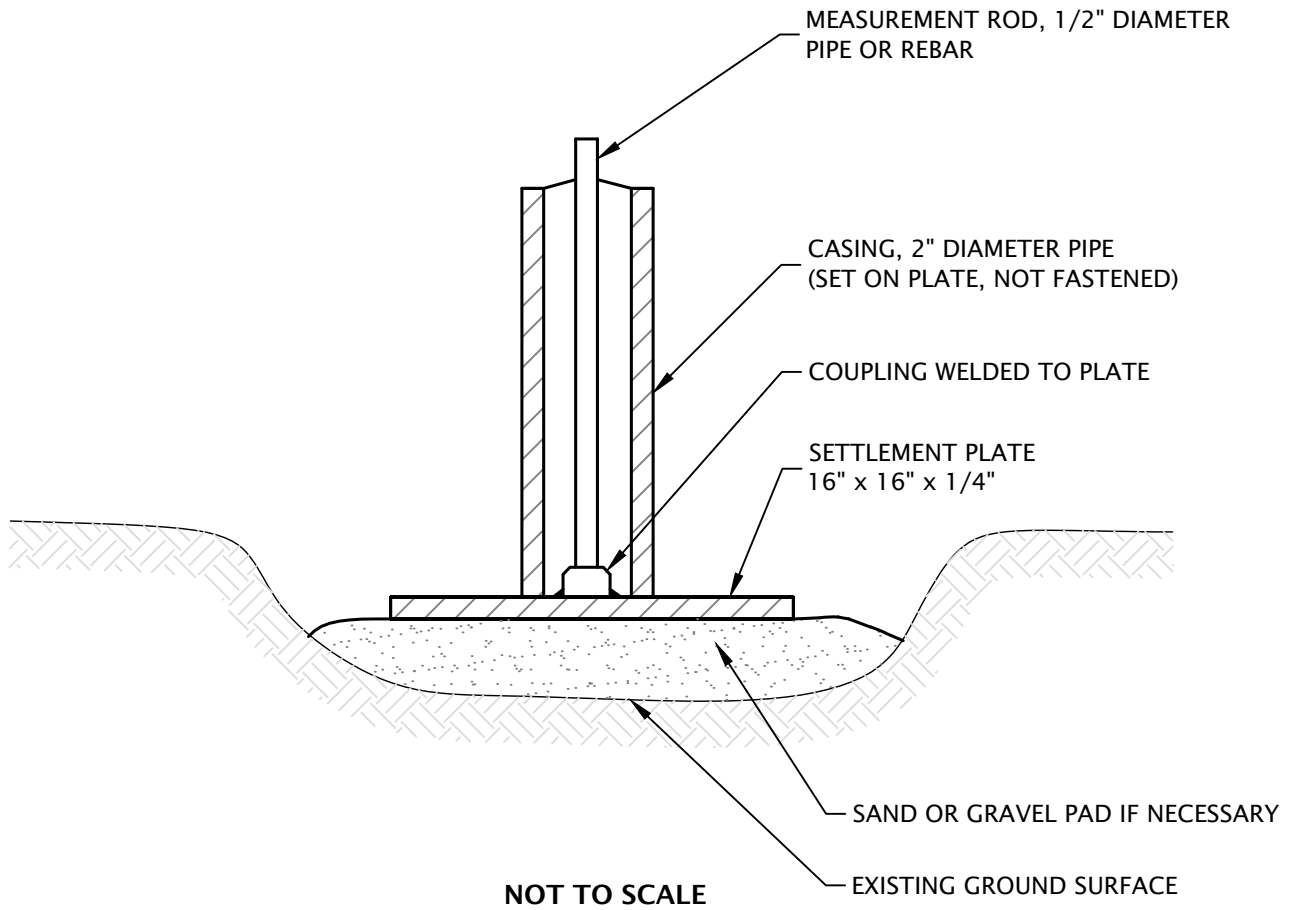


LEGEND:

-  SITE BOUNDARY
-  APPROXIMATE PROPOSED BUILDING FOOTPRINT
-  BORING
-  CPT



SITE PLAN BASED ON AERIAL PHOTOGRAPH DATED
JUNE 17, 2021, OBTAINED FROM GOOGLE EARTH PRO.



NOT TO SCALE

NOTES:

1. INSTALL MARKERS ON FIRM GROUND OR ON SAND OR GRAVEL PADS IF NEEDED FOR STABILITY. TAKE INITIAL READING ON TOP OF ROD AND AT ADJACENT GROUND LEVEL PRIOR TO PLACING ANY FILL.
2. FOR EASE IN HANDLING, ROD AND CASING ARE USUALLY INSTALLED IN 5-FOOT SECTIONS. AS FILL PROGRESSES, COUPLINGS ARE USED TO INSTALL ADDITIONAL LENGTHS. CONTINUITY IS MAINTAINED BY READING THE TOP OF THE MEASUREMENT ROD, THEN IMMEDIATELY ADDING THE NEW SECTION AND READING THE TOP OF THE ADDED ROD. BOTH READINGS ARE RECORDED.
3. RECORD THE ELEVATION OF THE TOP OF THE MEASUREMENT ROD IN EACH MARKER AT THE RECOMMENDED TIME INTERVALS. EACH TIME, NOTE THE ELEVATION OF THE ADJACENT FILL SURFACE.
4. READ THE MARKER TO THE NEAREST 0.01 FOOT, OR 0.005 FOOT IF POSSIBLE. NOTE THE FILL ELEVATION TO THE NEAREST 0.1 FOOT.
5. THE ELEVATIONS SHOULD BE REFERENCED TO A TEMPORARY BENCHMARK LOCATED ON STABLE GROUND AT LEAST 500 FEET FROM THE EMBANKMENT.

	TRAMMELLCR-118-02	SETTLEMENT PLATE DETAIL	
	JANUARY 2023	WOODLAND PROJECT WOODLAND, WA	FIGURE 3

APPENDIX A

APPENDIX A

FIELD EXPLORATIONS

We explored the subsurface conditions at the site by drilling two borings (B-1 and B-2) to depths of 81.5 and 101.5 feet BGS and advancing four CPT probes (CPT-1 through CPT-4) to depths between approximately 80.5 and 81.4 feet BGS. Drilling services were completed by Western States Soil Conservation, Inc. on December 15, 2022, using mud rotary drilling techniques. The boring logs are presented in this appendix. A description of the CPTs and the CPT logs are presented in Appendix B.

The locations of the explorations are shown on Figure 2 and were determined in the field by pacing and taping from existing site features. This information should be considered accurate only to the degree implied by the methods used.

An NV5 staff member observed the borings. We collected representative samples of the various soils encountered in the borings for geotechnical laboratory testing.

SOIL SAMPLING

Samples were collected from the borings using a 1½-inch-inside diameter (SPT) split-spoon sampler in general accordance with ASTM D1586. The split-spoon sampler was driven into the soil with a 140-pound hammer free falling 30 inches. The sampler was driven a total distance of 18 inches. The number of blows required to drive the sampler the final 12 inches is recorded on the boring logs, unless otherwise noted. Higher quality, relatively undisturbed samples were collected using a standard Shelby tube in general accordance with ASTM D1587. Sampling methods and intervals are shown on the exploration logs.

SOIL CLASSIFICATION

The soil samples were classified in accordance with the “Exploration Key” (Table A-1) and “Soil Classification System” (Table A-2), which are presented in this appendix. The exploration logs indicate the depths at which the soils or their characteristics change, although the change actually could be gradual. If the change occurred between sample locations, the depth was interpreted. Classifications are shown on the exploration logs.

LABORATORY TESTING

CLASSIFICATION

The soil samples were classified in the laboratory to confirm field classifications. The laboratory classifications are shown on the exploration logs if those classifications differed from the field classifications.

ATTERBERG LIMITS TESTING

The plastic limit and liquid limit (Atterberg limits) of selected soil samples were determined in accordance with ASTM D4318. The Atterberg limits and the plasticity index were completed to aid in the classification of the soil and evaluation of liquefaction susceptibility. The test results are presented in this appendix.

CONSOLIDATION TESTING

One-dimensional consolidation testing was completed on relatively undisturbed soil samples in general accordance with ASTM D2435. The test results are presented in this appendix.

PARTICLE-SIZE ANALYSIS

We completed particle-size analysis on selected soil samples in order to determine the distribution of soil particle sizes. The testing consisted of percent fines determination (percent passing the U.S. Standard No. 200 sieve) analyses completed in general accordance with ASTM C117 or ASTM D1140 (P200). The test results are presented in this appendix.

MOISTURE CONTENT










We tested the natural moisture content of selected soil samples in general accordance with ASTM D2216. The test results are presented in this appendix.

ORGANIC CONTENT

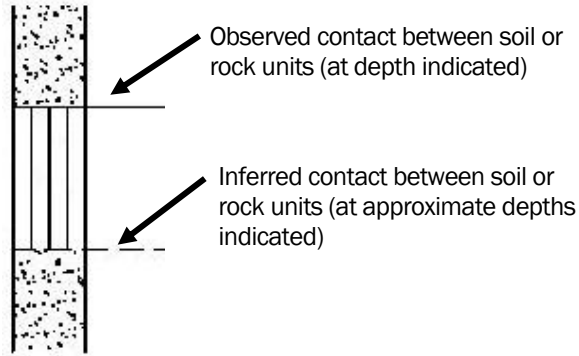
The organic content of selected soil samples was determined in accordance with ASTM D2974. The moisture content of the sample was determined by drying the sample in a standard drying oven and is expressed as a percentage of the sample weight. The organic content is determined by igniting the oven-dried sample in a muffle furnace. The resulting substance is ash, which is expressed as a percentage of the oven-dried sample. The test results are presented on the exploration logs.

DRY DENSITY

We determined the in-situ dry density of selected soil samples in general accordance with ASTM D7263. The dry density is the ratio between the mass of the soil (not including water) and the volume of the intact sample. The density is expressed in units of pcf. The test results are presented in this appendix.

SYMBOL	SAMPLING DESCRIPTION
	Location of sample collected in general accordance with ASTM D1586 using Standard Penetration Test (SPT) with recovery
	Location of sample collected using thin-wall Shelby tube or Geoprobe® sampler in general accordance with ASTM D1587 with recovery
	Location of sample collected using Dames & Moore sampler and 300-pound hammer or pushed with recovery
	Location of sample collected using Dames & Moore sampler and 140-pound hammer or pushed with recovery
	Location of sample collected using 3-inch-outside diameter California split-spoon sampler and 140-pound hammer with recovery
	Location of grab sample
	Rock coring interval
	Water level during drilling
	Water level taken on date shown

Graphic Log of Soil and Rock Types



GEOTECHNICAL TESTING EXPLANATIONS

ATT	Atterberg Limits	P	Pushed Sample
CBR	California Bearing Ratio	PP	Pocket Penetrometer
CON	Consolidation	P200	Percent Passing U.S. Standard No. 200 Sieve
DD	Dry Density		
DS	Direct Shear	RES	Resilient Modulus
HYD	Hydrometer Gradation	SIEV	Sieve Gradation
MC	Moisture Content	TOR	Torvane
MD	Moisture-Density Relationship	UC	Unconfined Compressive Strength
NP	Non-Plastic	VS	Vane Shear
OC	Organic Content	kPa	Kilopascal


ENVIRONMENTAL TESTING EXPLANATIONS

CA	Sample Submitted for Chemical Analysis	ND	Not Detected
P	Pushed Sample	NS	No Visible Sheen
PID	Photoionization Detector Headspace Analysis	SS	Slight Sheen
ppm	Parts per Million	MS	Moderate Sheen
		HS	Heavy Sheen

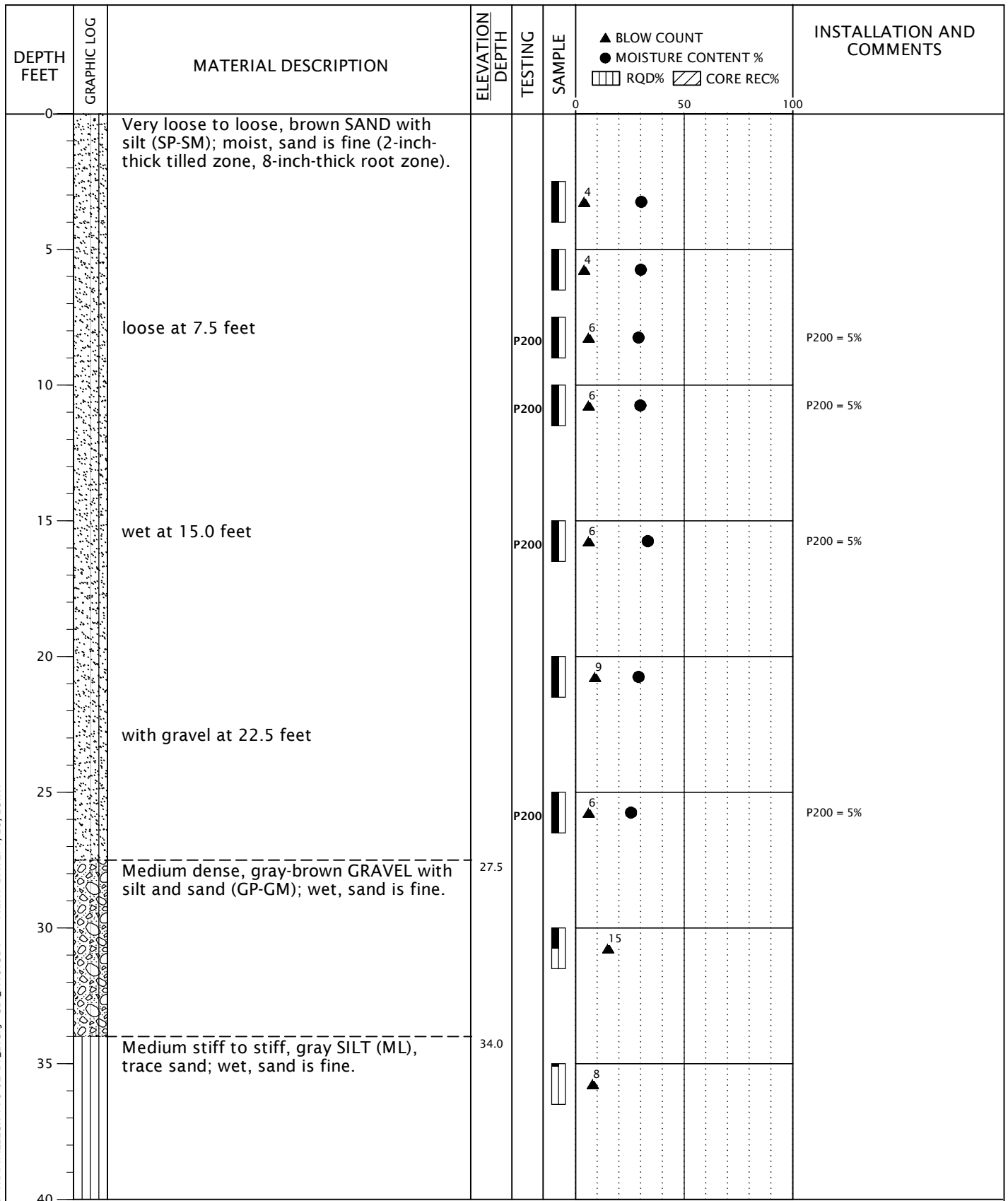


EXPLORATION KEY

TABLE A-1

RELATIVE DENSITY - COARSE-GRAINED SOIL							
Relative Density	Standard Penetration Test (SPT) Resistance		Dames & Moore Sampler (140-pound hammer)		Dames & Moore Sampler (300-pound hammer)		
Very loose	0 - 4		0 - 11		0 - 4		
Loose	4 - 10		11 - 26		4 - 10		
Medium dense	10 - 30		26 - 74		10 - 30		
Dense	30 - 50		74 - 120		30 - 47		
Very dense	More than 50		More than 120		More than 47		
CONSISTENCY - FINE-GRAINED SOIL							
Consistency	Standard Penetration Test (SPT) Resistance	Dames & Moore Sampler (140-pound hammer)	Dames & Moore Sampler (300-pound hammer)	Unconfined Compressive Strength (tsf)			
Very soft	Less than 2	Less than 3	Less than 2	Less than 0.25			
Soft	2 - 4	3 - 6	2 - 5	0.25 - 0.50			
Medium stiff	4 - 8	6 - 12	5 - 9	0.50 - 1.0			
Stiff	8 - 15	12 - 25	9 - 19	1.0 - 2.0			
Very stiff	15 - 30	25 - 65	19 - 31	2.0 - 4.0			
Hard	More than 30	More than 65	More than 31	More than 4.0			
PRIMARY SOIL DIVISIONS			GROUP SYMBOL	GROUP NAME			
COARSE-GRAINED SOIL (more than 50% retained on No. 200 sieve)	GRAVEL (more than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (< 5% fines)	GW or GP	GRAVEL			
		GRAVEL WITH FINES (≥ 5% and ≤ 12% fines)	GW-GM or GP-GM	GRAVEL with silt			
			GW-GC or GP-GC	GRAVEL with clay			
		GRAVEL WITH FINES (> 12% fines)	GM	silty GRAVEL			
			GC	clayey GRAVEL			
	GC-GM		silty, clayey GRAVEL				
	SAND (50% or more of coarse fraction passing No. 4 sieve)	CLEAN SAND (<5% fines)	SW or SP	SAND			
		SAND WITH FINES (≥ 5% and ≤ 12% fines)	SW-SM or SP-SM	SAND with silt			
			SW-SC or SP-SC	SAND with clay			
		SAND WITH FINES (> 12% fines)	SM	silty SAND			
SC			clayey SAND				
SC-SM	silty, clayey SAND						
FINE-GRAINED SOIL (50% or more passing No. 200 sieve)	SILT AND CLAY Liquid limit less than 50	ML	SILT				
		CL	CLAY				
		CL-ML	silty CLAY				
		OL	ORGANIC SILT or ORGANIC CLAY				
	Liquid limit 50 or greater	MH	SILT				
		CH	CLAY				
		OH	ORGANIC SILT or ORGANIC CLAY				
HIGHLY ORGANIC SOIL			PT	PEAT			
MOISTURE CLASSIFICATION		ADDITIONAL CONSTITUENTS					
Term	Field Test	Secondary granular components or other materials such as organics, man-made debris, etc.					
		Percent	Silt and Clay In:		Percent	Sand and Gravel In:	
dry	very low moisture, dry to touch		Fine-Grained Soil	Coarse-Grained Soil		Fine-Grained Soil	Coarse-Grained Soil
		< 5			trace		
moist	damp, without visible moisture	5 - 12	minor	with	5 - 15	minor	minor
		> 12	some	silty/clayey	15 - 30	with	with
wet	visible free water, usually saturated				> 30	sandy/gravelly	Indicate %
		SOIL CLASSIFICATION SYSTEM				TABLE A-2	

BORING LOG - NV5 - 1 PER PAGE TRAMMELLCR-118-02-B1_2.GPJ GDLNV5.GDT PRINT DATE: 1/25/23:KT



DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: J. Claudio

COMPLETED: 12/15/22

BORING METHOD: mud rotary (see document text)

BORING BIT DIAMETER: 4 4/8 inches



TRAMMELLCR-118-02

BORING B-1

JANUARY 2023

WOODLAND PROJECT
WOODLAND, WA

FIGURE A-1

BORING LOG - NV5 - 1 PER PAGE TRAMMELLCR-118-02-B1_2.GPJ GDLNV5.GDT PRINT DATE: 1/25/23:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % ▨ RQD% ▩ CORE REC%	INSTALLATION AND COMMENTS
40		very soft, gray with orange mottles, with organics (woody debris) at 40.0 feet		PP OC	1		PP = 1.75 tsf OC = 5.3%
45		medium stiff at 45.0 feet		CON	P		
				ATT PP	6		PP = 1.0 tsf LL = 83% PL = 45%
50		soft, gray with black mottles at 50.0 feet		PP	3		PP = 0.75 tsf
55		soft to medium stiff at 55.0 feet		PP OC	4		PP = 1.0 tsf OC = 5.5%
60		soft at 60.0 feet		PP	3		PP = 1.0 tsf
65				PP	3		PP = 0.5 tsf
70		stiff, gray, without organics at 70.0 feet		PP	12		PP = 0.5 tsf
75		very soft at 75.0 feet		PP	0		PP = 1.25 tsf

DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: J. Claudio

COMPLETED: 12/15/22

BORING METHOD: mud rotary (see document text)

BORING BIT DIAMETER: 4 4/8 inches



TRAMMELLCR-118-02

BORING B-1
(continued)

JANUARY 2023

WOODLAND PROJECT
WOODLAND, WA

FIGURE A-1

BORING LOG - NV5 - 1 PER PAGE TRAMMELLCR-118-02-B1_2.GPJ GDLNV5.GDT PRINT DATE: 1/25/23:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % ▨ RQD% ▩ CORE REC%	INSTALLATION AND COMMENTS
80		medium stiff at 80.0 feet		PP	7		PP = 0.75 tsf
85							
90		with sand at 90.0 feet		PP	5		PP = 0.5 tsf
95							
100		very soft at 100.0 feet			0		
101.5		Exploration completed at a depth of 101.5 feet.	101.5				Surface elevation was not measured at the time of exploration.
105							
110							
115							
120							

DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: J. Claudio

COMPLETED: 12/15/22

BORING METHOD: mud rotary (see document text)

BORING BIT DIAMETER: 4 4/8 inches



TRAMMELLCR-118-02

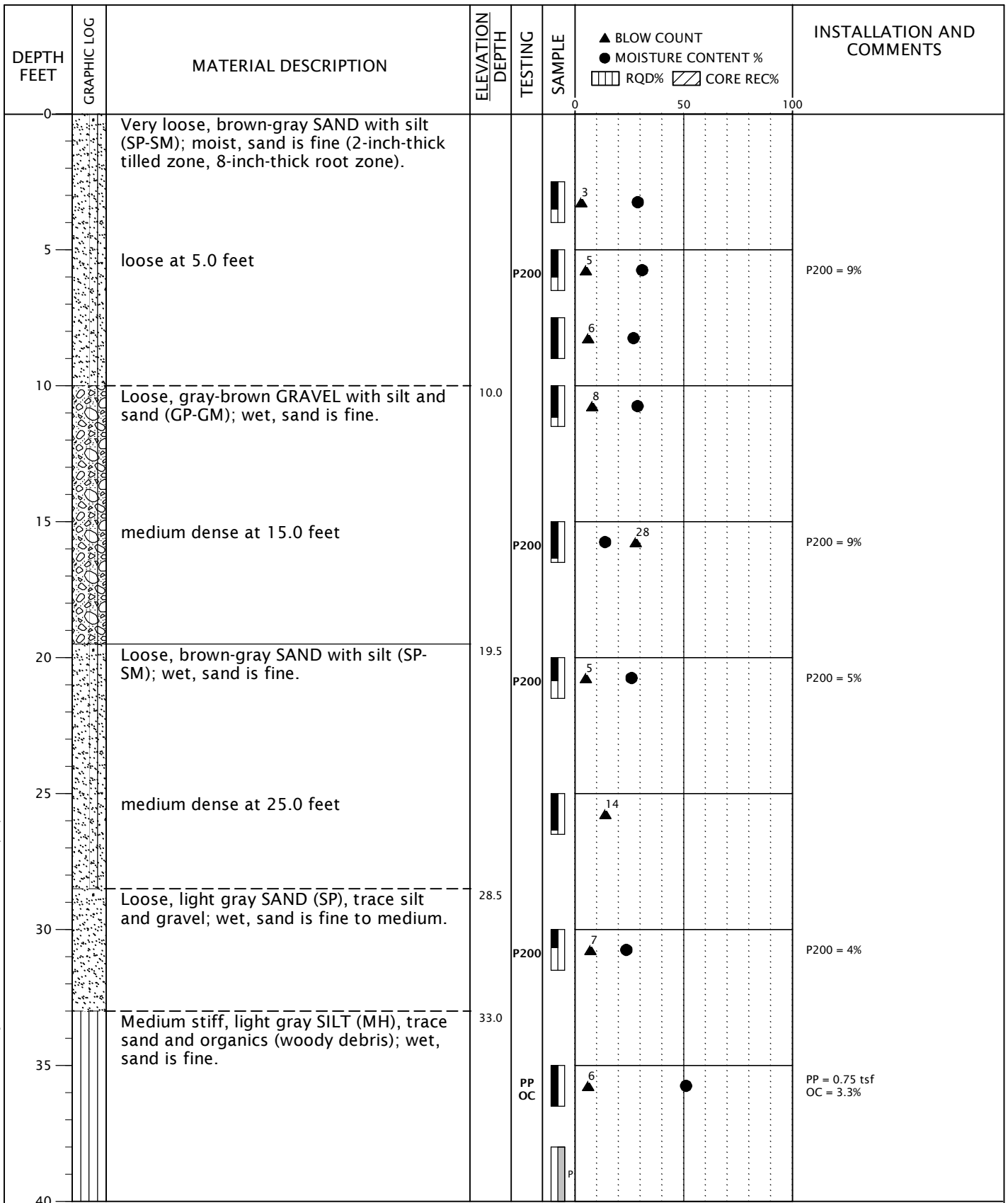
BORING B-1
(continued)

JANUARY 2023

WOODLAND PROJECT
WOODLAND, WA

FIGURE A-1

BORING LOG - NV5 - 1 PER PAGE TRAMMELLCR-118-02-B1_2.GPJ GDLNV5.GDT PRINT DATE: 1/25/23:KT



DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: J. Claudio

COMPLETED: 12/15/22

BORING METHOD: mud rotary (see document text)

BORING BIT DIAMETER: 4 4/8 inches



TRAMMELLCR-118-02

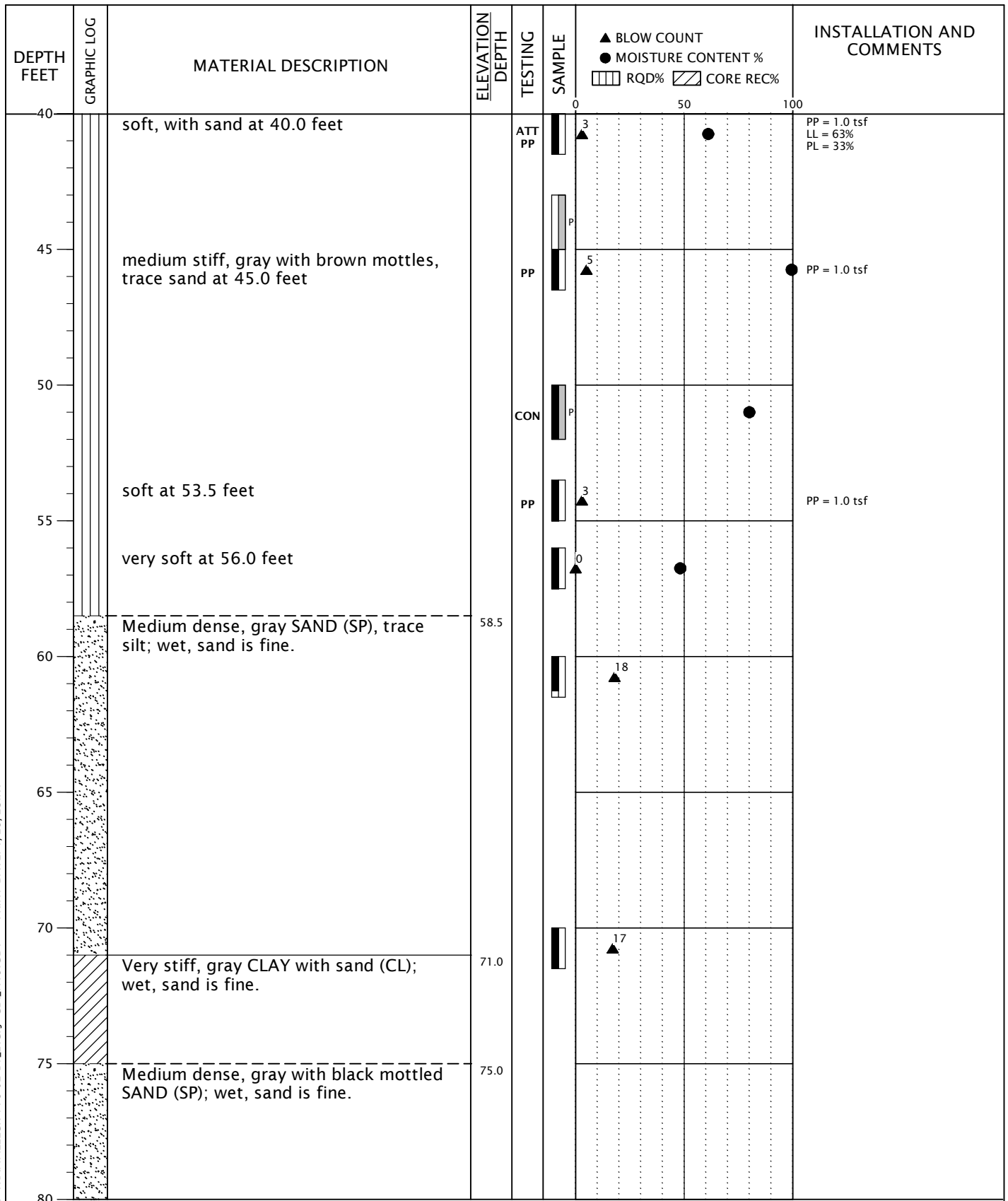
BORING B-2

JANUARY 2023

WOODLAND PROJECT
WOODLAND, WA

FIGURE A-2

BORING LOG - NV5 - 1 PER PAGE TRAMMELLCR-118-02-B1_2.GPJ GDLNV5.GDT PRINT DATE: 1/25/23:KT



DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: J. Claudio

COMPLETED: 12/15/22

BORING METHOD: mud rotary (see document text)

BORING BIT DIAMETER: 4 4/8 inches



TRAMMELLCR-118-02

BORING B-2
(continued)

JANUARY 2023

WOODLAND PROJECT
WOODLAND, WA

FIGURE A-2

BORING LOG - NV5 - 1 PER PAGE TRAMMELLCR-118-02-B1_2.GPJ GDLNV5.GDT PRINT DATE: 1/25/23:KT

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	ELEVATION DEPTH	TESTING	SAMPLE	▲ BLOW COUNT ● MOISTURE CONTENT % ▨ RQD% ▩ CORE REC%	INSTALLATION AND COMMENTS
80		(continued from previous page)					
81.5		Exploration completed at a depth of 81.5 feet.	81.5			23	Surface elevation was not measured at the time of exploration.
85							
90							
95							
100							
105							
110							
115							
120							

DRILLED BY: Western States Soil Conservation, Inc.

LOGGED BY: J. Claudio

COMPLETED: 12/15/22

BORING METHOD: mud rotary (see document text)

BORING BIT DIAMETER: 4 4/8 inches



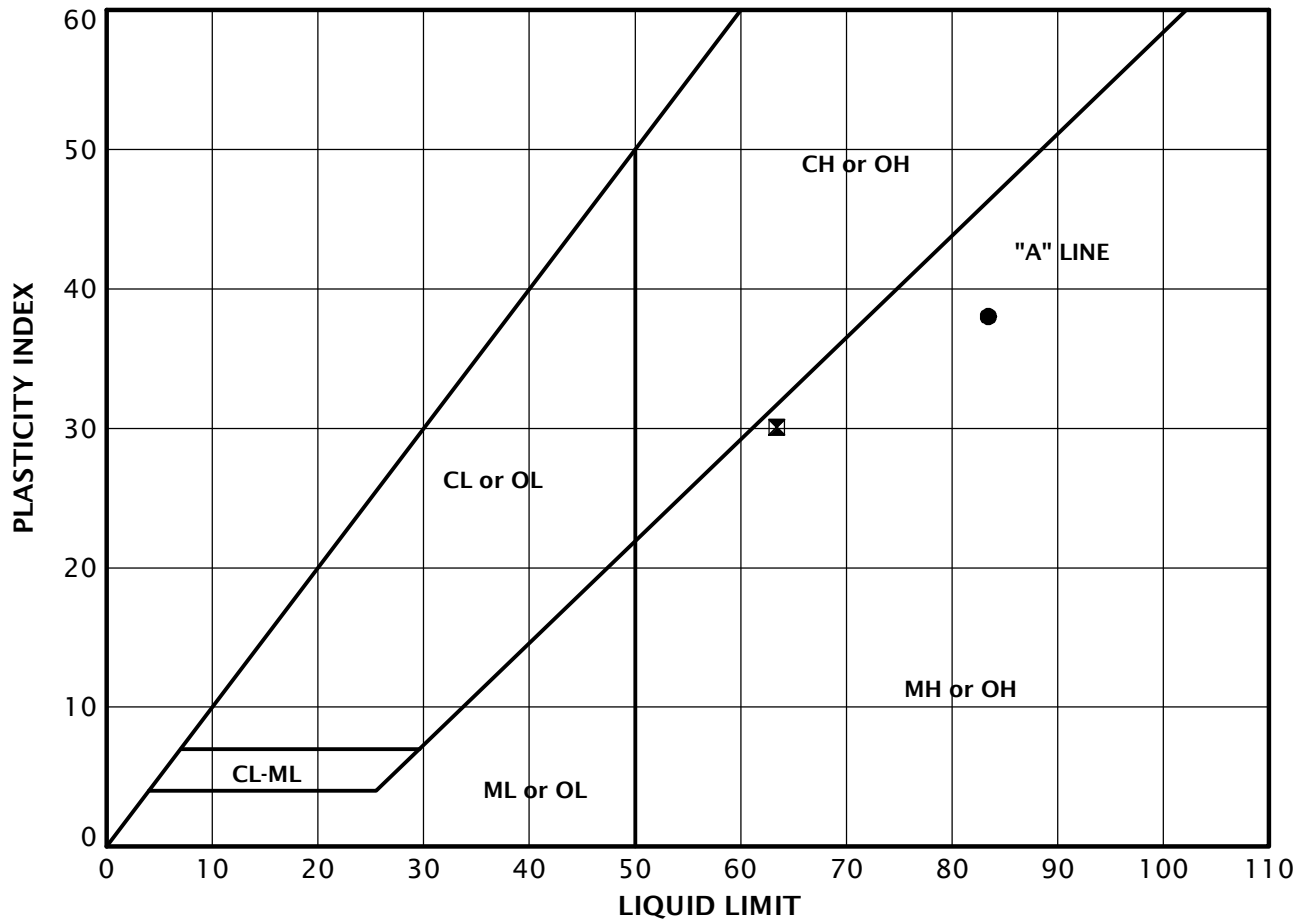
TRAMMELLCR-118-02

BORING B-2
(continued)

JANUARY 2023

WOODLAND PROJECT
WOODLAND, WA

FIGURE A-2



KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	MOISTURE CONTENT (PERCENT)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
●	B-1	45.0	69	83	45	38
⊠	B-2	40.0	61	63	33	30



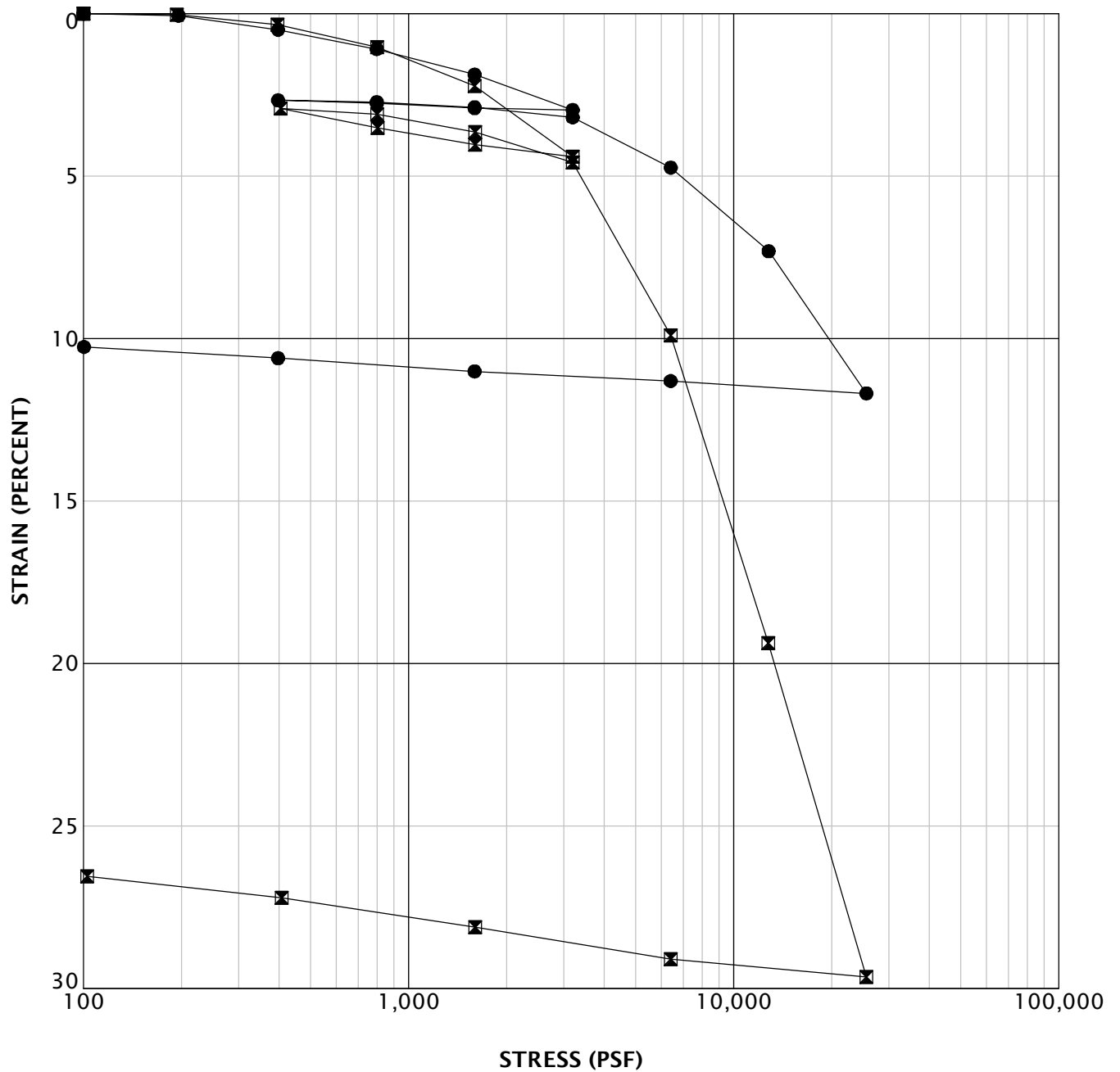
TRAMMELLCR-118-02

ATTERBERG LIMITS TEST RESULTS

JANUARY 2023

WOODLAND PROJECT
WOODLAND, WA

FIGURE A-3



KEY	EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)
●	B-1	43.0	52	68
⊠	B-2	50.0	80	52



TRAMELCCR-118-02

CONSOLIDATION TEST RESULTS


JANUARY 2023

WOODLAND PROJECT
WOODLAND, WA

FIGURE A-4

LAB SUMMARY - GDI-NV5 TRAMMELLCR-118-02-B1_2.GPJ GDI_NV5.GDT PRINT DATE: 1/9/23-5N

SAMPLE INFORMATION			MOISTURE CONTENT (PERCENT)	DRY DENSITY (PCF)	SIEVE			ATTERBERG LIMITS		
EXPLORATION NUMBER	SAMPLE DEPTH (FEET)	ELEVATION (FEET)			GRAVEL (PERCENT)	SAND (PERCENT)	P200 (PERCENT)	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
B-1	2.5		30							
B-1	5.0		30							
B-1	7.5		29				5			
B-1	10.0		30				5			
B-1	15.0		33				5			
B-1	20.0		29							
B-1	25.0		25				5			
B-1	40.0		68							
B-1	43.0		52	68						
B-1	45.0		69					83	45	38
B-1	50.0		49							
B-1	55.0		66							
B-1	65.0		54							
B-1	80.0		39							
B-2	2.5		29							
B-2	5.0		31				9			
B-2	7.5		27							
B-2	10.0		29							
B-2	15.0		14				9			
B-2	20.0		26				5			
B-2	30.0		24				4			
B-2	35.0		51							
B-2	40.0		61					63	33	30
B-2	45.0		99							
B-2	50.0		80	52						
B-2	56.0		48							

	TRAMMELLCR-118-02	SUMMARY OF LABORATORY DATA		
	JANUARY 2023	WOODLAND PROJECT WOODLAND, WA		FIGURE A-5

APPENDIX B

APPENDIX B

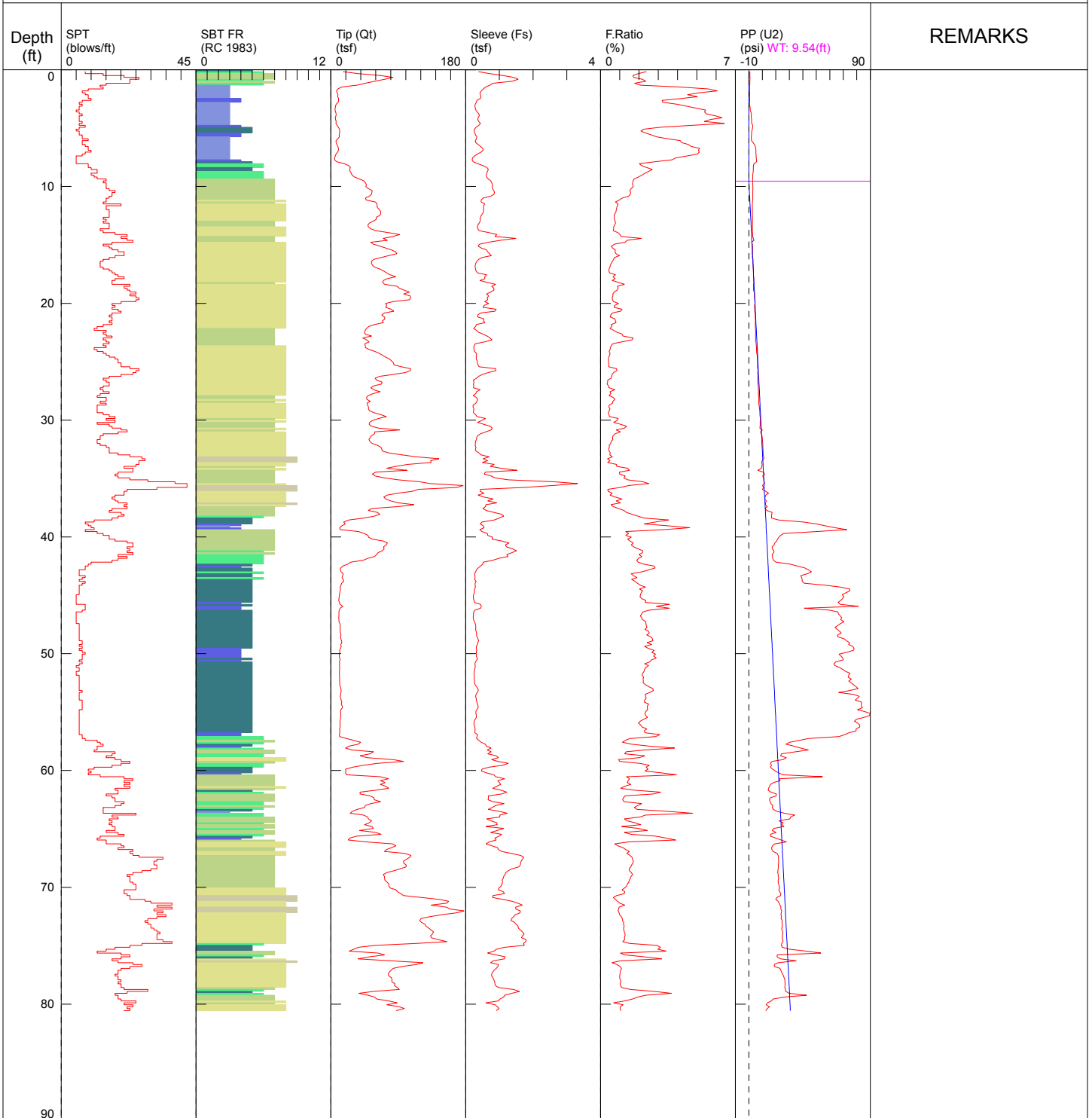
CONE PENETRATION TESTING

Our subsurface exploration program included four CPTs (CPT-1 through CPT-4) to depths between approximately 80.5 and 81.4 feet BGS. Figure 2 shows the locations of the CPTs relative to existing site features. The CPTs were performed by Oregon Geotechnical Explorations of Keizer, Oregon, in general accordance with ASTM D5778. The CPT results are presented in this appendix.

The CPT is an in-situ test that provides characterizes subsurface stratigraphy. The testing includes advancing a 35.6-millimeter-diameter cone equipped with a load cell and a friction sleeve through the soil profile. The cone is advanced at a rate of approximately 2 centimeters per second. Tip resistance, sleeve friction, and pore pressure are typically recorded at 0.1-meter intervals. Seismic shear wave velocity testing was completed in two of the CPTs at 3-foot intervals.

NV5 / CPT-1 / 345 N Pekin Rd Woodland

OPERATOR: OGE DMM
 CONE ID: DDG1654
 TEST DATE: 12/14/2022 11:08:35 AM
 TOTAL DEPTH: 80.545 ft

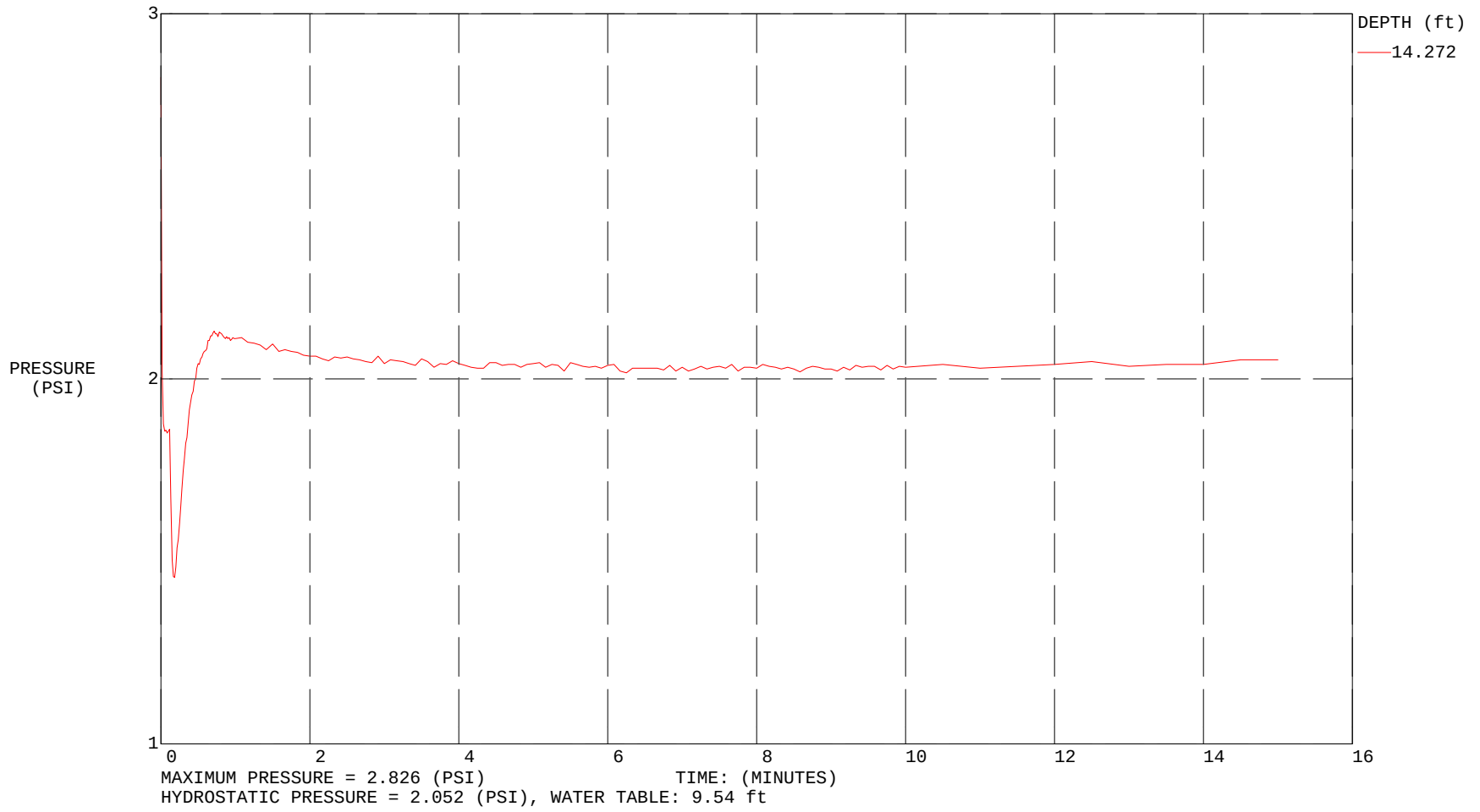


- | | | | |
|---|---|--|--|
| <ul style="list-style-type: none"> ■ 1 sensitive fine grained ■ 2 organic material ■ 3 clay | <ul style="list-style-type: none"> ■ 4 silty clay to clay ■ 5 clayey silt to silty clay ■ 6 sandy silt to clayey silt | <ul style="list-style-type: none"> ■ 7 silty sand to sandy silt ■ 8 sand to silty sand ■ 9 sand | <ul style="list-style-type: none"> ■ 10 gravelly sand to sand ■ 11 very stiff fine grained (*) ■ 12 sand to clayey sand (*) |
|---|---|--|--|

*SBT/SPT CORRELATION: UBC-1983

COMMENT: NV5 / CPT-1 / 345 N Pekin Rd Woodland

CONE ID: DDG1654
TEST DATE: 12/14/2022 11:08:35 AM



NV5 / CPT-1 / 345 N Pekin Rd Woodland

OPERATOR: OGE DMM
 CONE ID: DDG1654
 TEST DATE: 12/14/2022 11:08:35 AM
 TOTAL DEPTH: 80.545 ft

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
0.164	16.30	0.3868	2.374	0.766	8	5	clayey silt to silty clay
0.328	36.43	0.7114	1.953	0.695	14	6	sandy silt to clayey silt
0.492	66.22	1.1112	1.678	0.621	21	7	silty sand to sandy silt
0.656	82.88	1.4247	1.719	0.769	26	7	silty sand to sandy silt
0.820	71.93	1.5554	2.162	0.786	23	7	silty sand to sandy silt
0.984	58.90	1.3805	2.344	0.715	23	6	sandy silt to clayey silt
1.148	45.80	0.8086	1.765	0.637	15	7	silty sand to sandy silt
1.312	34.76	0.7163	2.060	0.533	13	6	sandy silt to clayey silt
1.476	14.43	0.5914	4.098	0.535	14	3	clay
1.640	9.33	0.5218	5.592	0.472	9	3	clay
1.804	7.66	0.4634	6.050	0.497	7	3	clay
1.969	8.29	0.4242	5.117	0.540	8	3	clay
2.133	9.56	0.4314	4.513	0.553	9	3	clay
2.297	8.95	0.4494	5.021	0.487	9	3	clay
2.461	10.31	0.4358	4.225	0.591	10	3	clay
2.625	10.36	0.3309	3.194	0.563	7	4	silty clay to clay
2.789	9.80	0.3165	3.230	0.477	6	4	silty clay to clay
2.953	7.15	0.2841	3.971	0.429	7	3	clay
3.117	6.10	0.2723	4.462	0.627	6	3	clay
3.281	5.80	0.2868	4.941	0.982	6	3	clay
3.445	5.53	0.3013	5.447	0.979	5	3	clay
3.609	6.29	0.3397	5.397	1.375	6	3	clay
3.773	7.11	0.3900	5.488	1.829	7	3	clay
3.937	6.73	0.4015	5.962	1.758	6	3	clay
4.101	5.80	0.3654	6.295	1.745	6	3	clay
4.265	6.25	0.3560	5.695	1.966	6	3	clay
4.429	7.15	0.3856	5.389	1.943	7	3	clay
4.593	6.77	0.4348	6.423	2.121	6	3	clay
4.757	8.19	0.3891	4.749	2.783	8	3	clay
4.921	9.92	0.3073	3.097	2.745	6	4	silty clay to clay
5.085	11.48	0.2579	2.247	2.615	5	5	clayey silt to silty clay
5.249	11.81	0.2476	2.097	2.146	6	5	clayey silt to silty clay
5.413	11.55	0.2679	2.319	1.968	6	5	clayey silt to silty clay
5.577	11.08	0.2930	2.644	1.925	7	4	silty clay to clay
5.741	11.27	0.3297	2.924	1.730	7	4	silty clay to clay
5.906	9.08	0.3182	3.505	1.730	9	3	clay
6.070	6.92	0.2862	4.138	1.900	7	3	clay
6.234	6.95	0.2923	4.203	3.092	7	3	clay
6.398	8.03	0.3662	4.563	4.099	8	3	clay
6.562	9.40	0.4420	4.701	4.705	9	3	clay
6.726	9.87	0.5068	5.134	4.992	9	3	clay
6.890	10.17	0.5167	5.081	5.276	10	3	clay
7.054	8.82	0.4514	5.120	5.208	8	3	clay
7.218	6.94	0.3487	5.025	5.271	7	3	clay
7.382	5.73	0.2578	4.497	5.304	5	3	clay
7.546	5.17	0.2018	3.906	5.403	5	3	clay

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
7.710	5.01	0.1862	3.717	5.563	5	3	clay
7.874	7.80	0.2203	2.825	5.814	5	4	silty clay to clay
8.038	17.77	0.3580	2.014	3.688	9	5	clayey silt to silty clay
8.202	23.75	0.5048	2.126	3.391	9	6	sandy silt to clayey silt
8.366	26.18	0.6270	2.395	3.260	10	6	sandy silt to clayey silt
8.530	25.09	0.6740	2.686	3.247	12	5	clayey silt to silty clay
8.694	25.75	0.6448	2.504	3.214	12	5	clayey silt to silty clay
8.858	27.27	0.6277	2.302	3.052	10	6	sandy silt to clayey silt
9.022	28.29	0.6065	2.143	2.844	11	6	sandy silt to clayey silt
9.186	31.46	0.6160	1.958	2.785	12	6	sandy silt to clayey silt
9.350	38.19	0.6657	1.743	2.757	15	6	sandy silt to clayey silt
9.514	44.14	0.7409	1.679	2.750	14	7	silty sand to sandy silt
9.678	46.22	0.7700	1.666	2.742	15	7	silty sand to sandy silt
9.843	47.43	0.7890	1.663	2.767	15	7	silty sand to sandy silt
10.007	46.68	0.7932	1.699	2.854	15	7	silty sand to sandy silt
10.171	50.08	0.7927	1.583	2.877	16	7	silty sand to sandy silt
10.335	54.96	0.8323	1.514	2.927	18	7	silty sand to sandy silt
10.499	54.74	0.8555	1.563	2.828	17	7	silty sand to sandy silt
10.663	54.15	0.8355	1.543	2.851	17	7	silty sand to sandy silt
10.827	51.30	0.7427	1.448	2.838	16	7	silty sand to sandy silt
10.991	45.95	0.5129	1.116	2.861	15	7	silty sand to sandy silt
11.155	47.28	0.4583	0.969	2.844	15	7	silty sand to sandy silt
11.319	59.43	0.4570	0.769	2.610	14	8	sand to silty sand
11.483	61.79	0.5648	0.914	2.562	20	7	silty sand to sandy silt
11.647	61.49	0.5277	0.858	2.542	15	8	sand to silty sand
11.811	62.27	0.5271	0.846	2.570	15	8	sand to silty sand
11.975	64.80	0.5310	0.819	2.587	16	8	sand to silty sand
12.139	66.45	0.5300	0.798	2.585	16	8	sand to silty sand
12.303	66.42	0.4991	0.751	2.608	16	8	sand to silty sand
12.467	65.59	0.4609	0.703	2.603	16	8	sand to silty sand
12.631	60.46	0.4351	0.720	2.638	14	8	sand to silty sand
12.795	60.61	0.4296	0.709	2.630	15	8	sand to silty sand
12.959	56.53	0.4279	0.757	2.679	14	8	sand to silty sand
13.123	51.40	0.3994	0.777	2.648	16	7	silty sand to sandy silt
13.287	49.51	0.3607	0.729	2.643	16	7	silty sand to sandy silt
13.451	50.04	0.3404	0.680	2.643	16	7	silty sand to sandy silt
13.615	53.15	0.3594	0.676	2.661	13	8	sand to silty sand
13.780	60.23	0.3958	0.657	2.686	14	8	sand to silty sand
13.944	76.96	0.6920	0.899	2.737	18	8	sand to silty sand
14.108	91.73	0.9225	1.006	2.808	22	8	sand to silty sand
14.272	82.93	0.8666	1.045	2.734	20	8	sand to silty sand
14.436	69.79	1.4857	2.129	3.391	22	7	silty sand to sandy silt
14.600	75.27	1.0278	1.366	3.670	24	7	silty sand to sandy silt
14.764	53.24	0.6753	1.268	2.095	17	7	silty sand to sandy silt
14.928	56.80	0.4104	0.723	2.575	14	8	sand to silty sand
15.092	65.41	0.3659	0.559	2.689	16	8	sand to silty sand
15.256	72.74	0.4529	0.623	2.755	17	8	sand to silty sand
15.420	80.68	0.6184	0.767	2.641	19	8	sand to silty sand
15.584	86.28	0.6450	0.748	2.778	21	8	sand to silty sand
15.748	88.00	0.7017	0.797	2.387	21	8	sand to silty sand
15.912	77.04	0.7556	0.981	2.788	18	8	sand to silty sand
16.076	66.91	0.4825	0.721	2.417	16	8	sand to silty sand
16.240	57.18	0.3851	0.673	3.064	14	8	sand to silty sand
16.404	54.14	0.3319	0.613	3.054	13	8	sand to silty sand
16.568	54.30	0.2975	0.548	3.064	13	8	sand to silty sand
16.732	55.50	0.2836	0.511	3.100	13	8	sand to silty sand
16.896	58.52	0.2796	0.478	3.150	14	8	sand to silty sand

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior UBC-1983	Type
17.060	65.51	0.2916	0.445	3.196	16	8	sand to silty sand	
17.224	70.38	0.3053	0.434	3.249	17	8	sand to silty sand	
17.388	74.38	0.3479	0.468	3.295	18	8	sand to silty sand	
17.552	79.10	0.6162	0.779	3.351	19	8	sand to silty sand	
17.717	86.63	0.5631	0.650	3.513	21	8	sand to silty sand	
17.881	75.30	0.5663	0.752	3.597	18	8	sand to silty sand	
18.045	70.12	0.4257	0.607	3.574	17	8	sand to silty sand	
18.209	68.99	0.6374	0.924	3.714	17	8	sand to silty sand	
18.373	71.65	0.8832	1.233	3.353	23	7	silty sand to sandy silt	
18.537	88.28	0.7710	0.873	3.402	21	8	sand to silty sand	
18.701	91.31	0.8380	0.918	3.323	22	8	sand to silty sand	
18.865	97.74	0.8365	0.856	3.404	23	8	sand to silty sand	
19.029	104.70	0.7436	0.710	3.825	25	8	sand to silty sand	
19.193	97.25	0.6179	0.635	4.071	23	8	sand to silty sand	
19.357	105.74	0.6788	0.642	3.972	25	8	sand to silty sand	
19.521	106.53	0.6372	0.598	4.140	26	8	sand to silty sand	
19.685	104.99	0.6523	0.621	4.355	25	8	sand to silty sand	
19.849	83.33	0.5616	0.674	4.705	20	8	sand to silty sand	
20.013	72.91	0.6805	0.933	4.426	17	8	sand to silty sand	
20.177	74.79	0.5460	0.730	4.127	18	8	sand to silty sand	
20.341	73.09	0.5145	0.704	4.155	17	8	sand to silty sand	
20.505	80.72	0.9050	1.121	4.274	19	8	sand to silty sand	
20.669	84.09	0.8692	1.034	4.325	20	8	sand to silty sand	
20.833	71.44	0.4368	0.611	4.485	17	8	sand to silty sand	
20.997	67.76	0.3531	0.521	4.672	16	8	sand to silty sand	
21.161	71.38	0.3588	0.503	4.769	17	8	sand to silty sand	
21.325	72.23	0.5425	0.751	4.822	17	8	sand to silty sand	
21.490	68.79	0.5270	0.766	4.875	16	8	sand to silty sand	
21.654	69.99	0.5626	0.804	4.675	17	8	sand to silty sand	
21.818	58.01	0.3189	0.550	4.784	14	8	sand to silty sand	
21.982	50.56	0.2915	0.577	4.845	12	8	sand to silty sand	
22.146	47.64	0.2342	0.491	4.792	11	8	sand to silty sand	
22.310	45.87	0.3118	0.680	4.972	15	7	silty sand to sandy silt	
22.474	45.05	0.3878	0.861	5.020	14	7	silty sand to sandy silt	
22.638	45.89	0.5132	1.118	4.911	15	7	silty sand to sandy silt	
22.802	54.28	0.6304	1.161	4.913	17	7	silty sand to sandy silt	
22.966	42.64	0.7193	1.687	5.152	14	7	silty sand to sandy silt	
23.130	47.76	0.7799	1.633	4.865	15	7	silty sand to sandy silt	
23.294	51.00	0.5537	1.086	5.223	16	7	silty sand to sandy silt	
23.458	45.40	0.2855	0.629	5.312	14	7	silty sand to sandy silt	
23.622	45.79	0.2496	0.545	5.416	15	7	silty sand to sandy silt	
23.786	46.21	0.2359	0.510	5.537	11	8	sand to silty sand	
23.950	51.16	0.2522	0.493	5.616	12	8	sand to silty sand	
24.114	58.87	0.2613	0.444	5.697	14	8	sand to silty sand	
24.278	64.60	0.3180	0.492	5.768	15	8	sand to silty sand	
24.442	68.59	0.3209	0.468	6.169	16	8	sand to silty sand	
24.606	73.15	0.3095	0.423	6.220	18	8	sand to silty sand	
24.770	78.26	0.3165	0.404	6.278	19	8	sand to silty sand	
24.934	81.05	0.3384	0.417	6.385	19	8	sand to silty sand	
25.098	83.62	0.3445	0.412	6.392	20	8	sand to silty sand	
25.262	84.10	0.3635	0.432	6.405	20	8	sand to silty sand	
25.427	94.14	0.3963	0.421	6.271	23	8	sand to silty sand	
25.591	106.53	0.8852	0.831	6.547	26	8	sand to silty sand	
25.755	105.95	0.8951	0.845	6.783	25	8	sand to silty sand	
25.919	99.44	0.6720	0.676	6.387	24	8	sand to silty sand	
26.083	83.05	0.4921	0.593	6.684	20	8	sand to silty sand	
26.247	65.47	0.3851	0.588	6.638	16	8	sand to silty sand	

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior UBC-1983	Type
26.411	59.01	0.3194	0.541	6.621	14	8	sand to silty sand	
26.575	61.16	0.2238	0.366	6.524	15	8	sand to silty sand	
26.739	68.39	0.2479	0.363	6.626	16	8	sand to silty sand	
26.903	67.64	0.2303	0.341	6.722	16	8	sand to silty sand	
27.067	56.98	0.2385	0.419	6.905	14	8	sand to silty sand	
27.231	53.36	0.2285	0.428	6.958	13	8	sand to silty sand	
27.395	57.00	0.4255	0.747	7.067	14	8	sand to silty sand	
27.559	65.59	0.3230	0.492	7.133	16	8	sand to silty sand	
27.723	56.28	0.2991	0.531	6.966	13	8	sand to silty sand	
27.887	49.70	0.2212	0.445	7.151	12	8	sand to silty sand	
28.051	47.85	0.3125	0.653	7.255	15	7	silty sand to sandy silt	
28.215	48.01	0.3551	0.740	7.376	15	7	silty sand to sandy silt	
28.379	52.37	0.3365	0.642	7.234	13	8	sand to silty sand	
28.543	48.19	0.3005	0.623	7.247	15	7	silty sand to sandy silt	
28.707	49.05	0.2188	0.446	7.534	12	8	sand to silty sand	
28.871	50.31	0.2176	0.432	7.729	12	8	sand to silty sand	
29.035	50.16	0.2419	0.482	7.874	12	8	sand to silty sand	
29.199	51.50	0.2310	0.449	7.993	12	8	sand to silty sand	
29.364	57.55	0.2287	0.397	8.084	14	8	sand to silty sand	
29.528	66.60	0.2922	0.439	8.079	16	8	sand to silty sand	
29.692	73.80	0.3344	0.453	8.214	18	8	sand to silty sand	
29.856	63.83	0.5808	0.910	8.467	15	8	sand to silty sand	
30.020	55.68	0.4829	0.867	8.477	18	7	silty sand to sandy silt	
30.184	51.70	0.3502	0.677	8.254	12	8	sand to silty sand	
30.348	51.12	0.5283	1.034	8.386	16	7	silty sand to sandy silt	
30.512	53.98	0.7276	1.348	8.328	17	7	silty sand to sandy silt	
30.676	63.63	0.7851	1.234	8.094	20	7	silty sand to sandy silt	
30.840	92.10	0.7498	0.814	9.938	22	8	sand to silty sand	
31.004	58.54	0.5966	1.019	8.627	19	7	silty sand to sandy silt	
31.168	58.22	0.4399	0.756	9.271	14	8	sand to silty sand	
31.332	54.08	0.3531	0.653	9.753	13	8	sand to silty sand	
31.496	52.28	0.3213	0.614	9.908	13	8	sand to silty sand	
31.660	50.74	0.3219	0.634	9.984	12	8	sand to silty sand	
31.824	52.14	0.2862	0.549	10.101	12	8	sand to silty sand	
31.988	54.98	0.2892	0.526	10.233	13	8	sand to silty sand	
32.152	62.39	0.2793	0.448	10.360	15	8	sand to silty sand	
32.316	66.88	0.3024	0.452	10.347	16	8	sand to silty sand	
32.480	67.96	0.2872	0.423	10.408	16	8	sand to silty sand	
32.644	68.71	0.3041	0.443	10.512	16	8	sand to silty sand	
32.808	77.55	0.3934	0.507	10.580	19	8	sand to silty sand	
32.972	95.08	0.4581	0.482	10.616	23	8	sand to silty sand	
33.136	113.74	0.6931	0.609	11.027	27	8	sand to silty sand	
33.301	144.36	0.5185	0.359	11.077	28	9	sand	
33.465	133.28	0.6452	0.484	9.840	26	9	sand	
33.629	133.77	0.4966	0.371	9.444	26	9	sand	
33.793	102.34	0.8442	0.825	9.807	25	8	sand to silty sand	
33.957	86.96	0.7318	0.842	9.619	21	8	sand to silty sand	
34.121	74.67	1.0497	1.406	9.279	24	7	silty sand to sandy silt	
34.285	101.61	1.5212	1.497	6.626	24	8	sand to silty sand	
34.449	59.77	0.5859	0.980	10.507	19	7	silty sand to sandy silt	
34.613	55.51	0.5470	0.985	11.590	18	7	silty sand to sandy silt	
34.777	59.12	0.7512	1.271	10.190	19	7	silty sand to sandy silt	
34.941	71.50	0.8662	1.211	11.047	23	7	silty sand to sandy silt	
35.105	90.05	1.2695	1.410	11.006	29	7	silty sand to sandy silt	
35.269	118.75	2.6141	2.201	11.402	38	7	silty sand to sandy silt	
35.433	132.49	3.3145	2.502	11.641	42	7	silty sand to sandy silt	
35.597	176.34	2.5897	1.469	9.961	42	8	sand to silty sand	

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
35.761	168.30	1.7454	1.037	11.019	32	9	sand
35.925	116.67	0.4357	0.373	9.933	22	9	sand
36.089	108.86	0.4275	0.393	12.226	21	9	sand
36.253	89.17	0.5393	0.605	14.540	21	8	sand to silty sand
36.417	74.95	0.3675	0.490	12.521	18	8	sand to silty sand
36.581	70.63	0.5416	0.767	12.039	17	8	sand to silty sand
36.745	73.30	0.8122	1.108	11.772	18	8	sand to silty sand
36.909	79.94	0.6523	0.816	12.955	19	8	sand to silty sand
37.073	90.31	0.9218	1.021	12.252	22	8	sand to silty sand
37.238	110.66	0.6023	0.544	12.252	21	9	sand
37.402	90.14	0.5880	0.652	13.624	22	8	sand to silty sand
37.566	54.46	0.5118	0.940	11.930	17	7	silty sand to sandy silt
37.730	49.87	0.6063	1.216	13.137	16	7	silty sand to sandy silt
37.894	62.00	0.8327	1.343	17.206	20	7	silty sand to sandy silt
38.058	65.30	1.0688	1.637	16.960	21	7	silty sand to sandy silt
38.222	58.07	1.1264	1.940	16.777	19	7	silty sand to sandy silt
38.386	44.21	0.9982	2.258	16.757	17	6	sandy silt to clayey silt
38.550	24.01	0.8463	3.525	21.845	11	5	clayey silt to silty clay
38.714	17.13	0.4857	2.835	40.431	8	5	clayey silt to silty clay
38.878	19.10	0.4307	2.255	50.124	9	5	clayey silt to silty clay
39.042	14.94	0.5194	3.477	56.394	10	4	silty clay to clay
39.206	11.75	0.5438	4.627	63.684	11	3	clay
39.370	12.56	0.4169	3.319	72.481	8	4	silty clay to clay
39.534	36.92	0.4812	1.303	50.332	12	7	silty sand to sandy silt
39.698	44.21	0.6428	1.454	25.716	14	7	silty sand to sandy silt
39.862	49.71	0.6488	1.305	23.530	16	7	silty sand to sandy silt
40.026	50.07	0.7990	1.596	22.254	16	7	silty sand to sandy silt
40.190	55.40	0.7809	1.410	21.097	18	7	silty sand to sandy silt
40.354	70.07	1.0752	1.534	20.607	22	7	silty sand to sandy silt
40.518	75.51	1.2840	1.700	19.177	24	7	silty sand to sandy silt
40.682	73.82	1.1765	1.594	18.680	24	7	silty sand to sandy silt
40.846	70.29	1.2094	1.721	17.234	22	7	silty sand to sandy silt
41.011	71.19	1.3839	1.944	17.320	23	7	silty sand to sandy silt
41.175	68.68	1.5008	2.185	18.492	22	7	silty sand to sandy silt
41.339	63.08	1.3723	2.176	18.380	24	6	sandy silt to clayey silt
41.503	61.04	1.2192	1.998	17.208	19	7	silty sand to sandy silt
41.667	58.29	1.2501	2.144	17.510	22	6	sandy silt to clayey silt
41.831	49.65	0.9818	1.977	17.574	19	6	sandy silt to clayey silt
41.995	43.18	0.8097	1.875	18.286	17	6	sandy silt to clayey silt
42.159	26.57	0.5184	1.951	20.105	10	6	sandy silt to clayey silt
42.323	22.65	0.5061	2.234	30.406	9	6	sandy silt to clayey silt
42.487	15.95	0.4416	2.768	35.875	8	5	clayey silt to silty clay
42.651	13.14	0.3721	2.832	41.484	8	4	silty clay to clay
42.815	12.64	0.3197	2.530	43.987	6	5	clayey silt to silty clay
42.979	13.51	0.2908	2.152	46.364	6	5	clayey silt to silty clay
43.143	16.36	0.2601	1.590	43.300	6	6	sandy silt to clayey silt
43.307	15.77	0.2708	1.717	38.445	8	5	clayey silt to silty clay
43.471	14.81	0.2796	1.888	39.165	7	5	clayey silt to silty clay
43.635	16.52	0.2662	1.611	39.457	6	6	sandy silt to clayey silt
43.799	17.26	0.3081	1.785	39.485	8	5	clayey silt to silty clay
43.963	14.40	0.2756	1.914	41.088	7	5	clayey silt to silty clay
44.127	13.56	0.2791	2.058	56.440	6	5	clayey silt to silty clay
44.291	12.47	0.2904	2.329	68.027	6	5	clayey silt to silty clay
44.455	12.90	0.2606	2.021	74.650	6	5	clayey silt to silty clay
44.619	12.14	0.2650	2.183	74.919	6	5	clayey silt to silty clay
44.783	11.94	0.2517	2.108	71.908	6	5	clayey silt to silty clay
44.948	11.33	0.2348	2.072	69.125	5	5	clayey silt to silty clay

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
45.112	11.08	0.2260	2.041	70.340	5	5	clayey silt to silty clay
45.276	10.75	0.2299	2.139	69.364	5	5	clayey silt to silty clay
45.440	10.48	0.2467	2.354	67.936	5	5	clayey silt to silty clay
45.604	11.36	0.2634	2.319	66.137	5	5	clayey silt to silty clay
45.768	12.17	0.4343	3.569	67.692	8	4	silty clay to clay
45.932	16.01	0.4651	2.905	81.070	8	5	clayey silt to silty clay
46.096	12.40	0.4416	3.562	41.050	8	4	silty clay to clay
46.260	11.08	0.2804	2.530	59.816	7	4	silty clay to clay
46.424	10.79	0.2368	2.194	65.998	5	5	clayey silt to silty clay
46.588	10.86	0.2319	2.136	66.406	5	5	clayey silt to silty clay
46.752	10.85	0.2244	2.069	67.728	5	5	clayey silt to silty clay
46.916	10.44	0.2219	2.125	68.778	5	5	clayey silt to silty clay
47.080	10.67	0.2328	2.183	68.014	5	5	clayey silt to silty clay
47.244	10.79	0.2518	2.334	70.460	5	5	clayey silt to silty clay
47.408	11.98	0.2822	2.356	67.925	6	5	clayey silt to silty clay
47.572	12.34	0.2920	2.367	65.840	6	5	clayey silt to silty clay
47.736	12.41	0.2995	2.414	63.849	6	5	clayey silt to silty clay
47.900	12.66	0.2920	2.307	65.381	6	5	clayey silt to silty clay
48.064	12.29	0.3055	2.486	67.215	6	5	clayey silt to silty clay
48.228	12.67	0.3209	2.532	68.369	6	5	clayey silt to silty clay
48.392	13.48	0.3224	2.392	65.729	6	5	clayey silt to silty clay
48.556	12.92	0.3375	2.612	66.135	6	5	clayey silt to silty clay
48.720	13.34	0.3591	2.692	70.614	6	5	clayey silt to silty clay
48.885	14.17	0.3851	2.717	72.385	7	5	clayey silt to silty clay
49.049	14.66	0.3541	2.415	74.675	7	5	clayey silt to silty clay
49.213	13.10	0.3472	2.650	73.909	6	5	clayey silt to silty clay
49.377	13.85	0.3170	2.289	76.991	7	5	clayey silt to silty clay
49.541	12.82	0.3171	2.473	77.910	6	5	clayey silt to silty clay
49.705	11.73	0.3259	2.778	77.412	7	4	silty clay to clay
49.869	11.89	0.3170	2.666	72.405	8	4	silty clay to clay
50.033	11.32	0.3228	2.850	66.850	7	4	silty clay to clay
50.197	11.21	0.3087	2.755	68.291	7	4	silty clay to clay
50.361	11.71	0.3383	2.889	69.574	7	4	silty clay to clay
50.525	12.47	0.3294	2.642	69.917	6	5	clayey silt to silty clay
50.689	11.30	0.2893	2.561	64.440	7	4	silty clay to clay
50.853	11.78	0.2701	2.293	62.946	6	5	clayey silt to silty clay
51.017	11.34	0.2819	2.486	63.773	5	5	clayey silt to silty clay
51.181	11.76	0.2762	2.349	67.261	6	5	clayey silt to silty clay
51.345	11.62	0.2649	2.280	69.574	6	5	clayey silt to silty clay
51.509	11.36	0.2561	2.254	71.779	5	5	clayey silt to silty clay
51.673	11.22	0.2459	2.191	74.929	5	5	clayey silt to silty clay
51.837	11.49	0.2474	2.153	74.077	6	5	clayey silt to silty clay
52.001	11.49	0.2561	2.229	73.653	6	5	clayey silt to silty clay
52.165	11.50	0.2537	2.206	75.926	6	5	clayey silt to silty clay
52.329	11.72	0.2602	2.220	74.067	6	5	clayey silt to silty clay
52.493	11.93	0.2645	2.217	75.901	6	5	clayey silt to silty clay
52.657	11.94	0.2800	2.345	77.712	6	5	clayey silt to silty clay
52.822	12.79	0.3199	2.501	79.503	6	5	clayey silt to silty clay
52.986	13.44	0.3648	2.715	80.885	6	5	clayey silt to silty clay
53.150	13.62	0.3725	2.735	74.739	7	5	clayey silt to silty clay
53.314	13.41	0.3416	2.547	66.655	6	5	clayey silt to silty clay
53.478	13.27	0.3071	2.313	77.489	6	5	clayey silt to silty clay
53.642	12.49	0.2911	2.331	81.803	6	5	clayey silt to silty clay
53.806	13.05	0.3093	2.370	80.563	6	5	clayey silt to silty clay
53.970	13.73	0.3145	2.290	78.929	7	5	clayey silt to silty clay
54.134	14.63	0.3319	2.268	83.543	7	5	clayey silt to silty clay
54.298	13.87	0.3454	2.491	83.300	7	5	clayey silt to silty clay

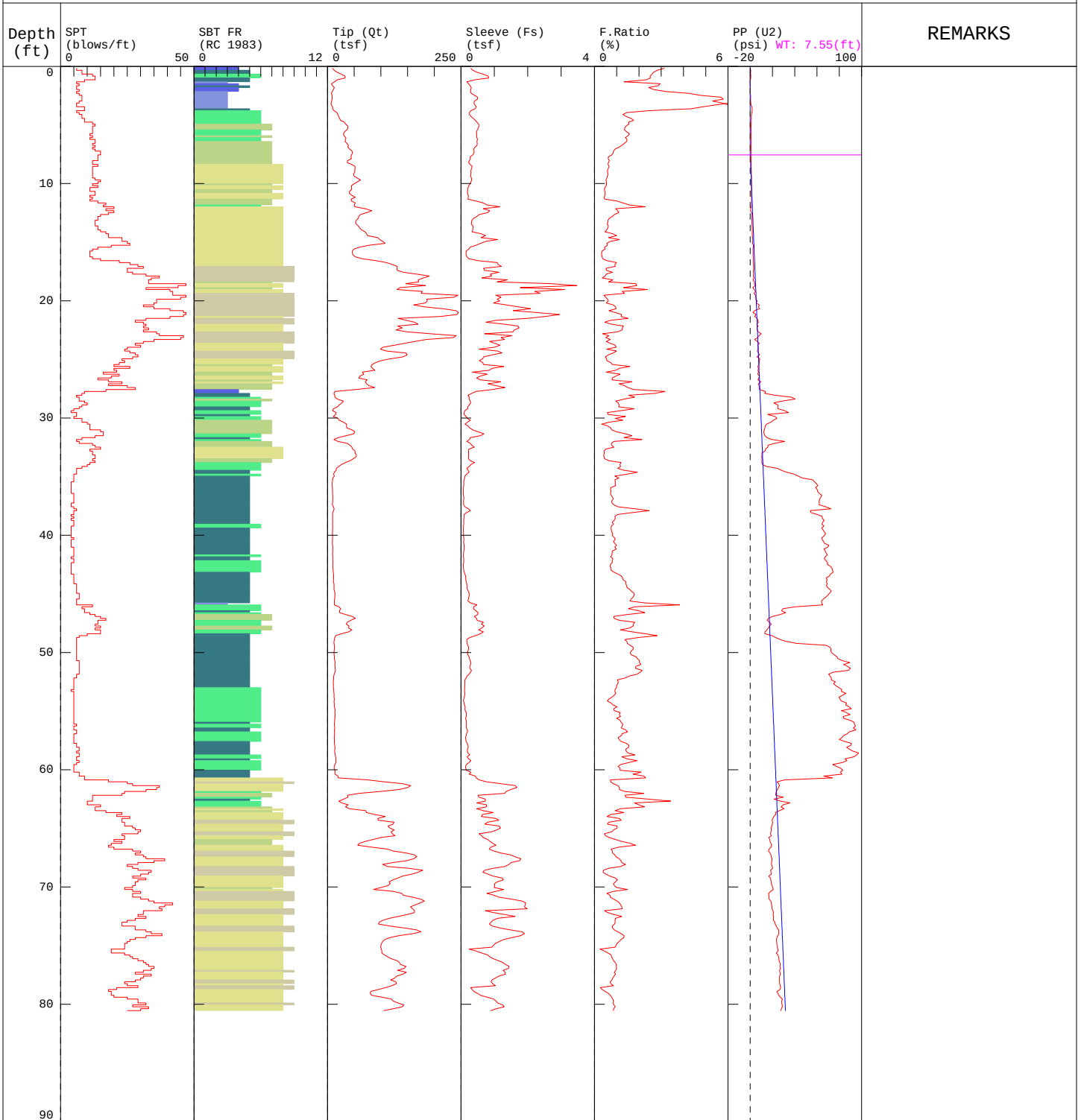
Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
54.462	15.16	0.3682	2.428	83.379	7	5	clayey silt to silty clay
54.626	15.22	0.3692	2.426	84.081	7	5	clayey silt to silty clay
54.790	13.45	0.3279	2.438	80.545	6	5	clayey silt to silty clay
54.954	12.80	0.3005	2.347	86.024	6	5	clayey silt to silty clay
55.118	13.20	0.3035	2.299	90.007	6	5	clayey silt to silty clay
55.282	13.45	0.3150	2.342	89.466	6	5	clayey silt to silty clay
55.446	12.93	0.3156	2.441	85.319	6	5	clayey silt to silty clay
55.610	12.71	0.2840	2.234	79.782	6	5	clayey silt to silty clay
55.774	12.24	0.2528	2.066	78.217	6	5	clayey silt to silty clay
55.938	12.25	0.2405	1.964	80.565	6	5	clayey silt to silty clay
56.102	12.08	0.2513	2.081	82.184	6	5	clayey silt to silty clay
56.266	12.37	0.2669	2.158	82.191	6	5	clayey silt to silty clay
56.430	11.70	0.2802	2.396	79.508	6	5	clayey silt to silty clay
56.594	12.12	0.2749	2.268	79.531	6	5	clayey silt to silty clay
56.759	11.84	0.2725	2.301	74.224	6	5	clayey silt to silty clay
56.923	11.44	0.3513	3.070	71.025	7	4	silty clay to clay
57.087	11.73	0.3349	2.856	66.845	7	4	silty clay to clay
57.251	20.97	0.3211	1.531	44.097	8	6	sandy silt to clayey silt
57.415	30.34	0.3902	1.286	37.638	12	6	sandy silt to clayey silt
57.579	39.76	0.4524	1.138	30.259	13	7	silty sand to sandy silt
57.743	36.42	0.5820	1.598	27.444	14	6	sandy silt to clayey silt
57.907	24.36	0.6119	2.512	33.171	12	5	clayey silt to silty clay
58.071	19.54	0.7494	3.836	38.300	12	4	silty clay to clay
58.235	27.90	0.6381	2.287	44.003	11	6	sandy silt to clayey silt
58.399	56.88	0.7526	1.323	34.640	18	7	silty sand to sandy silt
58.563	52.29	0.6541	1.251	24.176	17	7	silty sand to sandy silt
58.727	39.25	0.9009	2.295	23.487	15	6	sandy silt to clayey silt
58.891	48.21	0.9672	2.006	27.682	18	6	sandy silt to clayey silt
59.055	83.01	0.7683	0.926	25.336	20	8	sand to silty sand
59.219	97.02	0.9599	0.989	17.234	23	8	sand to silty sand
59.383	62.11	1.2613	2.031	15.821	20	7	silty sand to sandy silt
59.547	43.51	1.0970	2.522	16.739	17	6	sandy silt to clayey silt
59.711	29.14	0.6886	2.363	15.991	11	6	sandy silt to clayey silt
59.875	19.63	0.4828	2.459	17.462	9	5	clayey silt to silty clay
60.039	20.09	0.4635	2.307	19.661	10	5	clayey silt to silty clay
60.203	19.39	0.6128	3.160	21.921	9	5	clayey silt to silty clay
60.367	21.08	0.8312	3.942	25.191	13	4	silty clay to clay
60.532	65.86	0.8893	1.350	54.507	21	7	silty sand to sandy silt
60.696	76.64	1.1510	1.502	22.231	24	7	silty sand to sandy silt
60.860	66.17	0.9489	1.434	23.185	21	7	silty sand to sandy silt
61.024	72.24	0.9986	1.382	18.426	23	7	silty sand to sandy silt
61.188	66.05	1.0372	1.570	15.986	21	7	silty sand to sandy silt
61.352	73.44	0.9110	1.241	15.324	23	7	silty sand to sandy silt
61.516	77.16	0.8046	1.043	14.639	18	8	sand to silty sand
61.680	59.47	1.0493	1.764	14.271	19	7	silty sand to sandy silt
61.844	39.02	1.2167	3.118	16.369	19	5	clayey silt to silty clay
62.008	38.89	1.0684	2.747	20.328	15	6	sandy silt to clayey silt
62.172	52.71	0.6666	1.265	20.136	17	7	silty sand to sandy silt
62.336	57.40	0.6773	1.180	15.745	18	7	silty sand to sandy silt
62.500	57.85	0.6610	1.143	15.253	18	7	silty sand to sandy silt
62.664	66.32	0.8131	1.226	15.747	21	7	silty sand to sandy silt
62.828	53.36	1.1385	2.134	16.265	20	6	sandy silt to clayey silt
62.992	45.83	0.8840	1.929	17.594	18	6	sandy silt to clayey silt
63.156	45.07	0.7894	1.752	17.317	14	7	silty sand to sandy silt
63.320	35.27	0.6663	1.889	18.035	14	6	sandy silt to clayey silt
63.484	28.86	0.9949	3.447	20.620	14	5	clayey silt to silty clay
63.648	25.78	1.2312	4.776	26.267	25	3	clay

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
63.812	43.46	1.0130	2.331	33.854	17	6	sandy silt to clayey silt
63.976	49.08	1.0089	2.055	30.949	19	6	sandy silt to clayey silt
64.140	50.18	0.6249	1.245	30.330	16	7	silty sand to sandy silt
64.304	54.46	0.7482	1.374	22.315	17	7	silty sand to sandy silt
64.469	51.31	0.9212	1.795	25.371	16	7	silty sand to sandy silt
64.633	44.85	0.9334	2.081	24.334	17	6	sandy silt to clayey silt
64.797	55.08	0.6043	1.097	25.947	18	7	silty sand to sandy silt
64.961	56.80	1.1226	1.976	18.560	18	7	silty sand to sandy silt
65.125	38.27	0.9317	2.435	17.361	15	6	sandy silt to clayey silt
65.289	59.78	0.7427	1.242	20.110	19	7	silty sand to sandy silt
65.453	67.19	1.0618	1.580	15.950	21	7	silty sand to sandy silt
65.617	34.59	0.9898	2.861	16.019	13	6	sandy silt to clayey silt
65.781	25.32	0.8624	3.406	19.796	12	5	clayey silt to silty clay
65.945	23.18	0.9015	3.890	23.991	15	4	silty clay to clay
66.109	47.92	0.6929	1.446	27.756	15	7	silty sand to sandy silt
66.273	82.28	0.6054	0.736	19.101	20	8	sand to silty sand
66.437	86.84	0.7756	0.893	17.467	21	8	sand to silty sand
66.601	81.16	0.9380	1.156	16.904	19	8	sand to silty sand
66.765	74.33	0.9699	1.305	16.937	24	7	silty sand to sandy silt
66.929	71.60	1.0641	1.486	17.822	23	7	silty sand to sandy silt
67.093	98.56	1.3474	1.367	20.988	24	8	sand to silty sand
67.257	106.96	1.6296	1.524	21.660	26	8	sand to silty sand
67.421	105.38	1.7187	1.631	21.850	34	7	silty sand to sandy silt
67.585	101.24	1.6848	1.664	22.041	32	7	silty sand to sandy silt
67.749	97.09	1.6439	1.693	21.972	31	7	silty sand to sandy silt
67.913	97.19	1.6296	1.677	22.020	31	7	silty sand to sandy silt
68.077	100.54	1.6180	1.609	21.807	32	7	silty sand to sandy silt
68.241	100.39	1.5749	1.569	21.855	32	7	silty sand to sandy silt
68.406	93.22	1.3806	1.481	21.645	30	7	silty sand to sandy silt
68.570	84.65	1.2658	1.495	21.533	27	7	silty sand to sandy silt
68.734	74.78	1.1916	1.594	21.379	24	7	silty sand to sandy silt
68.898	69.95	1.1632	1.663	21.787	22	7	silty sand to sandy silt
69.062	71.48	1.1271	1.577	21.617	23	7	silty sand to sandy silt
69.226	71.69	1.1115	1.550	22.084	23	7	silty sand to sandy silt
69.390	72.08	1.0772	1.494	21.658	23	7	silty sand to sandy silt
69.554	75.06	1.0941	1.458	21.693	24	7	silty sand to sandy silt
69.718	77.41	1.0763	1.390	21.949	25	7	silty sand to sandy silt
69.882	77.29	1.0466	1.354	22.627	25	7	silty sand to sandy silt
70.046	79.15	0.9869	1.247	22.753	25	7	silty sand to sandy silt
70.210	86.92	0.9643	1.109	22.145	21	8	sand to silty sand
70.374	88.79	1.1131	1.254	22.799	21	8	sand to silty sand
70.538	93.36	1.1478	1.229	23.669	22	8	sand to silty sand
70.702	97.04	0.8081	0.833	23.494	23	8	sand to silty sand
70.866	121.29	0.8009	0.660	20.681	23	9	sand
71.030	144.70	1.1090	0.766	19.925	28	9	sand
71.194	157.05	1.3739	0.875	21.589	30	9	sand
71.358	154.73	1.5432	0.997	22.464	37	8	sand to silty sand
71.522	133.94	1.6792	1.254	22.969	32	8	sand to silty sand
71.686	153.82	1.4793	0.962	23.755	37	8	sand to silty sand
71.850	159.42	1.4871	0.933	23.639	31	9	sand
72.014	177.72	1.6196	0.911	24.319	34	9	sand
72.178	168.24	1.6102	0.957	24.050	32	9	sand
72.343	147.41	1.4692	0.997	23.697	35	8	sand to silty sand
72.507	132.31	1.4229	1.075	24.156	32	8	sand to silty sand
72.671	120.12	1.3584	1.131	23.821	29	8	sand to silty sand
72.835	118.48	1.3447	1.135	24.679	28	8	sand to silty sand
72.999	120.81	1.4459	1.197	24.572	29	8	sand to silty sand

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
73.163	125.71	1.5017	1.195	24.641	30	8	sand to silty sand
73.327	126.89	1.5530	1.224	24.717	30	8	sand to silty sand
73.491	130.63	1.5612	1.195	24.306	31	8	sand to silty sand
73.655	134.01	1.6242	1.212	24.478	32	8	sand to silty sand
73.819	137.16	1.6847	1.228	25.130	33	8	sand to silty sand
73.983	135.65	1.7332	1.278	25.006	32	8	sand to silty sand
74.147	132.92	1.6825	1.266	24.879	32	8	sand to silty sand
74.311	134.14	1.6539	1.233	24.732	32	8	sand to silty sand
74.475	143.65	1.7939	1.249	25.135	34	8	sand to silty sand
74.639	154.80	1.7825	1.152	25.211	37	8	sand to silty sand
74.803	114.37	1.7156	1.500	24.407	27	8	sand to silty sand
74.967	59.65	1.7358	2.910	24.118	23	6	sandy silt to clayey silt
75.131	36.96	1.1509	3.114	24.681	18	5	clayey silt to silty clay
75.295	30.59	0.9106	2.976	29.955	15	5	clayey silt to silty clay
75.459	24.59	0.8392	3.413	42.618	12	5	clayey silt to silty clay
75.623	62.81	0.6494	1.034	53.325	20	7	silty sand to sandy silt
75.787	71.60	0.8955	1.251	20.990	23	7	silty sand to sandy silt
75.951	51.57	1.1664	2.262	20.932	20	6	sandy silt to clayey silt
76.115	36.17	1.1474	3.172	23.520	17	5	clayey silt to silty clay
76.280	79.48	0.8207	1.033	34.957	19	8	sand to silty sand
76.444	122.87	0.7390	0.601	21.739	24	9	sand
76.608	113.97	0.9689	0.850	18.850	27	8	sand to silty sand
76.772	95.14	0.9586	1.008	18.870	23	8	sand to silty sand
76.936	83.30	0.9025	1.083	22.951	20	8	sand to silty sand
77.100	80.39	0.8386	1.043	23.656	19	8	sand to silty sand
77.264	77.77	0.7947	1.022	24.288	19	8	sand to silty sand
77.428	76.49	0.7676	1.003	25.041	18	8	sand to silty sand
77.592	77.59	0.7681	0.990	25.587	19	8	sand to silty sand
77.756	81.08	0.8089	0.998	26.120	19	8	sand to silty sand
77.920	81.66	0.8336	1.021	26.683	20	8	sand to silty sand
78.084	81.34	0.8618	1.060	26.695	19	8	sand to silty sand
78.248	85.48	0.8649	1.012	26.802	20	8	sand to silty sand
78.412	84.69	0.8806	1.040	26.766	20	8	sand to silty sand
78.576	88.63	0.9752	1.100	26.627	21	8	sand to silty sand
78.740	91.38	1.4192	1.553	27.190	29	7	silty sand to sandy silt
78.904	56.98	1.5902	2.791	27.395	22	6	sandy silt to clayey silt
79.068	37.30	1.3711	3.676	29.808	18	5	clayey silt to silty clay
79.232	49.54	1.1526	2.327	42.646	19	6	sandy silt to clayey silt
79.396	58.46	1.1249	1.924	26.135	19	7	silty sand to sandy silt
79.560	61.12	1.0149	1.660	17.977	20	7	silty sand to sandy silt
79.724	77.14	0.9667	1.253	16.625	25	7	silty sand to sandy silt
79.888	88.51	0.6014	0.680	13.774	21	8	sand to silty sand
80.052	74.74	0.8721	1.167	12.868	24	7	silty sand to sandy silt
80.217	91.15	0.9415	1.033	15.260	22	8	sand to silty sand
80.381	98.04	0.9903	1.010	13.639	23	8	sand to silty sand
80.545	87.35	0.9103	1.042	12.551	21	8	sand to silty sand

NV5 / CPT-2 / 345 N Pekin Rd Woodland

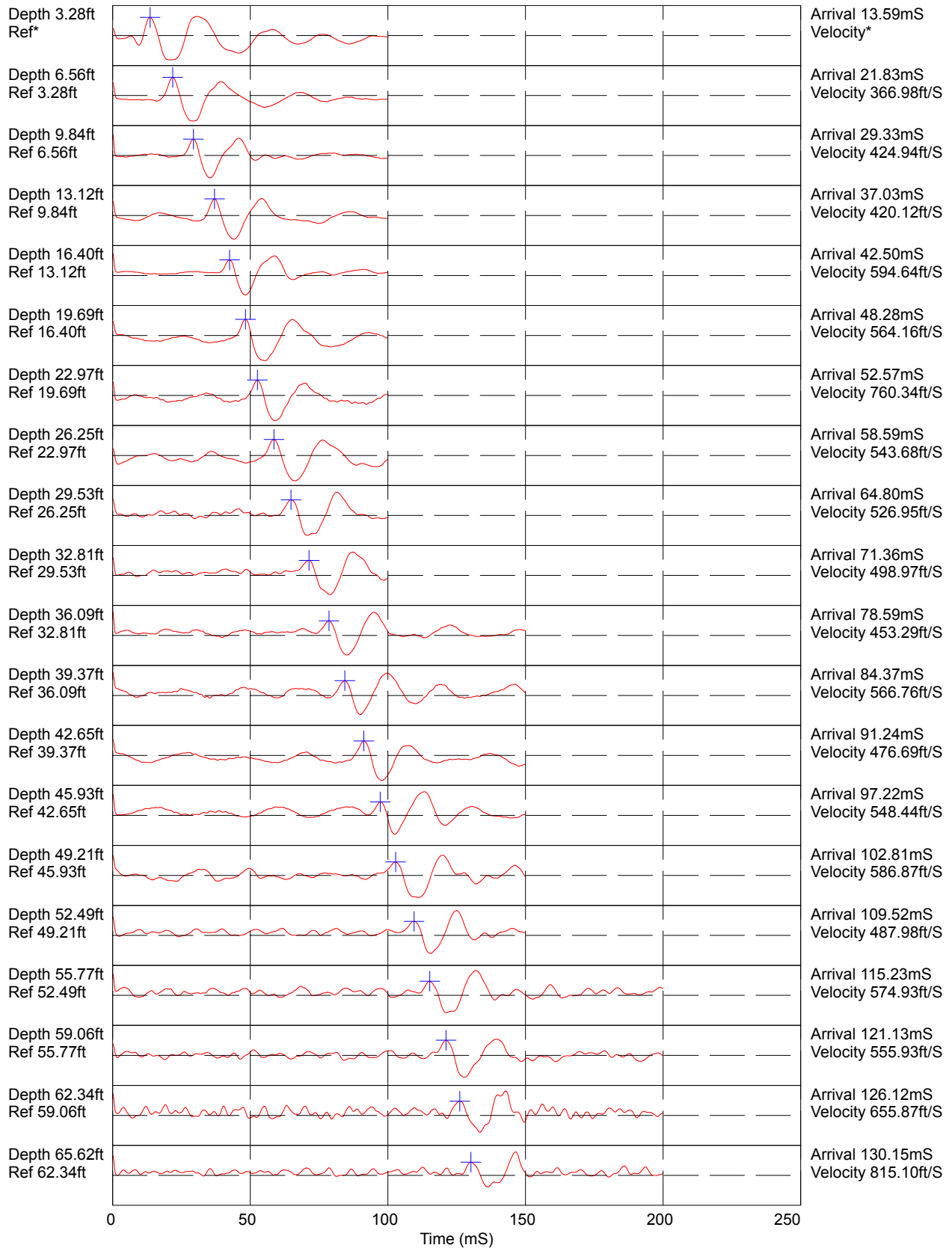
OPERATOR: OGE DMM
 CONE ID: DDG1654
 TEST DATE: 12/14/2022 12:20:51 PM
 TOTAL DEPTH: 80.545 ft



<p>1 sensitive fine grained 2 organic material 3 clay</p>	<p>4 silty clay to clay 5 clayey silt to silty clay 6 sandy silt to clayey silt</p>	<p>7 silty sand to sandy silt 8 sand to silty sand 9 sand</p>	<p>10 gravelly sand to sand 11 very stiff fine grained (*) 12 sand to clayey sand (*)</p>
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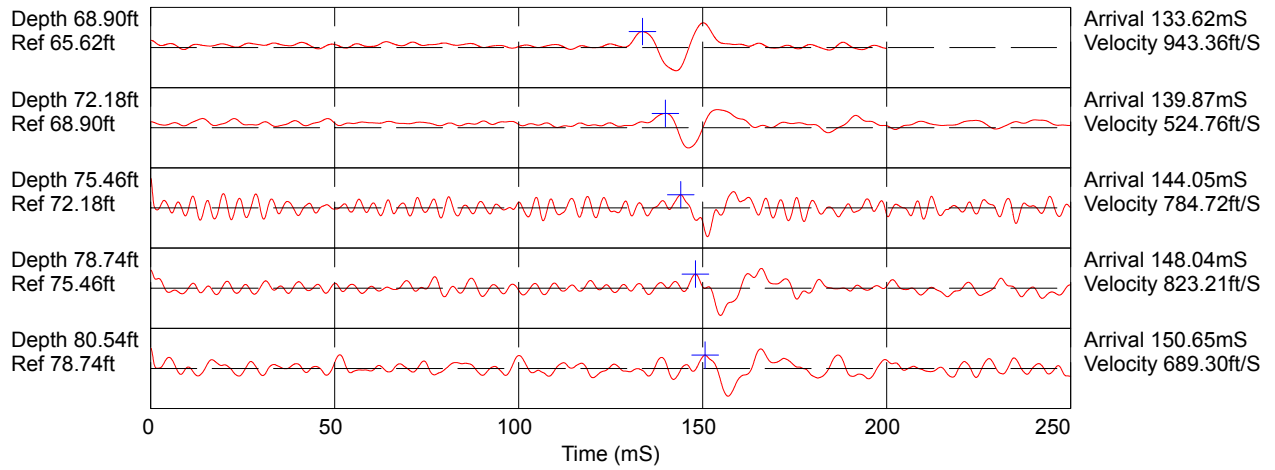
*SBT/SPT CORRELATION: UBC-1983

COMMENT: NV5 / CPT-2 / 345 N Pekin Rd Woodland



Hammer to Rod String Distance (ft): 1.97
 * = Not Determined

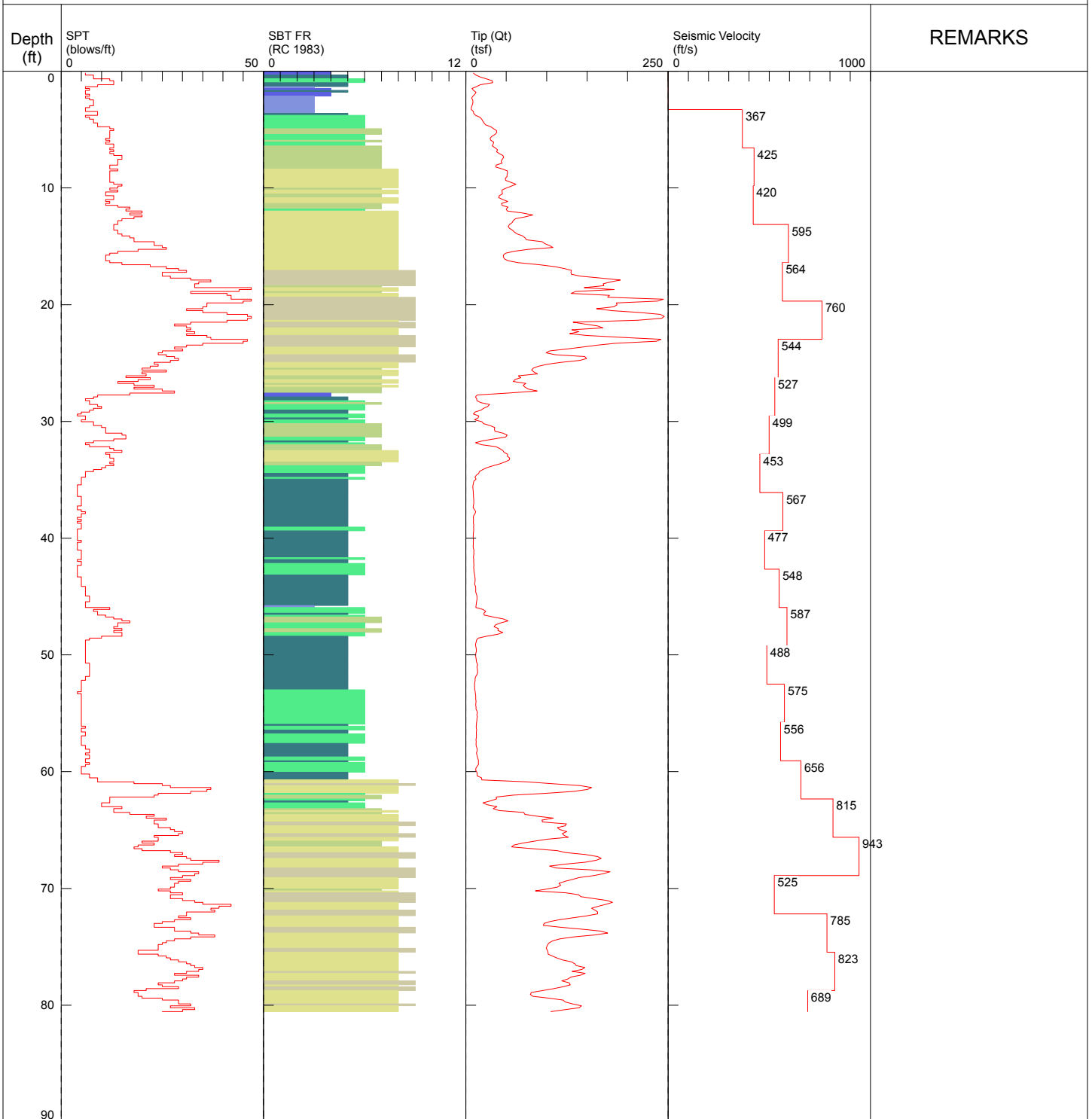
COMMENT: NV5 / CPT-2 / 345 N Pekin Rd Woodland



Hammer to Rod String Distance (ft): 1.97
* = Not Determined

NV5 / CPT-2 / 345 N Pekin Rd Woodland

OPERATOR: OGE DMM
 CONE ID: DDG1654
 TEST DATE: 12/14/2022 12:20:51 PM
 TOTAL DEPTH: 80.545 ft



- | | | | |
|---|---|--|--|
| ■ 1 sensitive fine grained | ■ 4 silty clay to clay | ■ 7 silty sand to sandy silt | ■ 10 gravelly sand to sand |
| ■ 2 organic material | ■ 5 clayey silt to silty clay | ■ 8 sand to silty sand | ■ 11 very stiff fine grained (*) |
| ■ 3 clay | ■ 6 sandy silt to clayey silt | ■ 9 sand | ■ 12 sand to clayey sand (*) |

*SBT/SPT CORRELATION: UBC-1983

NV5 / CPT-2 / 345 N Pekin Rd Woodland

OPERATOR: OGE DMM
 CONE ID: DDG1654
 TEST DATE: 12/14/2022 12:20:51 PM
 TOTAL DEPTH: 80.545 ft

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
0.164	9.45	0.2963	3.135	0.124	6	4	silty clay to clay
0.328	12.52	0.3540	2.829	0.449	8	4	silty clay to clay
0.492	17.72	0.4707	2.657	0.403	8	5	clayey silt to silty clay
0.656	25.29	0.6526	2.581	0.413	12	5	clayey silt to silty clay
0.820	32.67	0.8155	2.496	0.553	13	6	sandy silt to clayey silt
0.984	32.99	0.8272	2.507	0.419	13	6	sandy silt to clayey silt
1.148	17.81	0.4125	2.316	0.216	9	5	clayey silt to silty clay
1.312	13.13	0.1752	1.334	-0.302	6	5	clayey silt to silty clay
1.476	7.53	0.2220	2.948	-0.228	7	3	clay
1.640	9.57	0.2731	2.853	-0.071	6	4	silty clay to clay
1.804	12.65	0.3082	2.437	-0.010	6	5	clayey silt to silty clay
1.969	11.00	0.2916	2.651	-0.172	7	4	silty clay to clay
2.133	8.85	0.2816	3.183	-0.205	6	4	silty clay to clay
2.297	7.18	0.3055	4.254	-0.129	7	3	clay
2.461	8.55	0.4050	4.736	0.340	8	3	clay
2.625	8.76	0.4980	5.683	0.411	8	3	clay
2.789	8.52	0.4937	5.791	0.325	8	3	clay
2.953	7.56	0.4014	5.307	0.292	7	3	clay
3.117	6.67	0.3834	5.743	0.520	6	3	clay
3.281	6.65	0.4098	6.166	0.665	6	3	clay
3.445	9.40	0.4588	4.882	1.474	9	3	clay
3.609	9.68	0.4201	4.338	1.684	9	3	clay
3.773	12.06	0.2942	2.440	1.603	6	5	clayey silt to silty clay
3.937	17.42	0.2511	1.442	1.339	7	6	sandy silt to clayey silt
4.101	19.64	0.2519	1.283	1.050	8	6	sandy silt to clayey silt
4.265	20.87	0.2951	1.414	0.994	8	6	sandy silt to clayey silt
4.429	22.44	0.3701	1.649	0.969	9	6	sandy silt to clayey silt
4.593	24.40	0.4279	1.754	0.946	9	6	sandy silt to clayey silt
4.757	31.06	0.4774	1.537	0.845	12	6	sandy silt to clayey silt
4.921	34.29	0.5291	1.543	0.784	13	6	sandy silt to clayey silt
5.085	38.00	0.5360	1.410	0.748	12	7	silty sand to sandy silt
5.249	38.22	0.5185	1.357	0.786	12	7	silty sand to sandy silt
5.413	36.27	0.4884	1.346	0.743	12	7	silty sand to sandy silt
5.577	32.05	0.4616	1.440	0.784	12	6	sandy silt to clayey silt
5.741	29.91	0.4694	1.569	0.812	11	6	sandy silt to clayey silt
5.906	30.89	0.4651	1.506	0.819	12	6	sandy silt to clayey silt
6.070	34.34	0.4762	1.387	0.814	11	7	silty sand to sandy silt
6.234	33.86	0.4931	1.456	0.847	13	6	sandy silt to clayey silt
6.398	32.67	0.4736	1.450	0.852	13	6	sandy silt to clayey silt
6.562	36.33	0.4865	1.339	0.870	12	7	silty sand to sandy silt
6.726	39.17	0.4800	1.225	0.865	13	7	silty sand to sandy silt
6.890	37.91	0.4172	1.101	0.824	12	7	silty sand to sandy silt
7.054	41.28	0.3822	0.926	0.791	13	7	silty sand to sandy silt
7.218	45.75	0.3910	0.855	0.822	15	7	silty sand to sandy silt
7.382	46.72	0.3912	0.837	0.812	15	7	silty sand to sandy silt
7.546	44.93	0.3502	0.779	0.809	14	7	silty sand to sandy silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
7.710	43.71	0.2736	0.626	0.832	14	7	silty sand to sandy silt
7.874	44.74	0.2753	0.615	0.835	14	7	silty sand to sandy silt
8.038	37.57	0.2498	0.665	0.893	12	7	silty sand to sandy silt
8.202	36.93	0.2297	0.622	0.875	12	7	silty sand to sandy silt
8.366	45.02	0.2725	0.605	0.893	14	7	silty sand to sandy silt
8.530	51.22	0.3339	0.652	0.931	12	8	sand to silty sand
8.694	51.50	0.3188	0.619	0.949	12	8	sand to silty sand
8.858	50.98	0.2988	0.586	0.961	12	8	sand to silty sand
9.022	50.96	0.3000	0.589	0.982	12	8	sand to silty sand
9.186	48.71	0.2933	0.602	1.040	12	8	sand to silty sand
9.350	49.27	0.2868	0.582	1.055	12	8	sand to silty sand
9.514	55.65	0.3098	0.557	1.068	13	8	sand to silty sand
9.678	61.94	0.3180	0.513	1.063	15	8	sand to silty sand
9.843	56.40	0.3019	0.535	1.131	14	8	sand to silty sand
10.007	49.88	0.2705	0.542	1.088	12	8	sand to silty sand
10.171	44.71	0.2332	0.522	1.076	14	7	silty sand to sandy silt
10.335	44.79	0.2108	0.471	1.068	11	8	sand to silty sand
10.499	45.28	0.1989	0.439	1.065	11	8	sand to silty sand
10.663	41.39	0.1968	0.475	1.093	13	7	silty sand to sandy silt
10.827	40.57	0.1930	0.476	1.093	13	7	silty sand to sandy silt
10.991	45.68	0.2175	0.476	1.114	11	8	sand to silty sand
11.155	51.90	0.2186	0.421	1.109	12	8	sand to silty sand
11.319	44.02	0.2053	0.466	1.202	11	8	sand to silty sand
11.483	44.85	0.4515	1.007	1.192	14	7	silty sand to sandy silt
11.647	52.08	0.6665	1.280	1.195	17	7	silty sand to sandy silt
11.811	49.82	0.7834	1.572	1.157	16	7	silty sand to sandy silt
11.975	51.23	1.1669	2.278	1.007	20	6	sandy silt to clayey silt
12.139	70.44	0.6660	0.945	0.426	17	8	sand to silty sand
12.303	82.65	0.8572	1.037	0.213	20	8	sand to silty sand
12.467	73.66	0.8026	1.090	1.083	18	8	sand to silty sand
12.631	61.34	0.5474	0.892	1.667	15	8	sand to silty sand
12.795	58.54	0.4696	0.802	1.398	14	8	sand to silty sand
12.959	57.32	0.3792	0.662	1.377	14	8	sand to silty sand
13.123	53.88	0.3239	0.601	1.453	13	8	sand to silty sand
13.287	52.51	0.3133	0.597	1.578	13	8	sand to silty sand
13.451	53.69	0.3073	0.572	1.573	13	8	sand to silty sand
13.615	57.67	0.3581	0.621	1.588	14	8	sand to silty sand
13.780	60.07	0.3584	0.597	1.623	14	8	sand to silty sand
13.944	63.81	0.3485	0.546	1.733	15	8	sand to silty sand
14.108	70.37	0.3307	0.470	1.760	17	8	sand to silty sand
14.272	73.21	0.5957	0.814	1.750	18	8	sand to silty sand
14.436	74.92	0.7355	0.982	1.811	18	8	sand to silty sand
14.600	94.44	0.5980	0.633	2.065	23	8	sand to silty sand
14.764	97.62	1.0955	1.122	2.207	23	8	sand to silty sand
14.928	103.52	0.7486	0.723	2.240	25	8	sand to silty sand
15.092	107.67	0.5858	0.544	1.994	26	8	sand to silty sand
15.256	77.50	0.4453	0.575	2.864	19	8	sand to silty sand
15.420	59.84	0.2702	0.451	2.704	14	8	sand to silty sand
15.584	49.27	0.2361	0.479	2.316	12	8	sand to silty sand
15.748	46.51	0.1562	0.336	2.445	11	8	sand to silty sand
15.912	46.27	0.1498	0.324	2.575	11	8	sand to silty sand
16.076	47.82	0.1536	0.321	2.529	11	8	sand to silty sand
16.240	52.19	0.1772	0.339	2.580	12	8	sand to silty sand
16.404	64.74	0.2357	0.364	2.712	15	8	sand to silty sand
16.568	90.90	0.5123	0.564	2.577	22	8	sand to silty sand
16.732	109.92	1.0844	0.987	2.821	26	8	sand to silty sand
16.896	121.93	1.1144	0.914	2.737	29	8	sand to silty sand

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
17.060	130.41	1.2113	0.929	2.844	31	8	sand to silty sand
17.224	129.86	0.6757	0.520	3.031	25	9	sand
17.388	130.40	0.6986	0.536	2.767	25	9	sand
17.552	141.83	1.1389	0.803	2.696	27	9	sand
17.717	167.37	0.8776	0.524	3.072	32	9	sand
17.881	190.88	0.9137	0.479	2.729	37	9	sand
18.045	179.43	0.6246	0.348	3.442	34	9	sand
18.209	169.74	1.3921	0.820	2.374	33	9	sand
18.373	170.42	1.0829	0.635	3.818	33	9	sand
18.537	146.37	2.7124	1.853	3.650	47	7	silty sand to sandy silt
18.701	183.16	3.4683	1.894	4.485	44	8	sand to silty sand
18.865	135.55	1.7739	1.309	2.217	32	8	sand to silty sand
19.029	130.01	3.0992	2.384	3.574	41	7	silty sand to sandy silt
19.193	177.40	2.2120	1.247	4.647	42	8	sand to silty sand
19.357	175.27	2.3686	1.351	3.366	42	8	sand to silty sand
19.521	244.21	1.0416	0.427	4.670	47	9	sand
19.685	236.72	1.1976	0.506	5.231	45	9	sand
19.849	185.95	1.0838	0.583	4.929	36	9	sand
20.013	186.89	1.1572	0.619	6.301	36	9	sand
20.177	182.91	0.9712	0.531	5.411	35	9	sand
20.341	161.52	1.3481	0.835	8.016	31	9	sand
20.505	180.57	1.7139	0.949	7.387	35	9	sand
20.669	215.80	2.0877	0.967	8.193	41	9	sand
20.833	240.30	1.5625	0.650	3.917	46	9	sand
20.997	245.34	2.2659	0.924	2.537	47	9	sand
21.161	241.89	2.9481	1.219	5.271	46	9	sand
21.325	211.56	2.5219	1.192	3.960	41	9	sand
21.490	132.47	1.9962	1.507	6.073	32	8	sand to silty sand
21.654	146.64	1.0641	0.726	6.778	28	9	sand
21.818	162.85	0.7475	0.459	7.338	31	9	sand
21.982	169.37	1.2972	0.766	5.816	32	9	sand
22.146	131.06	1.7020	1.299	6.966	31	8	sand to silty sand
22.310	139.69	1.7391	1.245	6.012	33	8	sand to silty sand
22.474	128.24	1.5951	1.244	6.154	31	8	sand to silty sand
22.638	149.15	1.5557	1.043	7.207	36	8	sand to silty sand
22.802	192.78	0.7100	0.368	9.725	37	9	sand
22.966	241.09	1.5291	0.634	7.932	46	9	sand
23.130	235.69	1.2014	0.510	6.550	45	9	sand
23.294	184.98	1.3046	0.705	3.932	35	9	sand
23.458	163.02	0.8591	0.527	6.357	31	9	sand
23.622	144.51	1.0121	0.700	8.150	28	9	sand
23.786	125.47	1.1642	0.928	6.593	30	8	sand to silty sand
23.950	103.61	1.0055	0.971	7.115	25	8	sand to silty sand
24.114	99.15	0.5398	0.544	6.960	24	8	sand to silty sand
24.278	110.43	1.0954	0.992	6.319	26	8	sand to silty sand
24.442	146.89	1.2280	0.836	7.280	28	9	sand
24.606	149.28	0.9347	0.626	8.196	29	9	sand
24.770	141.22	0.6790	0.481	6.116	27	9	sand
24.934	117.86	0.6421	0.545	8.622	23	9	sand
25.098	100.64	0.5523	0.549	8.117	24	8	sand to silty sand
25.262	90.11	0.6546	0.726	7.968	22	8	sand to silty sand
25.427	83.39	0.6709	0.805	7.724	20	8	sand to silty sand
25.591	81.28	1.2875	1.584	6.801	26	7	silty sand to sandy silt
25.755	84.14	0.9353	1.112	7.331	20	8	sand to silty sand
25.919	88.49	0.8469	0.957	7.019	21	8	sand to silty sand
26.083	64.92	0.3400	0.524	7.242	16	8	sand to silty sand
26.247	67.88	0.7830	1.153	6.811	22	7	silty sand to sandy silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
26.411	60.82	0.5843	0.961	8.127	19	7	silty sand to sandy silt
26.575	58.63	0.4685	0.799	7.699	14	8	sand to silty sand
26.739	74.23	0.5836	0.786	6.856	18	8	sand to silty sand
26.903	70.81	1.1944	1.687	9.353	23	7	silty sand to sandy silt
27.067	73.19	0.8095	1.106	7.285	18	8	sand to silty sand
27.231	77.25	1.0366	1.342	7.985	25	7	silty sand to sandy silt
27.395	88.04	1.3147	1.493	7.927	28	7	silty sand to sandy silt
27.559	52.58	0.9304	1.769	8.333	17	7	silty sand to sandy silt
27.723	14.16	0.4488	3.170	13.579	9	4	silty clay to clay
27.887	11.85	0.3225	2.722	12.939	8	4	silty clay to clay
28.051	13.39	0.2056	1.536	22.277	6	5	clayey silt to silty clay
28.215	13.69	0.2459	1.796	37.002	7	5	clayey silt to silty clay
28.379	18.23	0.2429	1.332	40.193	7	6	sandy silt to clayey silt
28.543	29.38	0.2795	0.951	28.392	9	7	silty sand to sandy silt
28.707	27.02	0.2876	1.064	21.110	10	6	sandy silt to clayey silt
28.871	21.86	0.2408	1.102	24.970	8	6	sandy silt to clayey silt
29.035	18.69	0.2031	1.087	24.856	7	6	sandy silt to clayey silt
29.199	11.23	0.1994	1.776	24.894	5	5	clayey silt to silty clay
29.364	9.40	0.1132	1.205	31.061	4	5	clayey silt to silty clay
29.528	16.13	0.0928	0.576	34.323	6	6	sandy silt to clayey silt
29.692	15.09	0.0931	0.617	15.613	6	6	sandy silt to clayey silt
29.856	10.73	0.1487	1.385	22.167	5	5	clayey silt to silty clay
30.020	19.93	0.1862	0.934	23.963	8	6	sandy silt to clayey silt
30.184	22.00	0.2791	1.269	20.838	8	6	sandy silt to clayey silt
30.348	29.88	0.1960	0.656	18.642	10	7	silty sand to sandy silt
30.512	35.73	0.1185	0.331	14.545	11	7	silty sand to sandy silt
30.676	35.34	0.2110	0.597	13.500	11	7	silty sand to sandy silt
30.840	35.93	0.2629	0.732	13.064	11	7	silty sand to sandy silt
31.004	45.86	0.3519	0.767	12.574	15	7	silty sand to sandy silt
31.168	51.06	0.5044	0.988	12.016	16	7	silty sand to sandy silt
31.332	49.24	0.6840	1.389	12.533	16	7	silty sand to sandy silt
31.496	34.64	0.5820	1.680	13.223	13	6	sandy silt to clayey silt
31.660	20.57	0.2748	1.335	14.991	8	6	sandy silt to clayey silt
31.824	12.01	0.2561	2.133	19.177	6	5	clayey silt to silty clay
31.988	19.42	0.1684	0.867	30.926	7	6	sandy silt to clayey silt
32.152	37.27	0.2816	0.756	21.521	12	7	silty sand to sandy silt
32.316	42.02	0.3218	0.766	16.036	13	7	silty sand to sandy silt
32.480	45.67	0.3961	0.867	15.714	15	7	silty sand to sandy silt
32.644	47.09	0.2332	0.495	13.771	11	8	sand to silty sand
32.808	51.57	0.2222	0.431	13.251	12	8	sand to silty sand
32.972	51.38	0.2257	0.439	10.552	12	8	sand to silty sand
33.136	54.22	0.2260	0.417	10.431	13	8	sand to silty sand
33.301	53.62	0.2273	0.424	10.294	13	8	sand to silty sand
33.465	48.29	0.2162	0.448	10.585	12	8	sand to silty sand
33.629	42.25	0.2759	0.653	10.461	13	7	silty sand to sandy silt
33.793	33.75	0.4012	1.189	10.334	11	7	silty sand to sandy silt
33.957	26.05	0.2967	1.139	11.194	10	6	sandy silt to clayey silt
34.121	21.02	0.2473	1.176	14.357	8	6	sandy silt to clayey silt
34.285	16.64	0.1739	1.045	24.448	6	6	sandy silt to clayey silt
34.449	16.03	0.2114	1.319	27.865	6	6	sandy silt to clayey silt
34.613	12.77	0.2456	1.924	32.360	6	5	clayey silt to silty clay
34.777	11.27	0.1677	1.488	39.226	5	5	clayey silt to silty clay
34.941	12.69	0.1161	0.915	43.097	5	6	sandy silt to clayey silt
35.105	9.96	0.1092	1.097	46.724	5	5	clayey silt to silty clay
35.269	9.48	0.0870	0.917	56.008	5	5	clayey silt to silty clay
35.433	8.91	0.0831	0.933	57.860	4	5	clayey silt to silty clay
35.597	8.70	0.0806	0.926	59.506	4	5	clayey silt to silty clay

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
35.761	8.79	0.0838	0.953	60.661	4	5	clayey silt to silty clay
35.925	9.09	0.0678	0.745	58.839	4	5	clayey silt to silty clay
36.089	9.21	0.0658	0.715	60.176	4	5	clayey silt to silty clay
36.253	9.40	0.0699	0.743	60.496	4	5	clayey silt to silty clay
36.417	9.49	0.0679	0.716	62.005	5	5	clayey silt to silty clay
36.581	9.63	0.0722	0.750	64.341	5	5	clayey silt to silty clay
36.745	9.82	0.0799	0.814	63.337	5	5	clayey silt to silty clay
36.909	9.75	0.0819	0.840	62.421	5	5	clayey silt to silty clay
37.073	9.70	0.0751	0.774	61.825	5	5	clayey silt to silty clay
37.238	9.29	0.0732	0.788	61.962	4	5	clayey silt to silty clay
37.402	9.03	0.0784	0.869	62.066	4	5	clayey silt to silty clay
37.566	10.94	0.1148	1.050	67.773	5	5	clayey silt to silty clay
37.730	12.20	0.2214	1.816	72.486	6	5	clayey silt to silty clay
37.894	11.33	0.2791	2.464	53.916	5	5	clayey silt to silty clay
38.058	9.64	0.1630	1.692	54.405	5	5	clayey silt to silty clay
38.222	9.28	0.0957	1.031	60.217	4	5	clayey silt to silty clay
38.386	9.60	0.0881	0.918	64.656	5	5	clayey silt to silty clay
38.550	9.39	0.0877	0.934	64.803	4	5	clayey silt to silty clay
38.714	9.41	0.0831	0.883	66.421	5	5	clayey silt to silty clay
38.878	9.74	0.0778	0.798	65.173	5	5	clayey silt to silty clay
39.042	9.51	0.0805	0.846	64.427	5	5	clayey silt to silty clay
39.206	9.71	0.0731	0.753	66.173	4	6	sandy silt to clayey silt
39.370	9.70	0.0724	0.747	64.230	4	6	sandy silt to clayey silt
39.534	9.39	0.0711	0.757	65.396	4	5	clayey silt to silty clay
39.698	9.24	0.0708	0.766	66.442	4	5	clayey silt to silty clay
39.862	9.06	0.0742	0.820	67.624	4	5	clayey silt to silty clay
40.026	9.27	0.0747	0.806	66.584	4	5	clayey silt to silty clay
40.190	9.47	0.0840	0.887	64.323	5	5	clayey silt to silty clay
40.354	9.22	0.0862	0.934	64.699	4	5	clayey silt to silty clay
40.518	9.16	0.0779	0.851	65.840	4	5	clayey silt to silty clay
40.682	9.01	0.0820	0.910	66.693	4	5	clayey silt to silty clay
40.846	9.31	0.0915	0.983	70.688	4	5	clayey silt to silty clay
41.011	9.94	0.0906	0.912	69.420	5	5	clayey silt to silty clay
41.175	9.75	0.0952	0.977	66.216	5	5	clayey silt to silty clay
41.339	9.89	0.0798	0.807	67.416	5	5	clayey silt to silty clay
41.503	9.52	0.0753	0.792	68.164	5	5	clayey silt to silty clay
41.667	9.40	0.0737	0.784	69.229	5	5	clayey silt to silty clay
41.831	9.84	0.0718	0.730	67.289	4	6	sandy silt to clayey silt
41.995	9.67	0.0802	0.829	66.467	5	5	clayey silt to silty clay
42.159	9.80	0.0782	0.798	68.032	5	5	clayey silt to silty clay
42.323	9.96	0.0793	0.797	69.480	4	6	sandy silt to clayey silt
42.487	9.73	0.0695	0.714	69.255	4	6	sandy silt to clayey silt
42.651	9.89	0.0696	0.703	72.050	4	6	sandy silt to clayey silt
42.815	9.92	0.0734	0.740	73.521	4	6	sandy silt to clayey silt
42.979	10.39	0.0776	0.747	73.917	4	6	sandy silt to clayey silt
43.143	10.87	0.0950	0.874	74.541	4	6	sandy silt to clayey silt
43.307	11.19	0.1186	1.060	72.040	5	5	clayey silt to silty clay
43.471	11.45	0.1381	1.206	71.073	5	5	clayey silt to silty clay
43.635	11.41	0.1442	1.263	68.197	5	5	clayey silt to silty clay
43.799	11.14	0.1439	1.292	69.102	5	5	clayey silt to silty clay
43.963	10.93	0.1543	1.412	68.319	5	5	clayey silt to silty clay
44.127	12.01	0.1691	1.408	69.212	6	5	clayey silt to silty clay
44.291	12.30	0.1777	1.445	68.478	6	5	clayey silt to silty clay
44.455	12.10	0.1770	1.463	69.622	6	5	clayey silt to silty clay
44.619	12.13	0.1922	1.585	71.558	6	5	clayey silt to silty clay
44.783	13.18	0.2205	1.673	72.814	6	5	clayey silt to silty clay
44.948	13.78	0.2445	1.775	71.170	7	5	clayey silt to silty clay

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
45.112	13.88	0.2471	1.780	69.635	7	5	clayey silt to silty clay
45.276	13.59	0.2346	1.726	67.834	7	5	clayey silt to silty clay
45.440	13.26	0.2179	1.644	65.805	6	5	clayey silt to silty clay
45.604	12.89	0.2051	1.591	64.029	6	5	clayey silt to silty clay
45.768	12.62	0.2899	2.298	64.296	6	5	clayey silt to silty clay
45.932	12.46	0.4763	3.824	65.234	12	3	clay
46.096	21.22	0.3862	1.819	40.779	8	6	sandy silt to clayey silt
46.260	24.56	0.3727	1.517	29.336	9	6	sandy silt to clayey silt
46.424	22.37	0.4415	1.973	28.134	9	6	sandy silt to clayey silt
46.588	22.54	0.5088	2.257	31.629	11	5	clayey silt to silty clay
46.752	34.15	0.4985	1.460	26.911	13	6	sandy silt to clayey silt
46.916	46.24	0.3994	0.864	20.176	15	7	silty sand to sandy silt
47.080	52.20	0.4606	0.882	16.346	17	7	silty sand to sandy silt
47.244	43.60	0.4826	1.107	15.085	14	7	silty sand to sandy silt
47.408	36.95	0.6663	1.803	17.244	14	6	sandy silt to clayey silt
47.572	34.91	0.6095	1.746	18.877	13	6	sandy silt to clayey silt
47.736	40.03	0.6932	1.732	17.348	15	6	sandy silt to clayey silt
47.900	39.62	0.6232	1.573	16.158	13	7	silty sand to sandy silt
48.064	45.57	0.5267	1.156	15.014	15	7	silty sand to sandy silt
48.228	39.55	0.6677	1.688	13.236	15	6	sandy silt to clayey silt
48.392	25.80	0.5874	2.277	13.099	10	6	sandy silt to clayey silt
48.556	15.44	0.4329	2.803	19.496	7	5	clayey silt to silty clay
48.720	13.31	0.2608	1.960	22.682	6	5	clayey silt to silty clay
48.885	12.72	0.1727	1.357	26.990	6	5	clayey silt to silty clay
49.049	12.05	0.1745	1.448	32.174	6	5	clayey silt to silty clay
49.213	12.04	0.1779	1.477	41.575	6	5	clayey silt to silty clay
49.377	12.62	0.2019	1.599	68.184	6	5	clayey silt to silty clay
49.541	12.94	0.2245	1.734	71.431	6	5	clayey silt to silty clay
49.705	12.87	0.2231	1.734	72.644	6	5	clayey silt to silty clay
49.869	12.30	0.2041	1.660	72.392	6	5	clayey silt to silty clay
50.033	12.02	0.1930	1.606	73.334	6	5	clayey silt to silty clay
50.197	12.36	0.2056	1.663	75.611	6	5	clayey silt to silty clay
50.361	12.79	0.2402	1.878	77.996	6	5	clayey silt to silty clay
50.525	12.90	0.2488	1.928	78.737	6	5	clayey silt to silty clay
50.689	13.61	0.2752	2.022	82.876	7	5	clayey silt to silty clay
50.853	14.60	0.2939	2.013	89.492	7	5	clayey silt to silty clay
51.017	13.66	0.2851	2.088	84.038	7	5	clayey silt to silty clay
51.181	14.11	0.2625	1.860	87.447	7	5	clayey silt to silty clay
51.345	14.40	0.2642	1.835	89.986	7	5	clayey silt to silty clay
51.509	14.68	0.3133	2.134	88.256	7	5	clayey silt to silty clay
51.673	13.69	0.2822	2.061	74.457	7	5	clayey silt to silty clay
51.837	12.46	0.2390	1.919	70.396	6	5	clayey silt to silty clay
52.001	11.53	0.1796	1.557	71.715	6	5	clayey silt to silty clay
52.165	11.39	0.1570	1.379	72.907	5	5	clayey silt to silty clay
52.329	11.15	0.1144	1.026	72.819	5	5	clayey silt to silty clay
52.493	10.77	0.1150	1.067	76.423	5	5	clayey silt to silty clay
52.657	10.94	0.1143	1.044	74.856	5	5	clayey silt to silty clay
52.822	10.96	0.1087	0.992	76.794	5	5	clayey silt to silty clay
52.986	11.05	0.1096	0.992	79.518	5	5	clayey silt to silty clay
53.150	11.60	0.1070	0.923	82.222	4	6	sandy silt to clayey silt
53.314	11.78	0.1079	0.916	81.930	5	6	sandy silt to clayey silt
53.478	12.14	0.1162	0.958	86.006	5	6	sandy silt to clayey silt
53.642	12.30	0.1087	0.884	82.960	5	6	sandy silt to clayey silt
53.806	12.12	0.0948	0.782	79.840	5	6	sandy silt to clayey silt
53.970	12.62	0.0802	0.635	80.801	5	6	sandy silt to clayey silt
54.134	12.37	0.0713	0.577	81.786	5	6	sandy silt to clayey silt
54.298	12.27	0.0913	0.744	86.519	5	6	sandy silt to clayey silt

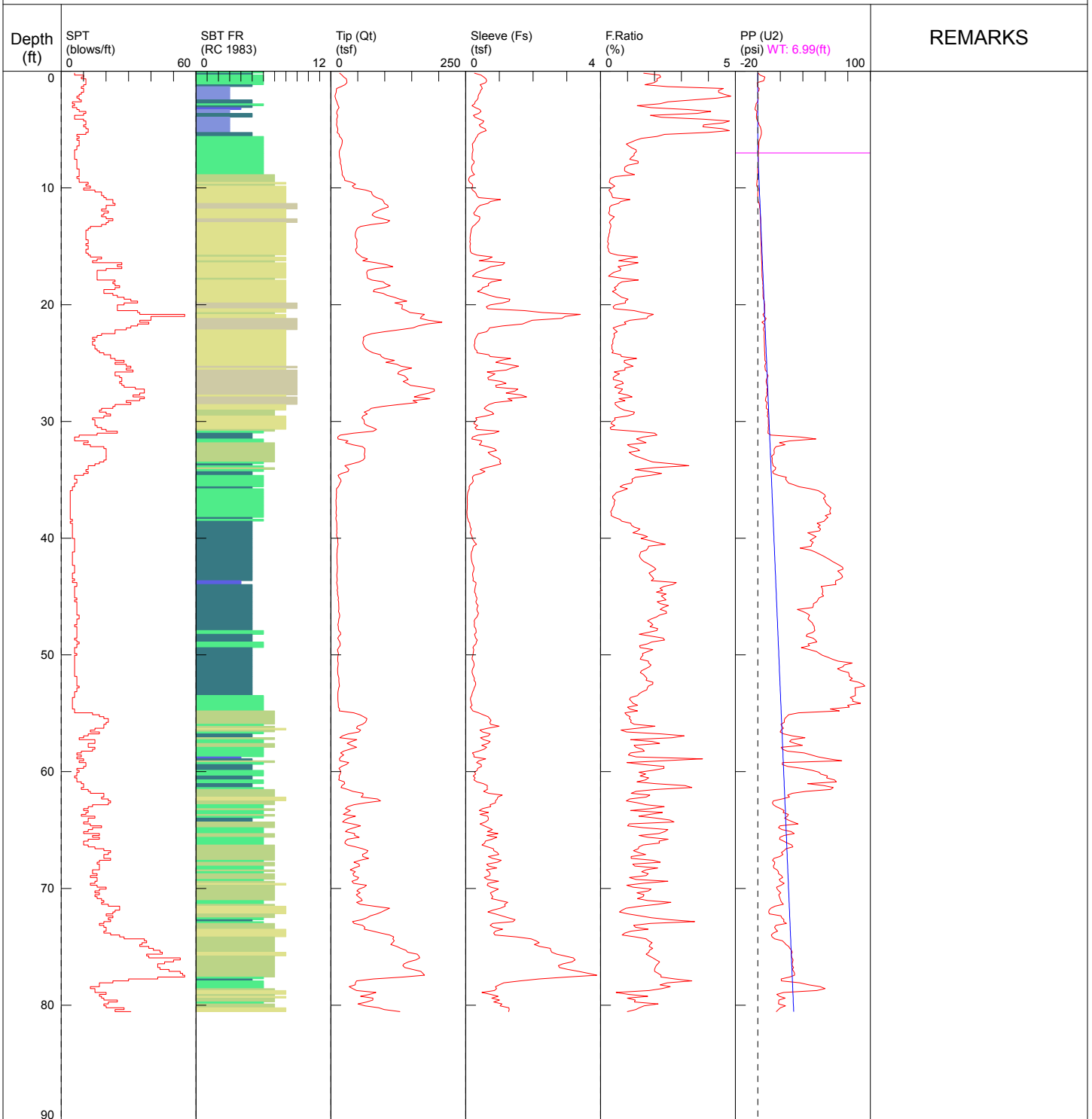
Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
54.462	12.71	0.1055	0.830	85.750	5	6	sandy silt to clayey silt
54.626	12.50	0.1265	1.012	88.792	5	6	sandy silt to clayey silt
54.790	13.72	0.1190	0.868	90.694	5	6	sandy silt to clayey silt
54.954	14.27	0.1262	0.884	81.930	5	6	sandy silt to clayey silt
55.118	13.52	0.1565	1.157	86.321	5	6	sandy silt to clayey silt
55.282	14.25	0.1597	1.121	89.766	5	6	sandy silt to clayey silt
55.446	13.81	0.1610	1.165	83.642	5	6	sandy silt to clayey silt
55.610	13.77	0.1376	0.999	83.840	5	6	sandy silt to clayey silt
55.774	13.22	0.1520	1.150	89.639	5	6	sandy silt to clayey silt
55.938	13.21	0.1570	1.189	93.276	5	6	sandy silt to clayey silt
56.102	12.83	0.1625	1.267	93.654	6	5	clayey silt to silty clay
56.266	12.99	0.1615	1.243	94.573	5	6	sandy silt to clayey silt
56.430	13.39	0.1603	1.197	92.637	5	6	sandy silt to clayey silt
56.594	13.01	0.1827	1.404	94.948	6	5	clayey silt to silty clay
56.759	13.02	0.1933	1.484	88.906	6	5	clayey silt to silty clay
56.923	13.17	0.1632	1.240	87.189	5	6	sandy silt to clayey silt
57.087	12.84	0.1550	1.207	83.759	5	6	sandy silt to clayey silt
57.251	12.52	0.1325	1.059	82.503	5	6	sandy silt to clayey silt
57.415	12.75	0.1415	1.110	79.979	5	6	sandy silt to clayey silt
57.579	12.63	0.1508	1.194	84.992	5	6	sandy silt to clayey silt
57.743	12.62	0.1808	1.432	90.783	6	5	clayey silt to silty clay
57.907	13.37	0.2074	1.551	90.585	6	5	clayey silt to silty clay
58.071	13.96	0.2140	1.533	86.712	7	5	clayey silt to silty clay
58.235	13.88	0.1956	1.409	88.972	7	5	clayey silt to silty clay
58.399	13.18	0.1873	1.420	92.041	6	5	clayey silt to silty clay
58.563	13.69	0.2056	1.502	97.284	7	5	clayey silt to silty clay
58.727	14.31	0.2588	1.809	95.747	7	5	clayey silt to silty clay
58.891	14.99	0.1844	1.230	93.041	6	6	sandy silt to clayey silt
59.055	15.62	0.2268	1.452	85.248	6	6	sandy silt to clayey silt
59.219	15.51	0.2959	1.908	86.904	7	5	clayey silt to silty clay
59.383	15.59	0.2378	1.526	82.470	6	6	sandy silt to clayey silt
59.547	13.86	0.1628	1.175	74.181	5	6	sandy silt to clayey silt
59.711	12.38	0.1313	1.060	77.636	5	6	sandy silt to clayey silt
59.875	12.29	0.1416	1.152	81.200	5	6	sandy silt to clayey silt
60.039	13.82	0.1588	1.149	83.122	5	6	sandy silt to clayey silt
60.203	14.05	0.2945	2.096	81.093	7	5	clayey silt to silty clay
60.367	14.14	0.2459	1.739	82.268	7	5	clayey silt to silty clay
60.532	19.48	0.4315	2.215	66.066	9	5	clayey silt to silty clay
60.696	19.75	0.4537	2.297	73.706	9	5	clayey silt to silty clay
60.860	75.67	0.5423	0.717	30.921	18	8	sand to silty sand
61.024	105.85	0.7648	0.722	24.098	25	8	sand to silty sand
61.188	141.13	1.1992	0.850	25.523	27	9	sand
61.352	155.39	1.6293	1.048	26.300	37	8	sand to silty sand
61.516	150.42	1.6713	1.111	25.298	36	8	sand to silty sand
61.680	133.45	1.4897	1.116	24.458	32	8	sand to silty sand
61.844	99.24	1.3522	1.363	23.327	24	8	sand to silty sand
62.008	58.91	1.3065	2.218	22.939	23	6	sandy silt to clayey silt
62.172	37.54	0.5124	1.365	22.845	12	7	silty sand to sandy silt
62.336	37.93	0.5335	1.406	29.582	12	7	silty sand to sandy silt
62.500	30.36	0.7306	2.407	21.277	12	6	sandy silt to clayey silt
62.664	21.31	0.7281	3.417	27.302	10	5	clayey silt to silty clay
62.828	26.35	0.4711	1.788	35.459	10	6	sandy silt to clayey silt
62.992	38.47	0.7660	1.991	29.582	15	6	sandy silt to clayey silt
63.156	33.74	0.7588	2.249	27.624	13	6	sandy silt to clayey silt
63.320	40.98	0.4717	1.151	30.234	13	7	silty sand to sandy silt
63.484	71.55	0.6643	0.928	26.221	17	8	sand to silty sand
63.648	72.96	0.9649	1.322	22.647	23	7	silty sand to sandy silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior UBC-1983	Type
63.812	87.96	0.6426	0.730	22.786	21	8	sand to silty sand	
63.976	108.22	0.6094	0.563	21.252	26	8	sand to silty sand	
64.140	94.21	1.0423	1.106	20.334	23	8	sand to silty sand	
64.304	94.71	1.1331	1.196	19.677	23	8	sand to silty sand	
64.469	124.32	0.7909	0.636	20.161	24	9	sand	
64.633	122.76	0.7147	0.582	19.742	24	9	sand	
64.797	113.11	1.1429	1.010	19.494	27	8	sand to silty sand	
64.961	116.11	1.1834	1.019	18.525	28	8	sand to silty sand	
65.125	124.83	1.0787	0.864	18.928	30	8	sand to silty sand	
65.289	119.29	0.9170	0.769	18.500	29	8	sand to silty sand	
65.453	121.45	0.5380	0.443	18.155	23	9	sand	
65.617	126.56	0.6206	0.490	18.989	24	9	sand	
65.781	100.59	0.6614	0.658	16.754	24	8	sand to silty sand	
65.945	84.93	0.8011	0.943	17.533	20	8	sand to silty sand	
66.109	70.61	0.8667	1.227	17.759	23	7	silty sand to sandy silt	
66.273	59.61	0.9529	1.599	18.634	19	7	silty sand to sandy silt	
66.437	56.62	1.0449	1.845	19.210	18	7	silty sand to sandy silt	
66.601	82.82	0.8947	1.080	18.654	20	8	sand to silty sand	
66.765	112.86	0.8442	0.748	16.775	27	8	sand to silty sand	
66.929	123.45	0.9914	0.803	16.404	30	8	sand to silty sand	
67.093	147.50	1.1928	0.809	17.751	28	9	sand	
67.257	162.84	1.4854	0.912	18.550	31	9	sand	
67.421	167.22	1.6207	0.969	18.905	32	9	sand	
67.585	161.12	1.7939	1.113	19.532	39	8	sand to silty sand	
67.749	147.44	1.7506	1.187	19.456	35	8	sand to silty sand	
67.913	122.87	1.5001	1.221	19.037	29	8	sand to silty sand	
68.077	103.49	1.4369	1.388	19.177	25	8	sand to silty sand	
68.241	111.50	1.3137	1.178	19.775	27	8	sand to silty sand	
68.406	153.48	0.9541	0.622	20.011	29	9	sand	
68.570	178.20	0.7055	0.396	18.248	34	9	sand	
68.734	170.10	0.6556	0.385	18.652	33	9	sand	
68.898	158.01	0.8035	0.509	18.895	30	9	sand	
69.062	140.29	0.9627	0.686	16.638	27	9	sand	
69.226	131.82	1.2391	0.940	18.188	32	8	sand to silty sand	
69.390	122.83	1.2687	1.033	18.461	29	8	sand to silty sand	
69.554	115.14	1.0864	0.943	18.761	28	8	sand to silty sand	
69.718	117.31	1.0023	0.854	18.931	28	8	sand to silty sand	
69.882	112.99	1.0080	0.892	19.618	27	8	sand to silty sand	
70.046	99.65	0.9928	0.996	20.217	24	8	sand to silty sand	
70.210	86.08	1.2751	1.481	20.782	27	7	silty sand to sandy silt	
70.374	123.61	1.0446	0.845	18.479	30	8	sand to silty sand	
70.538	139.33	0.7806	0.560	16.417	27	9	sand	
70.702	142.07	0.9921	0.698	16.729	27	9	sand	
70.866	158.48	1.1278	0.712	16.810	30	9	sand	
71.030	174.83	1.5073	0.862	16.970	33	9	sand	
71.194	181.20	1.8292	1.009	18.390	35	9	sand	
71.358	173.41	1.9371	1.117	18.847	42	8	sand to silty sand	
71.522	164.14	1.9227	1.171	19.116	39	8	sand to silty sand	
71.686	155.40	1.9005	1.223	19.484	37	8	sand to silty sand	
71.850	159.62	1.9833	1.242	19.699	38	8	sand to silty sand	
72.014	162.95	0.7287	0.447	20.402	31	9	sand	
72.178	162.73	0.9694	0.596	20.881	31	9	sand	
72.343	149.53	1.3117	0.877	20.491	29	9	sand	
72.507	132.65	1.6164	1.219	20.925	32	8	sand to silty sand	
72.671	115.85	1.0924	0.943	20.945	28	8	sand to silty sand	
72.835	103.55	0.9526	0.920	20.828	25	8	sand to silty sand	
72.999	96.72	0.9006	0.931	22.079	23	8	sand to silty sand	

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil UBC-1983	Behavior	Type
73.163	95.53	0.8533	0.893	22.414	23	8	sand	to silty	sand
73.327	117.31	0.9342	0.796	23.464	28	8	sand	to silty	sand
73.491	143.81	1.1711	0.814	24.232	28	9		sand	
73.655	167.03	1.4813	0.887	25.546	32	9		sand	
73.819	175.17	1.8276	1.043	25.584	34	9		sand	
73.983	158.98	1.8959	1.193	25.790	38	8	sand	to silty	sand
74.147	133.09	1.7771	1.335	24.757	32	8	sand	to silty	sand
74.311	116.44	1.5219	1.307	23.887	28	8	sand	to silty	sand
74.475	107.58	1.2858	1.195	23.613	26	8	sand	to silty	sand
74.639	103.29	1.1511	1.114	23.631	25	8	sand	to silty	sand
74.803	101.29	1.0278	1.015	23.847	24	8	sand	to silty	sand
74.967	100.20	0.9720	0.970	24.057	24	8	sand	to silty	sand
75.131	99.42	0.9265	0.932	24.341	24	8	sand	to silty	sand
75.295	100.76	0.2457	0.244	24.740	19	9		sand	
75.459	101.64	0.4439	0.437	24.996	19	9		sand	
75.623	101.71	0.6154	0.605	23.433	24	8	sand	to silty	sand
75.787	106.73	0.8007	0.750	24.874	26	8	sand	to silty	sand
75.951	112.24	0.8576	0.764	25.371	27	8	sand	to silty	sand
76.115	119.36	0.9667	0.810	25.726	29	8	sand	to silty	sand
76.280	130.53	1.1192	0.857	25.868	31	8	sand	to silty	sand
76.444	134.75	1.2533	0.930	26.673	32	8	sand	to silty	sand
76.608	136.35	1.3345	0.979	27.038	33	8	sand	to silty	sand
76.772	146.89	1.4379	0.979	26.652	35	8	sand	to silty	sand
76.936	143.52	1.4196	0.989	27.228	34	8	sand	to silty	sand
77.100	131.44	1.2628	0.961	26.325	31	8	sand	to silty	sand
77.264	147.36	1.3121	0.890	26.766	28	9		sand	
77.428	141.56	1.3327	0.941	27.154	34	8	sand	to silty	sand
77.592	129.78	1.1355	0.875	26.305	31	8	sand	to silty	sand
77.756	126.04	1.0367	0.823	26.399	30	8	sand	to silty	sand
77.920	118.46	0.9249	0.781	26.087	28	8	sand	to silty	sand
78.084	127.73	0.8985	0.703	26.348	24	9		sand	
78.248	129.22	0.9473	0.733	26.399	25	9		sand	
78.412	120.46	1.0263	0.852	27.010	29	8	sand	to silty	sand
78.576	108.84	0.2884	0.265	27.294	21	9		sand	
78.740	95.15	0.3296	0.346	26.738	18	9		sand	
78.904	81.05	0.3858	0.476	23.859	19	8	sand	to silty	sand
79.068	79.65	0.4948	0.621	24.765	19	8	sand	to silty	sand
79.232	82.78	0.5881	0.710	25.709	20	8	sand	to silty	sand
79.396	102.40	0.7905	0.772	26.985	25	8	sand	to silty	sand
79.560	119.92	0.9783	0.816	28.884	29	8	sand	to silty	sand
79.724	122.82	1.0525	0.857	28.121	29	8	sand	to silty	sand
79.888	131.87	1.0962	0.831	28.075	32	8	sand	to silty	sand
80.052	142.92	1.2432	0.870	28.687	27	9		sand	
80.217	139.79	1.2937	0.925	28.689	33	8	sand	to silty	sand
80.381	123.37	1.0603	0.859	27.971	30	8	sand	to silty	sand
80.545	105.09	0.8902	0.847	27.565	25	8	sand	to silty	sand

NV5 / CPT-3 / 345 N Pekin Rd Woodland

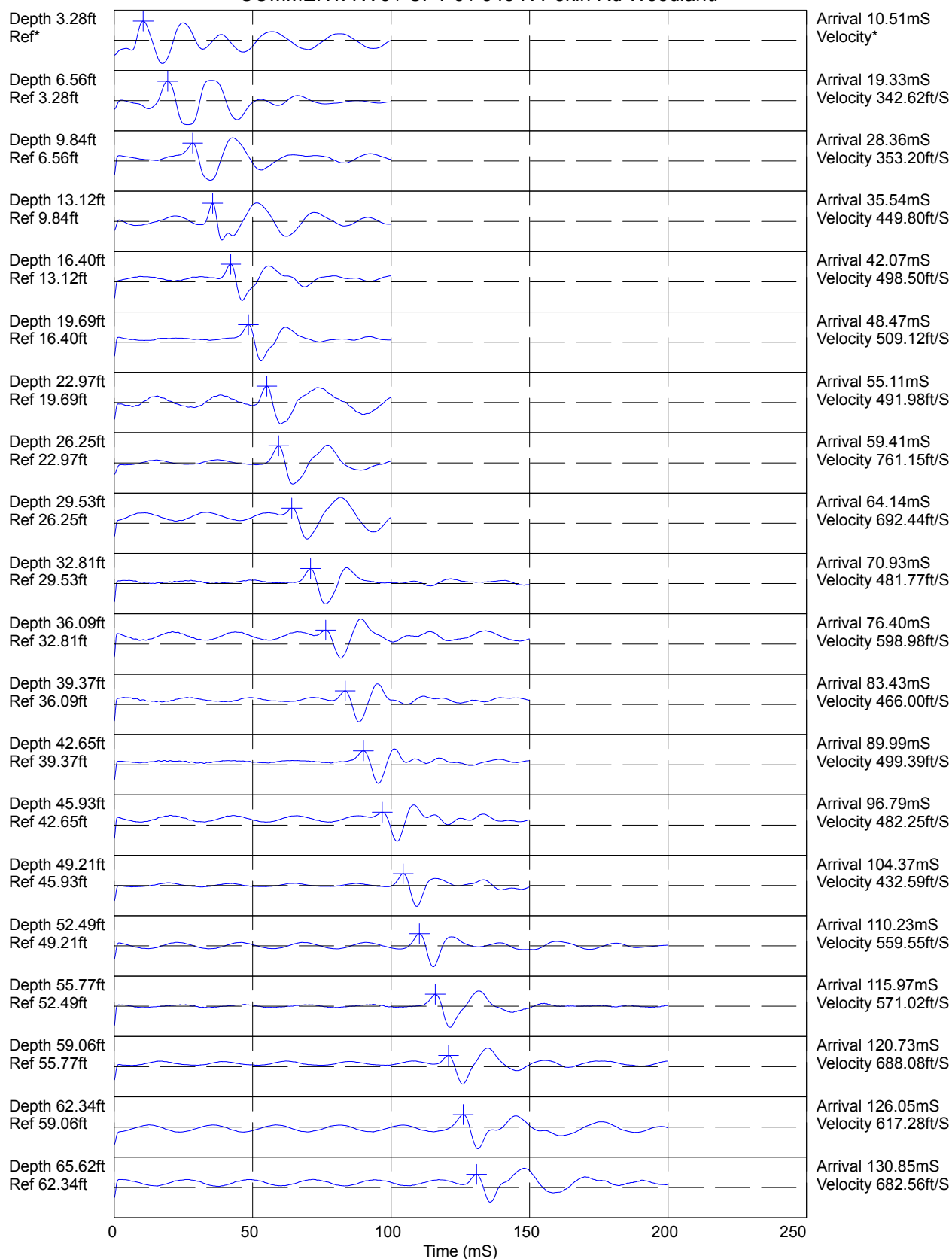
OPERATOR: OGE DMM
 CONE ID: DDG1654
 TEST DATE: 12/14/2022 9:41:14 AM
 TOTAL DEPTH: 80.545 ft



- | | | | |
|---|--|--|--|
| ■ 1 sensitive fine grained | ■ 4 silty clay to clay | ■ 7 silty sand to sandy silt | ■ 10 gravelly sand to sand |
| ■ 2 organic material | ■ 5 clayey silt to silty clay | ■ 8 sand to silty sand | ■ 11 very stiff fine grained (*) |
| ■ 3 clay | ■ 6 sandy silt to clayey silt | ■ 9 sand | ■ 12 sand to clayey sand (*) |

*SBT/SPT CORRELATION: UBC-1983

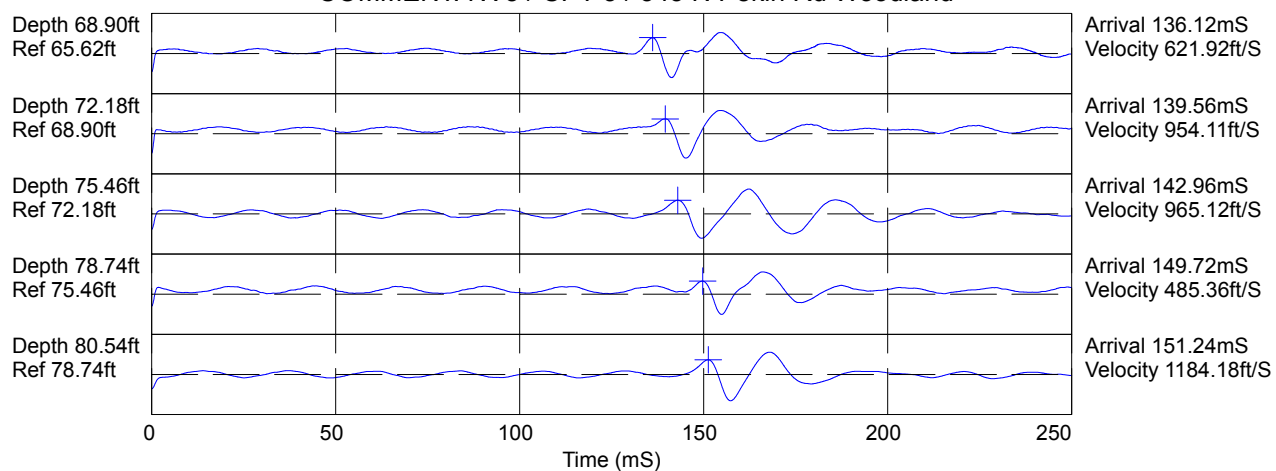
COMMENT: NV5 / CPT-3 / 345 N Pekin Rd Woodland



Hammer to Rod String Distance (ft): 1.97

* = Not Determined

COMMENT: NV5 / CPT-3 / 345 N Pekin Rd Woodland

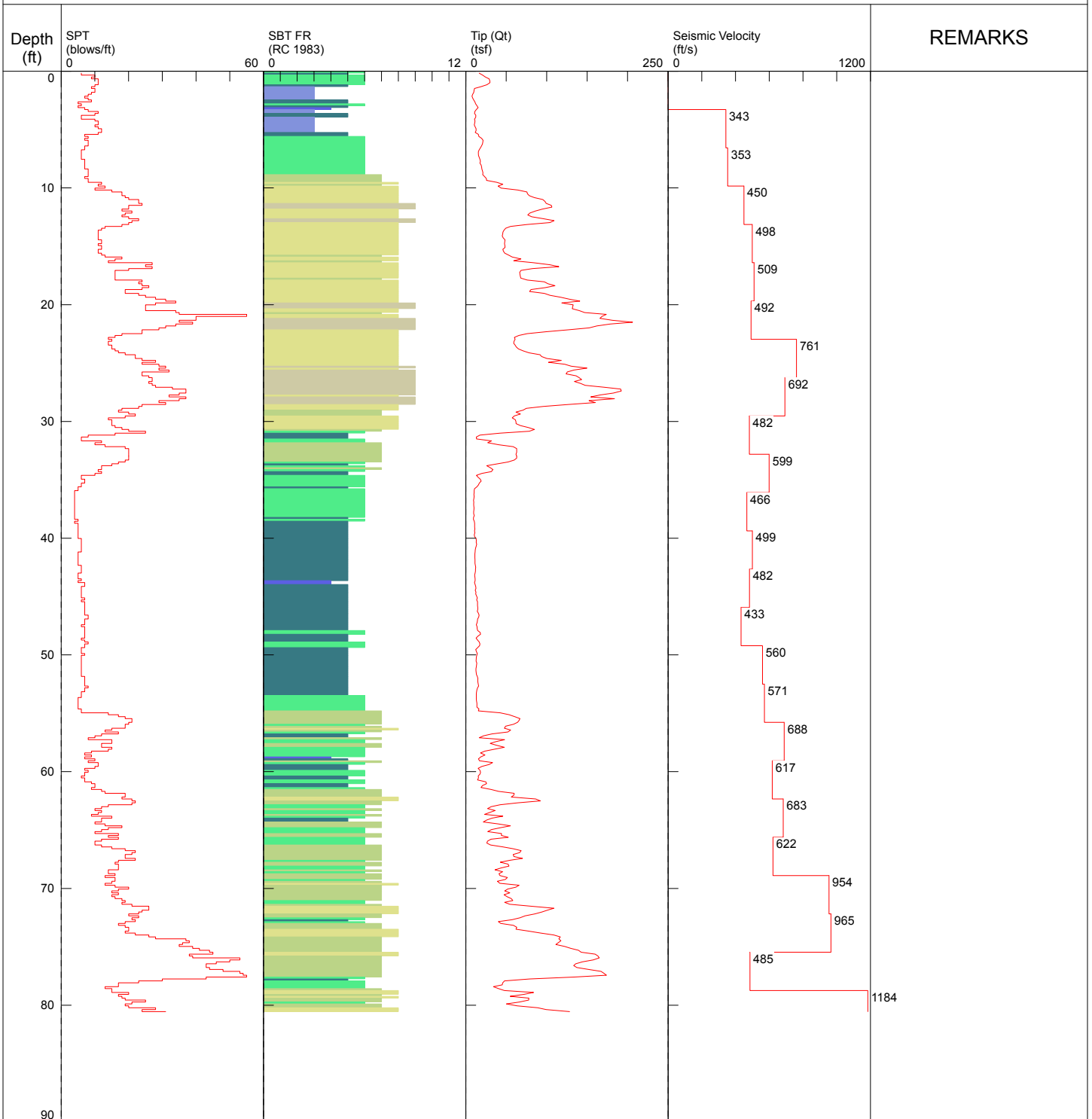


Hammer to Rod String Distance (ft): 1.97

* = Not Determined

NV5 / CPT-3 / 345 N Pekin Rd Woodland

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- | | | | |
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NV5 / CPT-3 / 345 N Pekin Rd Woodland

OPERATOR: OGE DMM
 CONE ID: DDG1654
 TEST DATE: 12/14/2022 9:41:14 AM
 TOTAL DEPTH: 80.545 ft

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
0.164	16.45	0.2625	1.596	0.276	6	6	sandy silt to clayey silt
0.328	20.69	0.4537	2.192	1.869	10	5	clayey silt to silty clay
0.492	24.05	0.5351	2.225	6.194	9	6	sandy silt to clayey silt
0.656	28.74	0.5995	2.086	5.664	11	6	sandy silt to clayey silt
0.820	29.60	0.6223	2.102	5.223	11	6	sandy silt to clayey silt
0.984	29.82	0.5902	1.979	-0.720	11	6	sandy silt to clayey silt
1.148	26.05	0.4279	1.643	-0.563	10	6	sandy silt to clayey silt
1.312	18.78	0.4682	2.494	-0.517	9	5	clayey silt to silty clay
1.476	10.81	0.4929	4.559	1.200	10	3	clay
1.640	10.14	0.4437	4.374	0.997	10	3	clay
1.804	9.78	0.4284	4.380	-0.244	9	3	clay
1.969	8.51	0.3893	4.573	0.211	8	3	clay
2.133	7.62	0.3679	4.829	0.124	7	3	clay
2.297	8.56	0.3702	4.325	0.332	8	3	clay
2.461	9.74	0.3352	3.442	0.094	9	3	clay
2.625	11.22	0.2798	2.493	-0.358	5	5	clayey silt to silty clay
2.789	12.03	0.2644	2.197	-1.583	6	5	clayey silt to silty clay
2.953	13.64	0.1850	1.356	-1.831	5	6	sandy silt to clayey silt
3.117	15.31	0.2856	1.866	-2.377	7	5	clayey silt to silty clay
3.281	12.92	0.4177	3.232	-2.562	8	4	silty clay to clay
3.445	11.10	0.4540	4.089	-0.748	11	3	clay
3.609	10.73	0.3839	3.577	-1.111	10	3	clay
3.773	12.43	0.2299	1.849	-1.251	6	5	clayey silt to silty clay
3.937	12.14	0.2742	2.258	-1.410	6	5	clayey silt to silty clay
4.101	10.80	0.4110	3.807	-1.045	10	3	clay
4.265	11.25	0.5371	4.774	-0.256	11	3	clay
4.429	11.05	0.5020	4.544	0.647	11	3	clay
4.593	10.41	0.3977	3.819	1.101	10	3	clay
4.757	11.59	0.4399	3.797	2.179	11	3	clay
4.921	12.64	0.5712	4.518	2.603	12	3	clay
5.085	12.71	0.6063	4.771	3.041	12	3	clay
5.249	11.63	0.4624	3.977	3.153	11	3	clay
5.413	15.47	0.3671	2.372	2.991	7	5	clayey silt to silty clay
5.577	16.13	0.3382	2.097	2.420	8	5	clayey silt to silty clay
5.741	19.48	0.2965	1.522	1.882	7	6	sandy silt to clayey silt
5.906	21.31	0.2761	1.296	1.223	8	6	sandy silt to clayey silt
6.070	21.00	0.2397	1.142	0.916	8	6	sandy silt to clayey silt
6.234	20.59	0.1963	0.953	0.807	8	6	sandy silt to clayey silt
6.398	19.34	0.2025	1.047	0.708	7	6	sandy silt to clayey silt
6.562	18.00	0.2088	1.159	0.644	7	6	sandy silt to clayey silt
6.726	16.53	0.2176	1.317	0.487	6	6	sandy silt to clayey silt
6.890	15.47	0.2052	1.327	0.469	6	6	sandy silt to clayey silt
7.054	15.56	0.1940	1.247	0.452	6	6	sandy silt to clayey silt
7.218	15.57	0.1931	1.240	0.386	6	6	sandy silt to clayey silt
7.382	16.44	0.1872	1.139	0.332	6	6	sandy silt to clayey silt
7.546	17.51	0.1893	1.081	0.249	7	6	sandy silt to clayey silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
7.710	17.94	0.2496	1.392	0.172	7	6	sandy silt to clayey silt
7.874	17.55	0.2443	1.392	0.122	7	6	sandy silt to clayey silt
8.038	18.96	0.1941	1.024	0.183	7	6	sandy silt to clayey silt
8.202	19.43	0.1749	0.900	-0.076	7	6	sandy silt to clayey silt
8.366	19.82	0.1759	0.888	-0.266	8	6	sandy silt to clayey silt
8.530	20.61	0.1842	0.894	-0.282	8	6	sandy silt to clayey silt
8.694	21.08	0.2148	1.019	-0.221	8	6	sandy silt to clayey silt
8.858	20.80	0.2619	1.259	-0.129	8	6	sandy silt to clayey silt
9.022	23.12	0.1267	0.548	-0.063	7	7	silty sand to sandy silt
9.186	25.29	0.0909	0.359	-0.317	8	7	silty sand to sandy silt
9.350	25.72	0.0873	0.339	-0.743	8	7	silty sand to sandy silt
9.514	38.38	0.1227	0.320	-0.855	12	7	silty sand to sandy silt
9.678	45.78	0.1964	0.429	-1.017	11	8	sand to silty sand
9.843	39.93	0.2098	0.525	-1.025	13	7	silty sand to sandy silt
10.007	43.63	0.1767	0.405	0.482	10	8	sand to silty sand
10.171	64.32	0.1996	0.310	0.464	15	8	sand to silty sand
10.335	75.59	0.2699	0.357	0.043	18	8	sand to silty sand
10.499	76.21	0.3121	0.409	-0.099	18	8	sand to silty sand
10.663	78.53	0.3288	0.419	-0.051	19	8	sand to silty sand
10.827	84.73	0.3843	0.454	0.048	20	8	sand to silty sand
10.991	95.17	1.0349	1.088	0.190	23	8	sand to silty sand
11.155	97.91	0.7320	0.748	0.317	23	8	sand to silty sand
11.319	99.30	0.6572	0.662	1.063	24	8	sand to silty sand
11.483	105.55	0.4300	0.407	1.405	20	9	sand
11.647	106.29	0.3616	0.340	1.550	20	9	sand
11.811	94.64	0.3174	0.335	1.760	18	9	sand
11.975	86.10	0.2899	0.337	1.910	21	8	sand to silty sand
12.139	78.98	0.2367	0.300	2.019	19	8	sand to silty sand
12.303	76.55	0.2640	0.345	2.090	18	8	sand to silty sand
12.467	81.57	0.4137	0.507	2.146	20	8	sand to silty sand
12.631	95.73	0.4164	0.435	2.204	23	8	sand to silty sand
12.795	109.08	0.3932	0.360	2.400	21	9	sand
12.959	103.97	0.3367	0.324	2.559	20	9	sand
13.123	75.83	0.2833	0.374	2.603	18	8	sand to silty sand
13.287	55.17	0.2110	0.382	2.458	13	8	sand to silty sand
13.451	49.25	0.1788	0.363	2.468	12	8	sand to silty sand
13.615	47.23	0.1594	0.338	2.491	11	8	sand to silty sand
13.780	45.89	0.1579	0.344	2.526	11	8	sand to silty sand
13.944	45.49	0.1425	0.313	2.549	11	8	sand to silty sand
14.108	45.00	0.1384	0.308	2.600	11	8	sand to silty sand
14.272	46.21	0.1277	0.276	2.630	11	8	sand to silty sand
14.436	48.35	0.1337	0.277	2.666	12	8	sand to silty sand
14.600	48.17	0.1231	0.256	2.765	12	8	sand to silty sand
14.764	47.75	0.1422	0.298	2.816	11	8	sand to silty sand
14.928	48.22	0.1290	0.267	2.869	12	8	sand to silty sand
15.092	48.34	0.1273	0.263	2.937	12	8	sand to silty sand
15.256	45.76	0.1370	0.299	3.001	11	8	sand to silty sand
15.420	46.52	0.1381	0.297	3.044	11	8	sand to silty sand
15.584	48.15	0.1761	0.366	3.092	12	8	sand to silty sand
15.748	52.81	0.3340	0.632	3.133	13	8	sand to silty sand
15.912	57.32	0.7874	1.374	3.224	18	7	silty sand to sandy silt
16.076	67.99	0.6629	0.975	3.262	16	8	sand to silty sand
16.240	59.24	0.3988	0.673	3.300	14	8	sand to silty sand
16.404	83.29	1.1598	1.393	3.450	27	7	silty sand to sandy silt
16.568	103.60	1.0947	1.057	3.521	25	8	sand to silty sand
16.732	114.84	0.7439	0.648	3.617	27	8	sand to silty sand
16.896	82.36	0.6176	0.750	3.539	20	8	sand to silty sand

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior UBC-1983	Type
17.060	68.24	0.4993	0.732	3.495	16	8	sand to silty sand	
17.224	66.52	0.3279	0.493	3.665	16	8	sand to silty sand	
17.388	66.92	0.2565	0.383	3.686	16	8	sand to silty sand	
17.552	67.34	0.1988	0.295	3.701	16	8	sand to silty sand	
17.717	67.91	0.5213	0.768	3.899	16	8	sand to silty sand	
17.881	75.86	1.0618	1.400	4.023	24	7	silty sand to sandy silt	
18.045	97.01	0.7695	0.793	4.426	23	8	sand to silty sand	
18.209	101.49	0.6708	0.661	4.338	24	8	sand to silty sand	
18.373	110.13	0.6789	0.616	4.528	26	8	sand to silty sand	
18.537	98.32	0.5040	0.513	4.348	24	8	sand to silty sand	
18.701	80.51	0.4681	0.581	4.467	19	8	sand to silty sand	
18.865	78.80	0.3503	0.445	4.444	19	8	sand to silty sand	
19.029	97.02	0.5518	0.569	4.629	23	8	sand to silty sand	
19.193	104.05	0.6976	0.670	4.444	25	8	sand to silty sand	
19.357	117.39	0.9195	0.783	4.574	28	8	sand to silty sand	
19.521	127.88	1.3110	1.025	5.020	31	8	sand to silty sand	
19.685	140.77	1.2873	0.914	5.616	34	8	sand to silty sand	
19.849	118.52	1.0964	0.925	5.641	28	8	sand to silty sand	
20.013	132.60	0.7273	0.548	6.080	25	9	sand	
20.177	132.10	0.6091	0.461	5.984	25	9	sand	
20.341	131.49	0.6549	0.498	5.971	25	9	sand	
20.505	140.17	1.7503	1.249	6.063	34	8	sand to silty sand	
20.669	146.73	2.2869	1.559	6.126	35	8	sand to silty sand	
20.833	173.61	3.4001	1.959	4.452	55	7	silty sand to sandy silt	
20.997	168.29	2.9487	1.752	5.266	40	8	sand to silty sand	
21.161	165.74	2.8526	1.721	7.278	40	8	sand to silty sand	
21.325	180.91	1.9728	1.091	6.529	35	9	sand	
21.490	206.10	1.8194	0.883	3.485	39	9	sand	
21.654	178.53	1.6839	0.943	5.497	34	9	sand	
21.818	161.79	1.0906	0.674	5.966	31	9	sand	
21.982	152.53	0.7096	0.465	5.086	29	9	sand	
22.146	126.72	0.6753	0.533	4.939	24	9	sand	
22.310	99.22	0.6171	0.622	5.659	24	8	sand to silty sand	
22.474	75.79	0.3719	0.491	5.601	18	8	sand to silty sand	
22.638	65.52	0.3381	0.516	5.565	16	8	sand to silty sand	
22.802	60.10	0.3063	0.510	5.555	14	8	sand to silty sand	
22.966	60.97	0.2806	0.460	5.601	15	8	sand to silty sand	
23.130	59.61	0.2684	0.450	5.763	14	8	sand to silty sand	
23.294	59.17	0.2719	0.460	5.796	14	8	sand to silty sand	
23.458	60.90	0.2507	0.412	5.816	15	8	sand to silty sand	
23.622	62.40	0.2640	0.423	5.857	15	8	sand to silty sand	
23.786	65.15	0.2731	0.419	5.885	16	8	sand to silty sand	
23.950	70.90	0.3350	0.472	5.918	17	8	sand to silty sand	
24.114	78.08	0.3308	0.424	6.068	19	8	sand to silty sand	
24.278	91.71	0.6832	0.745	5.991	22	8	sand to silty sand	
24.442	93.72	0.7231	0.772	6.189	22	8	sand to silty sand	
24.606	100.10	1.3353	1.334	6.271	24	8	sand to silty sand	
24.770	117.93	1.0406	0.882	6.243	28	8	sand to silty sand	
24.934	102.14	0.8931	0.874	7.407	24	8	sand to silty sand	
25.098	122.20	1.2361	1.012	6.547	29	8	sand to silty sand	
25.262	130.18	1.5705	1.206	6.126	31	8	sand to silty sand	
25.427	149.66	1.3503	0.902	6.428	29	9	sand	
25.591	133.49	1.2052	0.903	6.544	32	8	sand to silty sand	
25.755	125.44	0.6333	0.505	8.107	24	9	sand	
25.919	123.92	0.8666	0.699	8.158	24	9	sand	
26.083	136.28	0.7624	0.559	9.170	26	9	sand	
26.247	140.00	0.6563	0.469	8.193	27	9	sand	

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
26.411	143.06	0.6754	0.472	7.513	27	9	sand
26.575	134.12	1.0561	0.787	7.265	26	9	sand
26.739	141.73	1.1983	0.845	7.595	27	9	sand
26.903	147.39	0.8896	0.604	8.077	28	9	sand
27.067	171.26	0.9010	0.526	8.734	33	9	sand
27.231	191.36	1.5501	0.810	7.993	37	9	sand
27.395	192.03	1.4619	0.761	8.241	37	9	sand
27.559	182.32	1.1958	0.656	7.858	35	9	sand
27.723	165.86	1.6399	0.989	8.287	32	9	sand
27.887	154.50	1.8043	1.168	7.300	37	8	sand to silty sand
28.051	183.80	1.2550	0.683	6.927	35	9	sand
28.215	152.23	1.3775	0.905	6.669	29	9	sand
28.379	159.88	0.8649	0.541	8.181	31	9	sand
28.543	126.49	0.6871	0.543	7.795	24	9	sand
28.707	95.96	0.6045	0.630	7.389	23	8	sand to silty sand
28.871	74.70	0.5478	0.733	7.534	18	8	sand to silty sand
29.035	70.73	0.6243	0.883	9.314	17	8	sand to silty sand
29.199	61.93	0.7772	1.255	8.523	20	7	silty sand to sandy silt
29.364	67.45	0.8285	1.228	8.843	22	7	silty sand to sandy silt
29.528	59.76	0.6026	1.008	8.267	19	7	silty sand to sandy silt
29.692	57.35	0.2989	0.521	9.345	14	8	sand to silty sand
29.856	61.21	0.3294	0.538	9.246	15	8	sand to silty sand
30.020	61.93	0.2662	0.430	9.190	15	8	sand to silty sand
30.184	62.12	0.2415	0.389	9.213	15	8	sand to silty sand
30.348	67.46	0.3537	0.524	9.360	16	8	sand to silty sand
30.512	77.22	0.2753	0.357	9.086	18	8	sand to silty sand
30.676	84.75	0.3252	0.384	9.221	20	8	sand to silty sand
30.840	78.38	0.9892	1.262	9.071	25	7	silty sand to sandy silt
31.004	42.05	0.8427	2.004	8.891	16	6	sandy silt to clayey silt
31.168	17.49	0.3650	2.087	11.511	8	5	clayey silt to silty clay
31.332	12.92	0.2036	1.576	37.920	6	5	clayey silt to silty clay
31.496	13.26	0.1774	1.338	51.547	6	5	clayey silt to silty clay
31.660	31.66	0.4770	1.507	28.471	12	6	sandy silt to clayey silt
31.824	27.20	0.4592	1.688	19.220	10	6	sandy silt to clayey silt
31.988	40.43	0.4015	0.993	24.136	13	7	silty sand to sandy silt
32.152	58.54	0.6467	1.105	16.123	19	7	silty sand to sandy silt
32.316	62.83	0.8482	1.350	14.629	20	7	silty sand to sandy silt
32.480	62.96	0.9100	1.446	14.312	20	7	silty sand to sandy silt
32.644	62.72	0.6645	1.059	14.558	20	7	silty sand to sandy silt
32.808	61.88	0.7196	1.163	14.289	20	7	silty sand to sandy silt
32.972	62.76	0.8245	1.314	12.265	20	7	silty sand to sandy silt
33.136	62.72	0.9562	1.525	12.759	20	7	silty sand to sandy silt
33.301	59.78	1.0289	1.721	12.610	19	7	silty sand to sandy silt
33.465	52.17	1.0052	1.927	12.686	17	7	silty sand to sandy silt
33.629	39.45	1.0486	2.658	13.130	15	6	sandy silt to clayey silt
33.793	25.79	0.8440	3.273	13.523	12	5	clayey silt to silty clay
33.957	30.03	0.6034	2.009	15.927	12	6	sandy silt to clayey silt
34.121	33.55	0.4279	1.275	15.458	11	7	silty sand to sandy silt
34.285	31.52	0.5724	1.816	13.069	12	6	sandy silt to clayey silt
34.449	19.85	0.4485	2.260	13.683	10	5	clayey silt to silty clay
34.613	13.17	0.2445	1.856	18.162	6	5	clayey silt to silty clay
34.777	15.10	0.1964	1.300	25.288	6	6	sandy silt to clayey silt
34.941	17.83	0.2068	1.160	24.694	7	6	sandy silt to clayey silt
35.105	18.96	0.2254	1.189	25.805	7	6	sandy silt to clayey silt
35.269	16.66	0.1912	1.147	27.269	6	6	sandy silt to clayey silt
35.433	15.67	0.1321	0.843	32.147	6	6	sandy silt to clayey silt
35.597	13.62	0.0982	0.721	36.771	5	6	sandy silt to clayey silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
35.761	10.69	0.1062	0.993	46.471	5	5	clayey silt to silty clay
35.925	10.29	0.0837	0.813	53.695	4	6	sandy silt to clayey silt
36.089	10.35	0.0604	0.584	56.643	4	6	sandy silt to clayey silt
36.253	10.00	0.0524	0.525	59.233	4	6	sandy silt to clayey silt
36.417	10.33	0.0463	0.448	60.082	4	6	sandy silt to clayey silt
36.581	10.01	0.0457	0.457	58.274	4	6	sandy silt to clayey silt
36.745	9.55	0.0516	0.540	59.679	4	6	sandy silt to clayey silt
36.909	9.75	0.0487	0.500	60.070	4	6	sandy silt to clayey silt
37.073	9.70	0.0496	0.512	61.231	4	6	sandy silt to clayey silt
37.238	9.78	0.0479	0.489	63.050	4	6	sandy silt to clayey silt
37.402	10.19	0.0453	0.445	64.915	4	6	sandy silt to clayey silt
37.566	10.01	0.0425	0.425	64.250	4	6	sandy silt to clayey silt
37.730	9.62	0.0359	0.373	63.895	4	6	sandy silt to clayey silt
37.894	9.68	0.0388	0.401	64.795	4	6	sandy silt to clayey silt
38.058	10.37	0.0407	0.393	60.014	4	6	sandy silt to clayey silt
38.222	9.54	0.0491	0.515	62.320	4	6	sandy silt to clayey silt
38.386	9.45	0.0675	0.714	60.435	5	5	clayey silt to silty clay
38.550	10.45	0.0824	0.788	58.915	4	6	sandy silt to clayey silt
38.714	10.94	0.1227	1.121	52.665	5	5	clayey silt to silty clay
38.878	10.92	0.1247	1.142	55.605	5	5	clayey silt to silty clay
39.042	10.94	0.1356	1.239	53.325	5	5	clayey silt to silty clay
39.206	11.15	0.1628	1.461	55.808	5	5	clayey silt to silty clay
39.370	10.78	0.1476	1.369	54.750	5	5	clayey silt to silty clay
39.534	11.18	0.1337	1.196	44.388	5	5	clayey silt to silty clay
39.698	10.45	0.1611	1.541	48.226	5	5	clayey silt to silty clay
39.862	10.95	0.1909	1.743	51.788	5	5	clayey silt to silty clay
40.026	12.65	0.1899	1.500	49.116	6	5	clayey silt to silty clay
40.190	12.88	0.2331	1.810	46.483	6	5	clayey silt to silty clay
40.354	12.82	0.2651	2.068	49.243	6	5	clayey silt to silty clay
40.518	13.36	0.3203	2.397	47.777	6	5	clayey silt to silty clay
40.682	12.83	0.2282	1.780	47.392	6	5	clayey silt to silty clay
40.846	12.10	0.2121	1.753	37.562	6	5	clayey silt to silty clay
41.011	11.68	0.1987	1.700	46.676	6	5	clayey silt to silty clay
41.175	11.47	0.1707	1.488	50.915	5	5	clayey silt to silty clay
41.339	11.14	0.1631	1.464	54.372	5	5	clayey silt to silty clay
41.503	11.20	0.1611	1.438	57.957	5	5	clayey silt to silty clay
41.667	11.18	0.1643	1.469	60.968	5	5	clayey silt to silty clay
41.831	11.31	0.1720	1.521	63.791	5	5	clayey silt to silty clay
41.995	11.28	0.1809	1.604	66.436	5	5	clayey silt to silty clay
42.159	11.27	0.1962	1.741	69.590	5	5	clayey silt to silty clay
42.323	11.84	0.2202	1.860	72.727	6	5	clayey silt to silty clay
42.487	12.31	0.2436	1.978	75.315	6	5	clayey silt to silty clay
42.651	11.86	0.2431	2.049	75.672	6	5	clayey silt to silty clay
42.815	11.92	0.2310	1.938	70.921	6	5	clayey silt to silty clay
42.979	11.41	0.2046	1.794	73.136	5	5	clayey silt to silty clay
43.143	10.89	0.2017	1.852	74.665	5	5	clayey silt to silty clay
43.307	11.23	0.2155	1.920	75.429	5	5	clayey silt to silty clay
43.471	11.53	0.2269	1.968	73.468	6	5	clayey silt to silty clay
43.635	11.47	0.2156	1.880	69.270	5	5	clayey silt to silty clay
43.799	10.77	0.3024	2.807	69.019	7	4	silty clay to clay
43.963	11.36	0.3040	2.676	69.473	7	4	silty clay to clay
44.127	12.13	0.2851	2.350	56.275	6	5	clayey silt to silty clay
44.291	12.49	0.2748	2.200	57.277	6	5	clayey silt to silty clay
44.455	11.67	0.2683	2.299	57.548	6	5	clayey silt to silty clay
44.619	12.51	0.2588	2.069	57.799	6	5	clayey silt to silty clay
44.783	12.22	0.2971	2.432	57.018	6	5	clayey silt to silty clay
44.948	13.30	0.2996	2.252	58.426	6	5	clayey silt to silty clay

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
45.112	14.17	0.3318	2.342	54.547	7	5	clayey silt to silty clay
45.276	13.44	0.3259	2.425	53.292	6	5	clayey silt to silty clay
45.440	14.37	0.3016	2.099	52.470	7	5	clayey silt to silty clay
45.604	14.54	0.3221	2.215	49.423	7	5	clayey silt to silty clay
45.768	14.53	0.3651	2.513	49.363	7	5	clayey silt to silty clay
45.932	14.77	0.3428	2.322	48.807	7	5	clayey silt to silty clay
46.096	14.79	0.3273	2.213	35.051	7	5	clayey silt to silty clay
46.260	14.18	0.3453	2.436	39.802	7	5	clayey silt to silty clay
46.424	15.46	0.3784	2.447	43.234	7	5	clayey silt to silty clay
46.588	16.39	0.3580	2.184	45.958	8	5	clayey silt to silty clay
46.752	16.00	0.3308	2.067	45.205	8	5	clayey silt to silty clay
46.916	14.70	0.2757	1.876	44.492	7	5	clayey silt to silty clay
47.080	14.30	0.2494	1.744	46.296	7	5	clayey silt to silty clay
47.244	13.89	0.2599	1.871	48.333	7	5	clayey silt to silty clay
47.408	13.04	0.2525	1.937	49.180	6	5	clayey silt to silty clay
47.572	13.87	0.2548	1.837	50.156	7	5	clayey silt to silty clay
47.736	14.01	0.2965	2.116	50.197	7	5	clayey silt to silty clay
47.900	14.70	0.3072	2.090	50.707	7	5	clayey silt to silty clay
48.064	17.72	0.3102	1.751	48.731	7	6	sandy silt to clayey silt
48.228	18.29	0.2622	1.434	43.665	7	6	sandy silt to clayey silt
48.392	14.85	0.2804	1.889	42.991	7	5	clayey silt to silty clay
48.556	12.64	0.2935	2.323	48.954	6	5	clayey silt to silty clay
48.720	14.51	0.3439	2.370	51.333	7	5	clayey silt to silty clay
48.885	16.56	0.3142	1.897	52.381	8	5	clayey silt to silty clay
49.049	17.45	0.3036	1.740	44.566	7	6	sandy silt to clayey silt
49.213	16.98	0.2458	1.448	45.976	7	6	sandy silt to clayey silt
49.377	14.60	0.2149	1.472	38.584	6	6	sandy silt to clayey silt
49.541	12.34	0.2391	1.938	45.677	6	5	clayey silt to silty clay
49.705	13.09	0.2288	1.747	52.153	6	5	clayey silt to silty clay
49.869	14.14	0.2194	1.552	54.814	7	5	clayey silt to silty clay
50.033	13.47	0.2113	1.569	57.510	6	5	clayey silt to silty clay
50.197	12.87	0.1939	1.506	62.302	6	5	clayey silt to silty clay
50.361	12.79	0.1876	1.467	66.289	6	5	clayey silt to silty clay
50.525	12.68	0.2246	1.771	71.276	6	5	clayey silt to silty clay
50.689	13.53	0.2408	1.780	83.970	6	5	clayey silt to silty clay
50.853	13.32	0.2493	1.872	76.771	6	5	clayey silt to silty clay
51.017	12.96	0.2343	1.808	75.604	6	5	clayey silt to silty clay
51.181	12.56	0.2097	1.670	70.873	6	5	clayey silt to silty clay
51.345	12.47	0.1899	1.522	74.191	6	5	clayey silt to silty clay
51.509	12.72	0.1873	1.473	80.773	6	5	clayey silt to silty clay
51.673	13.10	0.2082	1.589	81.098	6	5	clayey silt to silty clay
51.837	14.12	0.2337	1.656	81.200	7	5	clayey silt to silty clay
52.001	14.95	0.2568	1.718	83.959	7	5	clayey silt to silty clay
52.165	14.73	0.2486	1.687	81.669	7	5	clayey silt to silty clay
52.329	14.86	0.2887	1.943	89.423	7	5	clayey silt to silty clay
52.493	15.43	0.2979	1.931	93.363	7	5	clayey silt to silty clay
52.657	15.77	0.2795	1.773	95.077	8	5	clayey silt to silty clay
52.822	14.43	0.2499	1.732	86.296	7	5	clayey silt to silty clay
52.986	13.71	0.2348	1.713	86.806	7	5	clayey silt to silty clay
53.150	13.24	0.2048	1.547	86.516	6	5	clayey silt to silty clay
53.314	13.08	0.1873	1.433	86.696	6	5	clayey silt to silty clay
53.478	13.01	0.1780	1.368	86.785	6	5	clayey silt to silty clay
53.642	13.08	0.1452	1.110	82.108	5	6	sandy silt to clayey silt
53.806	13.07	0.1399	1.071	84.571	5	6	sandy silt to clayey silt
53.970	13.29	0.1516	1.141	84.284	5	6	sandy silt to clayey silt
54.134	13.63	0.1633	1.198	91.374	5	6	sandy silt to clayey silt
54.298	13.82	0.1899	1.374	79.855	5	6	sandy silt to clayey silt

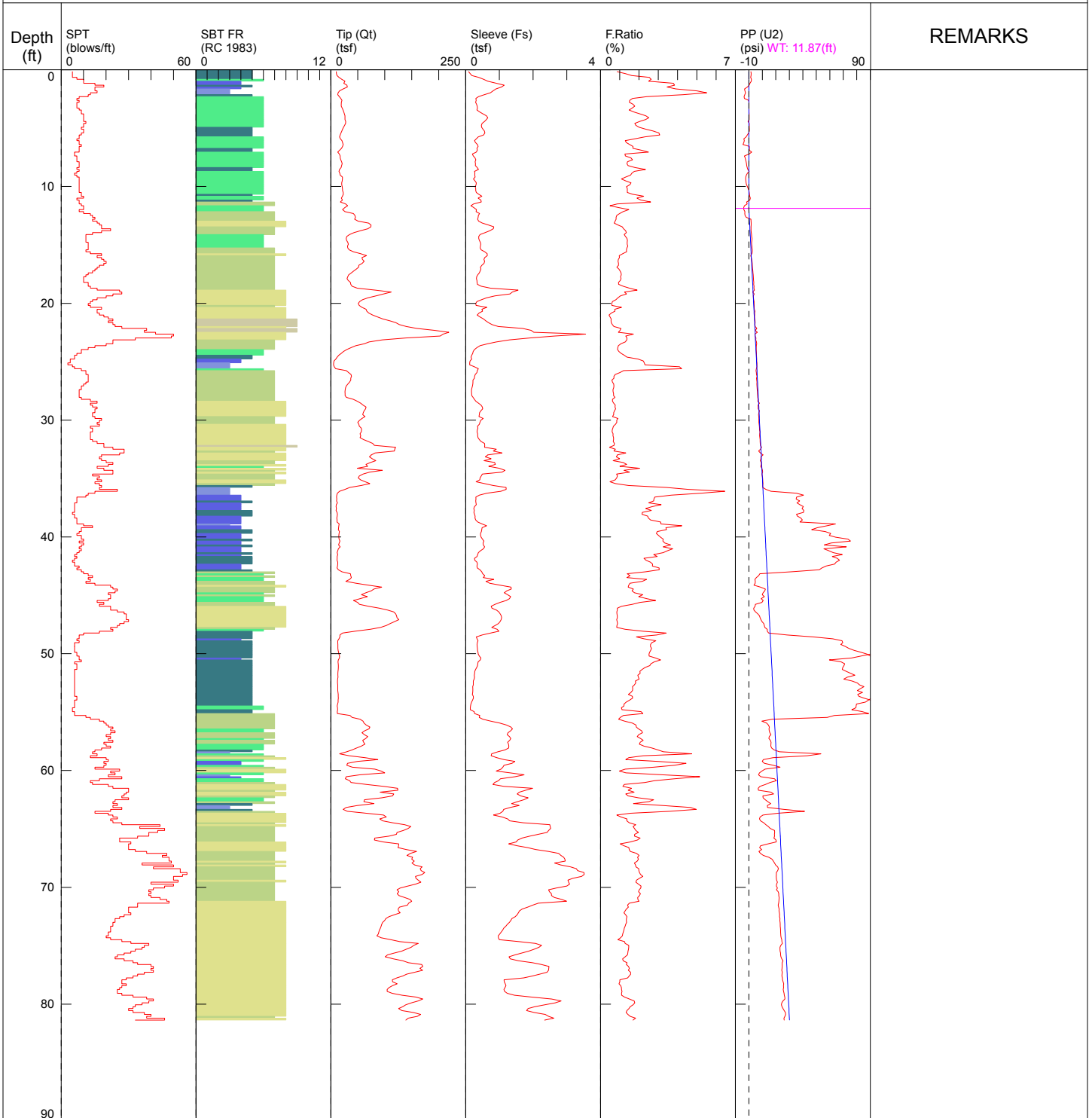
Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
54.462	13.73	0.1370	0.998	81.342	5	6	sandy silt to clayey silt
54.626	16.23	0.1758	1.083	64.395	6	6	sandy silt to clayey silt
54.790	15.46	0.2117	1.370	72.438	6	6	sandy silt to clayey silt
54.954	42.44	0.3822	0.901	36.296	14	7	silty sand to sandy silt
55.118	53.64	0.5157	0.961	27.324	17	7	silty sand to sandy silt
55.282	60.46	0.6617	1.094	25.665	19	7	silty sand to sandy silt
55.446	66.88	0.7123	1.065	23.905	21	7	silty sand to sandy silt
55.610	65.93	0.7492	1.136	23.479	21	7	silty sand to sandy silt
55.774	63.88	0.7137	1.117	23.522	20	7	silty sand to sandy silt
55.938	58.89	0.7354	1.249	20.448	19	7	silty sand to sandy silt
56.102	49.08	0.9901	2.017	21.310	19	6	sandy silt to clayey silt
56.266	47.69	0.6540	1.371	22.670	15	7	silty sand to sandy silt
56.430	55.32	0.4200	0.759	20.722	13	8	sand to silty sand
56.594	51.98	0.5005	0.963	19.730	17	7	silty sand to sandy silt
56.759	32.28	0.7235	2.241	23.005	12	6	sandy silt to clayey silt
56.923	21.82	0.6761	3.099	30.477	10	5	clayey silt to silty clay
57.087	16.52	0.4372	2.646	41.920	8	5	clayey silt to silty clay
57.251	48.02	0.5320	1.108	29.826	15	7	silty sand to sandy silt
57.415	37.90	0.7259	1.915	28.253	15	6	sandy silt to clayey silt
57.579	30.18	0.6619	2.193	33.067	12	6	sandy silt to clayey silt
57.743	38.25	0.4748	1.242	39.584	12	7	silty sand to sandy silt
57.907	47.57	0.6232	1.310	20.668	15	7	silty sand to sandy silt
58.071	35.42	0.5484	1.548	21.686	14	6	sandy silt to clayey silt
58.235	23.58	0.3825	1.622	25.988	9	6	sandy silt to clayey silt
58.399	18.06	0.1999	1.107	41.230	7	6	sandy silt to clayey silt
58.563	23.65	0.2437	1.030	47.660	9	6	sandy silt to clayey silt
58.727	18.43	0.2435	1.321	53.685	7	6	sandy silt to clayey silt
58.891	15.67	0.5927	3.783	63.063	10	4	silty clay to clay
59.055	16.83	0.3920	2.329	74.599	8	5	clayey silt to silty clay
59.219	33.14	0.3228	0.974	21.916	11	7	silty sand to sandy silt
59.383	28.73	0.4545	1.582	21.660	11	6	sandy silt to clayey silt
59.547	19.87	0.4668	2.349	26.457	10	5	clayey silt to silty clay
59.711	15.10	0.3551	2.351	39.079	7	5	clayey silt to silty clay
59.875	17.45	0.3390	1.943	48.120	8	5	clayey silt to silty clay
60.039	18.28	0.2599	1.422	54.317	7	6	sandy silt to clayey silt
60.203	17.58	0.2941	1.673	55.892	7	6	sandy silt to clayey silt
60.367	15.33	0.2244	1.464	61.883	6	6	sandy silt to clayey silt
60.532	15.64	0.2788	1.783	61.089	7	5	clayey silt to silty clay
60.696	14.46	0.2398	1.659	68.222	7	5	clayey silt to silty clay
60.860	24.70	0.3331	1.349	69.803	9	6	sandy silt to clayey silt
61.024	25.68	0.5229	2.037	44.201	10	6	sandy silt to clayey silt
61.188	20.55	0.6437	3.132	58.609	10	5	clayey silt to silty clay
61.352	18.76	0.6353	3.386	67.025	9	5	clayey silt to silty clay
61.516	31.16	0.6424	2.062	64.674	12	6	sandy silt to clayey silt
61.680	40.53	0.5324	1.314	42.838	13	7	silty sand to sandy silt
61.844	59.62	0.6766	1.135	30.627	19	7	silty sand to sandy silt
62.008	59.42	1.0849	1.826	26.429	19	7	silty sand to sandy silt
62.172	56.16	0.9527	1.696	28.116	18	7	silty sand to sandy silt
62.336	86.26	0.9326	1.081	21.480	21	8	sand to silty sand
62.500	92.18	0.8803	0.955	13.693	22	8	sand to silty sand
62.664	64.31	0.8801	1.369	12.922	21	7	silty sand to sandy silt
62.828	42.47	0.7194	1.694	13.748	14	7	silty sand to sandy silt
62.992	31.25	0.7378	2.361	16.318	12	6	sandy silt to clayey silt
63.156	26.91	0.4999	1.857	20.146	10	6	sandy silt to clayey silt
63.320	36.28	0.4019	1.108	23.258	12	7	silty sand to sandy silt
63.484	29.48	0.6766	2.295	22.459	11	6	sandy silt to clayey silt
63.648	23.10	0.4215	1.825	27.111	9	6	sandy silt to clayey silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
63.812	45.68	0.6486	1.420	26.325	15	7	silty sand to sandy silt
63.976	32.50	0.6700	2.062	23.672	12	6	sandy silt to clayey silt
64.140	25.86	0.6644	2.569	26.985	12	5	clayey silt to silty clay
64.304	21.56	0.5874	2.724	31.132	10	5	clayey silt to silty clay
64.469	40.00	0.4249	1.062	35.698	13	7	silty sand to sandy silt
64.633	54.95	0.5475	0.996	19.712	18	7	silty sand to sandy silt
64.797	43.13	0.6731	1.560	18.373	14	7	silty sand to sandy silt
64.961	31.76	0.7924	2.495	21.401	12	6	sandy silt to clayey silt
65.125	27.03	0.6426	2.377	29.567	10	6	sandy silt to clayey silt
65.289	44.10	0.9555	2.167	32.245	17	6	sandy silt to clayey silt
65.453	43.92	0.6254	1.424	23.223	14	7	silty sand to sandy silt
65.617	52.46	0.9206	1.755	19.600	17	7	silty sand to sandy silt
65.781	31.09	0.7781	2.503	19.276	12	6	sandy silt to clayey silt
65.945	26.83	0.5809	2.165	22.759	10	6	sandy silt to clayey silt
66.109	25.93	0.5670	2.187	26.191	10	6	sandy silt to clayey silt
66.273	30.54	0.4813	1.576	30.145	12	6	sandy silt to clayey silt
66.437	45.94	0.6508	1.417	31.094	15	7	silty sand to sandy silt
66.601	58.50	0.8213	1.404	24.927	19	7	silty sand to sandy silt
66.765	68.42	0.8324	1.217	23.256	22	7	silty sand to sandy silt
66.929	66.53	0.9395	1.412	20.935	21	7	silty sand to sandy silt
67.093	58.54	0.9788	1.672	22.348	19	7	silty sand to sandy silt
67.257	59.40	0.6739	1.134	19.408	19	7	silty sand to sandy silt
67.421	69.95	0.7914	1.131	14.317	22	7	silty sand to sandy silt
67.585	54.42	1.0535	1.936	12.932	17	7	silty sand to sandy silt
67.749	42.59	0.9432	2.215	14.994	16	6	sandy silt to clayey silt
67.913	52.27	0.6223	1.190	14.832	17	7	silty sand to sandy silt
68.077	53.33	0.6791	1.273	13.774	17	7	silty sand to sandy silt
68.241	43.26	0.9167	2.119	14.116	17	6	sandy silt to clayey silt
68.406	35.97	0.6094	1.694	16.950	14	6	sandy silt to clayey silt
68.570	45.40	0.6916	1.523	18.226	14	7	silty sand to sandy silt
68.734	40.93	0.7246	1.770	18.360	16	6	sandy silt to clayey silt
68.898	42.20	0.7119	1.687	20.879	13	7	silty sand to sandy silt
69.062	51.32	0.5499	1.072	22.000	16	7	silty sand to sandy silt
69.226	48.88	0.6427	1.315	18.933	16	7	silty sand to sandy silt
69.390	39.07	0.9741	2.493	19.983	15	6	sandy silt to clayey silt
69.554	42.11	0.6614	1.571	23.423	13	7	silty sand to sandy silt
69.718	65.82	0.6375	0.969	20.600	16	8	sand to silty sand
69.882	61.85	0.7440	1.203	16.653	20	7	silty sand to sandy silt
70.046	51.74	0.9672	1.869	17.145	17	7	silty sand to sandy silt
70.210	48.17	0.8546	1.774	18.639	15	7	silty sand to sandy silt
70.374	54.38	0.7334	1.349	20.420	17	7	silty sand to sandy silt
70.538	47.10	0.7584	1.610	18.609	15	7	silty sand to sandy silt
70.702	51.00	0.8040	1.576	19.167	16	7	silty sand to sandy silt
70.866	56.03	0.7661	1.367	19.803	18	7	silty sand to sandy silt
71.030	58.02	1.0152	1.750	20.268	19	7	silty sand to sandy silt
71.194	47.91	1.2487	2.606	21.094	18	6	sandy silt to clayey silt
71.358	54.26	1.1521	2.123	22.624	21	6	sandy silt to clayey silt
71.522	80.25	1.1731	1.462	15.182	26	7	silty sand to sandy silt
71.686	108.78	1.0250	0.942	11.476	26	8	sand to silty sand
71.850	100.75	0.8023	0.796	9.992	24	8	sand to silty sand
72.014	94.08	0.6591	0.701	9.540	23	8	sand to silty sand
72.178	85.31	0.8743	1.025	10.334	20	8	sand to silty sand
72.343	73.31	1.0704	1.460	20.478	23	7	silty sand to sandy silt
72.507	66.95	1.2639	1.888	21.323	21	7	silty sand to sandy silt
72.671	57.17	1.4661	2.565	23.190	22	6	sandy silt to clayey silt
72.835	40.25	1.4044	3.489	22.779	19	5	clayey silt to silty clay
72.999	43.18	0.7970	1.846	25.376	17	6	sandy silt to clayey silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
73.163	58.86	0.7237	1.229	16.067	19	7	silty sand to sandy silt
73.327	62.98	0.8176	1.298	14.740	20	7	silty sand to sandy silt
73.491	61.91	1.0924	1.764	15.861	20	7	silty sand to sandy silt
73.655	77.80	0.8803	1.131	17.561	19	8	sand to silty sand
73.819	92.47	0.8291	0.897	13.672	22	8	sand to silty sand
73.983	108.67	0.8676	0.798	11.869	26	8	sand to silty sand
74.147	116.75	1.5066	1.290	12.729	28	8	sand to silty sand
74.311	114.90	1.9390	1.688	14.963	37	7	silty sand to sandy silt
74.475	117.49	2.0851	1.775	21.701	38	7	silty sand to sandy silt
74.639	114.24	2.1800	1.908	23.616	36	7	silty sand to sandy silt
74.803	111.11	2.0386	1.835	25.057	35	7	silty sand to sandy silt
74.967	122.06	2.1952	1.798	27.401	39	7	silty sand to sandy silt
75.131	129.63	2.5069	1.934	28.435	41	7	silty sand to sandy silt
75.295	139.15	2.5219	1.812	29.818	44	7	silty sand to sandy silt
75.459	142.39	2.5516	1.792	30.533	45	7	silty sand to sandy silt
75.623	159.85	2.6988	1.688	29.668	38	8	sand to silty sand
75.787	163.13	2.9371	1.801	29.661	39	8	sand to silty sand
75.951	164.80	3.1931	1.938	30.346	53	7	silty sand to sandy silt
76.115	157.49	3.2461	2.061	31.327	50	7	silty sand to sandy silt
76.280	143.96	3.1517	2.189	30.931	46	7	silty sand to sandy silt
76.444	135.88	2.8863	2.124	30.488	43	7	silty sand to sandy silt
76.608	133.24	2.7478	2.062	30.554	43	7	silty sand to sandy silt
76.772	137.06	2.7806	2.029	31.741	44	7	silty sand to sandy silt
76.936	151.79	3.0328	1.998	30.609	48	7	silty sand to sandy silt
77.100	166.98	3.3484	2.005	31.807	53	7	silty sand to sandy silt
77.264	170.55	3.6305	2.129	32.628	54	7	silty sand to sandy silt
77.428	173.71	3.8909	2.240	32.588	55	7	silty sand to sandy silt
77.592	134.11	3.0012	2.238	28.167	43	7	silty sand to sandy silt
77.756	78.94	2.1767	2.757	20.782	30	6	sandy silt to clayey silt
77.920	47.72	1.6152	3.385	20.932	23	5	clayey silt to silty clay
78.084	45.57	1.1285	2.476	37.238	17	6	sandy silt to clayey silt
78.248	44.99	0.9933	2.208	45.532	17	6	sandy silt to clayey silt
78.412	34.15	0.8826	2.584	55.527	13	6	sandy silt to clayey silt
78.576	40.32	0.9145	2.268	59.669	15	6	sandy silt to clayey silt
78.740	47.60	0.8555	1.797	52.450	15	7	silty sand to sandy silt
78.904	83.57	0.4781	0.572	22.776	20	8	sand to silty sand
79.068	71.60	0.7443	1.039	16.777	17	8	sand to silty sand
79.232	54.90	0.9612	1.751	19.225	18	7	silty sand to sandy silt
79.396	77.92	0.7721	0.991	24.248	19	8	sand to silty sand
79.560	77.83	1.0006	1.286	18.713	25	7	silty sand to sandy silt
79.724	66.63	0.8349	1.253	18.413	21	7	silty sand to sandy silt
79.888	50.23	1.0711	2.132	18.375	19	6	sandy silt to clayey silt
80.052	63.23	1.0199	1.613	24.625	20	7	silty sand to sandy silt
80.217	88.82	1.2770	1.438	19.994	28	7	silty sand to sandy silt
80.381	99.11	1.2904	1.302	18.284	24	8	sand to silty sand
80.545	128.11	1.2704	0.992	16.328	31	8	sand to silty sand

NV5 / CPT-4 / 345 Pekin Road Woodland

OPERATOR: OGE BAK
 CONE ID: DDG1296
 TEST DATE: 12/9/2022 9:56:27 AM
 TOTAL DEPTH: 81.365 ft

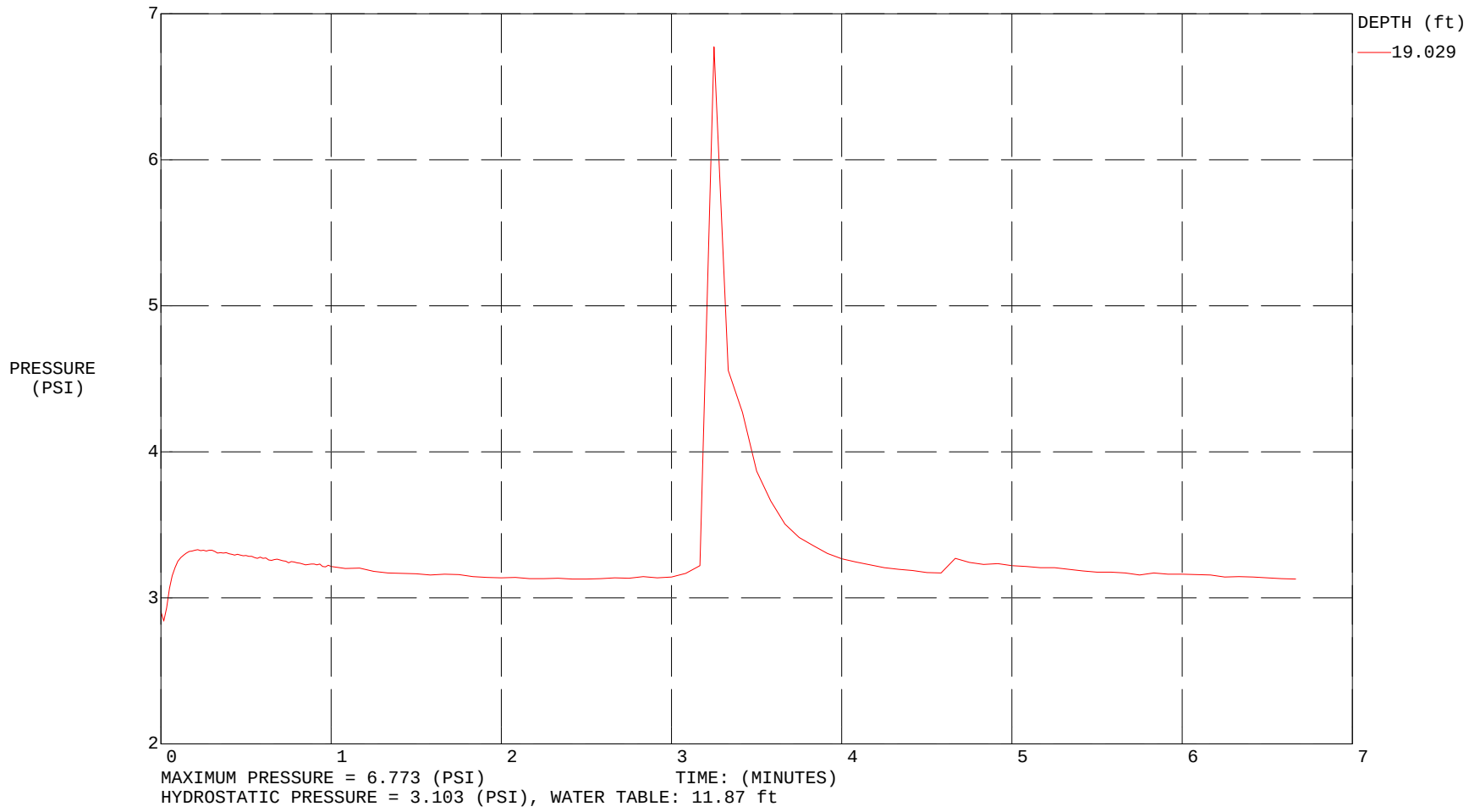


- | | | | |
|---|---|--|--|
| <ul style="list-style-type: none"> ■ 1 sensitive fine grained ■ 2 organic material ■ 3 clay | <ul style="list-style-type: none"> ■ 4 silty clay to clay ■ 5 clayey silt to silty clay ■ 6 sandy silt to clayey silt | <ul style="list-style-type: none"> ■ 7 silty sand to sandy silt ■ 8 sand to silty sand ■ 9 sand | <ul style="list-style-type: none"> ■ 10 gravelly sand to sand ■ 11 very stiff fine grained (*) ■ 12 sand to clayey sand (*) |
|---|---|--|--|

*SBT/SPT CORRELATION: UBC-1983

COMMENT: NV5 / CPT-4 / 345 Pekin Road Woodland

CONE ID: DDG1296
TEST DATE: 12/9/2022 9:56:27 AM



NV5 / CPT-4 / 345 Pekin Road Woodland

OPERATOR: OGE BAK
 CONE ID: DDG1296
 TEST DATE: 12/9/2022 9:56:27 AM
 TOTAL DEPTH: 81.365 ft

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
0.164	10.01	0.0862	0.861	1.449	5	5	clayey silt to silty clay
0.328	10.26	0.1323	1.290	1.686	5	5	clayey silt to silty clay
0.492	11.38	0.1831	1.609	1.571	5	5	clayey silt to silty clay
0.656	15.07	0.3810	2.528	1.335	7	5	clayey silt to silty clay
0.820	20.19	0.5301	2.625	1.869	10	5	clayey silt to silty clay
0.984	26.05	0.6508	2.498	1.730	10	6	sandy silt to clayey silt
1.148	24.08	0.9090	3.774	0.763	15	4	silty clay to clay
1.312	29.72	1.1413	3.840	0.131	19	4	silty clay to clay
1.476	30.75	1.0607	3.450	-1.165	15	5	clayey silt to silty clay
1.640	22.93	0.8969	3.912	-3.251	15	4	silty clay to clay
1.804	16.24	0.8106	4.992	-3.023	16	3	clay
1.969	13.31	0.7334	5.509	-2.572	13	3	clay
2.133	12.92	0.5515	4.268	-3.048	12	3	clay
2.297	15.73	0.3768	2.396	-3.630	8	5	clayey silt to silty clay
2.461	18.18	0.3014	1.658	-3.405	7	6	sandy silt to clayey silt
2.625	20.61	0.3111	1.510	-0.137	8	6	sandy silt to clayey silt
2.789	19.44	0.2913	1.498	0.020	7	6	sandy silt to clayey silt
2.953	19.12	0.3206	1.677	0.031	7	6	sandy silt to clayey silt
3.117	19.18	0.3395	1.771	0.070	7	6	sandy silt to clayey silt
3.281	21.05	0.3447	1.637	0.064	8	6	sandy silt to clayey silt
3.445	22.52	0.3334	1.481	0.067	9	6	sandy silt to clayey silt
3.609	23.96	0.4128	1.723	0.078	9	6	sandy silt to clayey silt
3.773	25.10	0.5130	2.044	0.111	10	6	sandy silt to clayey silt
3.937	26.13	0.6142	2.350	0.128	10	6	sandy silt to clayey silt
4.101	26.15	0.6537	2.500	0.150	10	6	sandy silt to clayey silt
4.265	26.31	0.6147	2.336	0.100	10	6	sandy silt to clayey silt
4.429	27.48	0.5573	2.028	-0.619	11	6	sandy silt to clayey silt
4.593	27.37	0.4860	1.776	0.212	10	6	sandy silt to clayey silt
4.757	25.46	0.4654	1.828	0.248	10	6	sandy silt to clayey silt
4.921	23.43	0.4696	2.004	0.276	9	6	sandy silt to clayey silt
5.085	21.86	0.5130	2.346	0.329	10	5	clayey silt to silty clay
5.249	20.27	0.5527	2.727	0.343	10	5	clayey silt to silty clay
5.413	18.79	0.5683	3.024	-0.223	9	5	clayey silt to silty clay
5.577	17.12	0.5260	3.072	-1.206	8	5	clayey silt to silty clay
5.741	16.22	0.3714	2.289	-2.134	8	5	clayey silt to silty clay
5.906	17.68	0.3133	1.772	-3.814	7	6	sandy silt to clayey silt
6.070	20.41	0.2619	1.283	-3.460	8	6	sandy silt to clayey silt
6.234	21.63	0.2889	1.335	-3.789	8	6	sandy silt to clayey silt
6.398	22.86	0.3442	1.506	-4.435	9	6	sandy silt to clayey silt
6.562	21.79	0.3662	1.681	0.368	8	6	sandy silt to clayey silt
6.726	19.71	0.3317	1.683	0.348	8	6	sandy silt to clayey silt
6.890	16.02	0.3413	2.130	0.340	8	5	clayey silt to silty clay
7.054	12.59	0.3123	2.481	1.986	6	5	clayey silt to silty clay
7.218	15.55	0.1959	1.260	0.153	6	6	sandy silt to clayey silt
7.382	17.24	0.2220	1.288	-3.380	7	6	sandy silt to clayey silt
7.546	17.39	0.2739	1.575	-2.769	7	6	sandy silt to clayey silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
7.710	18.25	0.3021	1.655	-2.368	7	6	sandy silt to clayey silt
7.874	19.86	0.2770	1.395	-2.090	8	6	sandy silt to clayey silt
8.038	21.05	0.2881	1.369	-1.828	8	6	sandy silt to clayey silt
8.202	19.99	0.2844	1.423	-1.663	8	6	sandy silt to clayey silt
8.366	19.06	0.3400	1.784	-1.301	7	6	sandy silt to clayey silt
8.530	16.26	0.3791	2.332	-0.858	8	5	clayey silt to silty clay
8.694	14.93	0.2614	1.751	0.212	7	5	clayey silt to silty clay
8.858	16.56	0.2696	1.628	-1.050	6	6	sandy silt to clayey silt
9.022	17.14	0.2673	1.560	-1.903	7	6	sandy silt to clayey silt
9.186	21.43	0.2788	1.301	-2.349	8	6	sandy silt to clayey silt
9.350	21.35	0.2307	1.081	-2.393	8	6	sandy silt to clayey silt
9.514	21.01	0.2750	1.309	-2.287	8	6	sandy silt to clayey silt
9.678	20.03	0.3159	1.577	-2.131	8	6	sandy silt to clayey silt
9.843	20.17	0.3065	1.520	-1.808	8	6	sandy silt to clayey silt
10.007	21.05	0.2827	1.343	-1.095	8	6	sandy silt to clayey silt
10.171	21.38	0.2960	1.384	-0.532	8	6	sandy silt to clayey silt
10.335	21.58	0.2991	1.386	-0.059	8	6	sandy silt to clayey silt
10.499	22.73	0.3148	1.385	0.295	9	6	sandy silt to clayey silt
10.663	23.05	0.3836	1.665	0.454	9	6	sandy silt to clayey silt
10.827	21.42	0.4791	2.236	0.605	10	5	clayey silt to silty clay
10.991	19.41	0.3667	1.889	1.028	7	6	sandy silt to clayey silt
11.155	21.46	0.4490	2.092	0.738	8	6	sandy silt to clayey silt
11.319	17.72	0.4612	2.602	-1.708	8	5	clayey silt to silty clay
11.483	27.31	0.2364	0.865	-1.315	9	7	silty sand to sandy silt
11.647	31.04	0.1506	0.485	-3.282	10	7	silty sand to sandy silt
11.811	25.64	0.2447	0.954	-3.870	10	6	sandy silt to clayey silt
11.975	21.58	0.3173	1.470	-3.856	8	6	sandy silt to clayey silt
12.139	26.15	0.3059	1.170	-2.995	10	6	sandy silt to clayey silt
12.303	41.68	0.4108	0.986	-3.070	13	7	silty sand to sandy silt
12.467	44.50	0.3763	0.845	-2.856	14	7	silty sand to sandy silt
12.631	45.58	0.3678	0.807	-1.981	15	7	silty sand to sandy silt
12.795	44.20	0.3552	0.804	1.435	14	7	silty sand to sandy silt
12.959	50.39	0.3813	0.757	1.571	16	7	silty sand to sandy silt
13.123	70.05	0.4932	0.704	1.686	17	8	sand to silty sand
13.287	74.52	0.6763	0.907	1.705	18	8	sand to silty sand
13.451	74.14	0.8335	1.124	1.644	18	8	sand to silty sand
13.615	68.54	0.8191	1.195	1.591	22	7	silty sand to sandy silt
13.780	55.35	0.7179	1.297	1.621	18	7	silty sand to sandy silt
13.944	43.01	0.5734	1.333	1.750	14	7	silty sand to sandy silt
14.108	34.66	0.4250	1.226	1.906	11	7	silty sand to sandy silt
14.272	29.67	0.3842	1.295	2.048	11	6	sandy silt to clayey silt
14.436	28.25	0.3850	1.363	2.262	11	6	sandy silt to clayey silt
14.600	29.06	0.4047	1.393	2.248	11	6	sandy silt to clayey silt
14.764	31.34	0.4322	1.379	2.092	12	6	sandy silt to clayey silt
14.928	32.44	0.4479	1.381	2.095	12	6	sandy silt to clayey silt
15.092	30.93	0.4363	1.411	2.179	12	6	sandy silt to clayey silt
15.256	31.19	0.4278	1.372	2.293	12	6	sandy silt to clayey silt
15.420	34.12	0.4582	1.343	2.432	11	7	silty sand to sandy silt
15.584	41.77	0.5639	1.350	2.457	13	7	silty sand to sandy silt
15.748	55.18	0.6368	1.154	2.212	18	7	silty sand to sandy silt
15.912	66.11	0.6393	0.967	1.312	16	8	sand to silty sand
16.076	57.67	0.5646	0.979	1.764	18	7	silty sand to sandy silt
16.240	58.61	0.5399	0.921	2.014	19	7	silty sand to sandy silt
16.404	61.61	0.5602	0.909	2.271	20	7	silty sand to sandy silt
16.568	58.08	0.5423	0.934	2.482	19	7	silty sand to sandy silt
16.732	51.76	0.4794	0.926	2.585	17	7	silty sand to sandy silt
16.896	51.35	0.4348	0.847	2.663	16	7	silty sand to sandy silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
17.060	47.24	0.4488	0.950	2.719	15	7	silty sand to sandy silt
17.224	42.49	0.4299	1.012	2.917	14	7	silty sand to sandy silt
17.388	38.01	0.4044	1.064	3.012	12	7	silty sand to sandy silt
17.552	33.22	0.3560	1.072	3.184	11	7	silty sand to sandy silt
17.717	31.29	0.3249	1.038	3.265	10	7	silty sand to sandy silt
17.881	29.98	0.3189	1.064	3.366	10	7	silty sand to sandy silt
18.045	32.24	0.3315	1.028	3.485	10	7	silty sand to sandy silt
18.209	36.08	0.3351	0.929	3.597	12	7	silty sand to sandy silt
18.373	36.78	0.3445	0.937	3.558	12	7	silty sand to sandy silt
18.537	39.35	0.4618	1.174	3.823	13	7	silty sand to sandy silt
18.701	48.95	0.7346	1.500	3.736	16	7	silty sand to sandy silt
18.865	81.90	1.5548	1.898	4.068	26	7	silty sand to sandy silt
19.029	111.64	1.3825	1.238	2.839	27	8	sand to silty sand
19.193	97.49	1.3097	1.343	3.912	23	8	sand to silty sand
19.357	83.49	0.8637	1.035	3.262	20	8	sand to silty sand
19.521	68.68	0.6164	0.898	3.371	16	8	sand to silty sand
19.685	58.67	0.4661	0.794	3.569	14	8	sand to silty sand
19.849	53.45	0.3329	0.623	3.756	13	8	sand to silty sand
20.013	50.79	0.2943	0.579	3.809	12	8	sand to silty sand
20.177	52.56	0.3064	0.583	3.903	13	8	sand to silty sand
20.341	57.62	0.6265	1.087	3.951	18	7	silty sand to sandy silt
20.505	65.21	0.4799	0.736	4.009	16	8	sand to silty sand
20.669	66.73	0.5002	0.750	4.469	16	8	sand to silty sand
20.833	70.12	0.3964	0.565	4.285	17	8	sand to silty sand
20.997	77.36	0.3394	0.439	4.291	19	8	sand to silty sand
21.161	86.71	0.4262	0.492	4.143	21	8	sand to silty sand
21.325	95.98	0.5243	0.546	4.229	23	8	sand to silty sand
21.490	109.54	0.5960	0.544	4.536	21	9	sand
21.654	120.46	0.6748	0.560	4.603	23	9	sand
21.818	126.98	0.7759	0.611	4.452	24	9	sand
21.982	139.72	0.9659	0.691	4.636	27	9	sand
22.146	159.62	1.6896	1.059	5.873	38	8	sand to silty sand
22.310	192.33	1.9409	1.009	4.644	37	9	sand
22.474	218.74	2.0180	0.923	6.230	42	9	sand
22.638	208.39	3.5560	1.706	4.463	50	8	sand to silty sand
22.802	202.62	2.6380	1.302	4.544	49	8	sand to silty sand
22.966	139.39	1.9054	1.367	5.252	33	8	sand to silty sand
23.130	95.05	1.2943	1.362	5.037	23	8	sand to silty sand
23.294	70.93	0.9092	1.282	5.567	23	7	silty sand to sandy silt
23.458	62.11	0.6557	1.056	5.753	20	7	silty sand to sandy silt
23.622	46.15	0.4246	0.920	5.458	15	7	silty sand to sandy silt
23.786	37.64	0.3350	0.890	5.438	12	7	silty sand to sandy silt
23.950	29.48	0.2602	0.882	5.433	9	7	silty sand to sandy silt
24.114	23.40	0.2217	0.947	5.461	9	6	sandy silt to clayey silt
24.278	19.12	0.2041	1.068	5.583	7	6	sandy silt to clayey silt
24.442	14.62	0.1790	1.224	5.656	6	6	sandy silt to clayey silt
24.606	11.55	0.1586	1.372	5.700	6	5	clayey silt to silty clay
24.770	9.18	0.1788	1.947	5.778	4	5	clayey silt to silty clay
24.934	5.82	0.1292	2.220	5.806	4	4	silty clay to clay
25.098	5.30	0.1202	2.267	5.906	3	4	silty clay to clay
25.262	5.06	0.1169	2.309	5.943	5	3	clay
25.427	6.26	0.2564	4.095	5.926	6	3	clay
25.591	8.91	0.3748	4.205	5.461	9	3	clay
25.755	28.63	0.3411	1.192	5.294	11	6	sandy silt to clayey silt
25.919	32.93	0.3307	1.004	5.508	11	7	silty sand to sandy silt
26.083	37.42	0.2842	0.760	5.631	12	7	silty sand to sandy silt
26.247	38.09	0.2640	0.693	6.021	12	7	silty sand to sandy silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
26.411	36.87	0.2557	0.694	5.575	12	7	silty sand to sandy silt
26.575	36.89	0.2149	0.582	5.750	12	7	silty sand to sandy silt
26.739	34.69	0.2138	0.616	5.909	11	7	silty sand to sandy silt
26.903	31.42	0.2129	0.678	5.867	10	7	silty sand to sandy silt
27.067	28.69	0.1991	0.694	5.954	9	7	silty sand to sandy silt
27.231	27.32	0.1844	0.675	6.057	9	7	silty sand to sandy silt
27.395	26.63	0.1703	0.639	6.152	8	7	silty sand to sandy silt
27.559	26.11	0.1697	0.650	6.274	8	7	silty sand to sandy silt
27.723	26.36	0.1772	0.672	6.319	8	7	silty sand to sandy silt
27.887	26.38	0.1776	0.673	6.388	8	7	silty sand to sandy silt
28.051	28.79	0.2162	0.751	6.480	9	7	silty sand to sandy silt
28.215	41.58	0.2547	0.613	6.717	13	7	silty sand to sandy silt
28.379	49.02	0.3016	0.615	6.639	16	7	silty sand to sandy silt
28.543	55.21	0.3783	0.685	7.821	13	8	sand to silty sand
28.707	59.49	0.4532	0.762	6.765	14	8	sand to silty sand
28.871	65.26	0.4915	0.753	6.804	16	8	sand to silty sand
29.035	64.36	0.5031	0.782	6.834	15	8	sand to silty sand
29.199	61.66	0.4483	0.727	7.804	15	8	sand to silty sand
29.364	60.10	0.4103	0.683	7.442	14	8	sand to silty sand
29.528	59.07	0.4037	0.684	7.163	14	8	sand to silty sand
29.692	63.29	0.3939	0.622	7.302	15	8	sand to silty sand
29.856	57.71	0.5191	0.900	7.375	18	7	silty sand to sandy silt
30.020	52.90	0.4451	0.841	7.436	17	7	silty sand to sandy silt
30.184	49.90	0.4223	0.846	7.405	16	7	silty sand to sandy silt
30.348	51.73	0.4012	0.776	7.567	17	7	silty sand to sandy silt
30.512	52.61	0.3515	0.668	7.706	13	8	sand to silty sand
30.676	56.49	0.3606	0.638	7.776	14	8	sand to silty sand
30.840	56.93	0.3429	0.602	7.815	14	8	sand to silty sand
31.004	56.37	0.3375	0.599	8.146	13	8	sand to silty sand
31.168	54.22	0.3534	0.652	8.002	13	8	sand to silty sand
31.332	55.46	0.3552	0.641	7.954	13	8	sand to silty sand
31.496	54.08	0.3644	0.674	8.113	13	8	sand to silty sand
31.660	60.53	0.4064	0.671	8.291	14	8	sand to silty sand
31.824	68.79	0.4507	0.655	8.336	16	8	sand to silty sand
31.988	77.37	0.5556	0.718	8.428	19	8	sand to silty sand
32.152	80.64	0.5634	0.699	8.553	19	8	sand to silty sand
32.316	119.87	0.5555	0.463	9.420	23	9	sand
32.480	118.32	0.9077	0.767	8.573	28	8	sand to silty sand
32.644	117.76	0.8190	0.696	7.213	28	8	sand to silty sand
32.808	81.89	1.0766	1.315	8.481	26	7	silty sand to sandy silt
32.972	74.95	0.6589	0.879	10.370	18	8	sand to silty sand
33.136	71.42	0.5852	0.819	8.904	17	8	sand to silty sand
33.301	76.65	0.7535	0.983	8.854	18	8	sand to silty sand
33.465	83.45	0.5432	0.651	8.397	20	8	sand to silty sand
33.629	73.45	0.8565	1.166	9.219	23	7	silty sand to sandy silt
33.793	64.91	0.8784	1.353	9.169	21	7	silty sand to sandy silt
33.957	68.10	0.6817	1.001	8.790	16	8	sand to silty sand
34.121	48.92	0.9910	2.026	9.523	19	6	sandy silt to clayey silt
34.285	95.30	1.1641	1.221	10.055	23	8	sand to silty sand
34.449	71.78	1.0785	1.503	10.158	23	7	silty sand to sandy silt
34.613	59.81	0.4951	0.828	9.629	14	8	sand to silty sand
34.777	52.75	0.4628	0.877	9.882	17	7	silty sand to sandy silt
34.941	50.74	0.4253	0.838	10.147	16	7	silty sand to sandy silt
35.105	54.96	0.4172	0.759	10.242	18	7	silty sand to sandy silt
35.269	63.67	0.3075	0.483	10.328	15	8	sand to silty sand
35.433	72.24	0.5538	0.767	10.387	17	8	sand to silty sand
35.597	56.18	0.8146	1.450	10.267	18	7	silty sand to sandy silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
35.761	35.16	1.1962	3.402	10.222	17	5	clayey silt to silty clay
35.925	26.47	1.2002	4.535	12.529	25	3	clay
36.089	16.17	1.0426	6.448	16.271	15	3	clay
36.253	12.01	0.6268	5.219	35.280	12	3	clay
36.417	11.00	0.4042	3.675	40.384	11	3	clay
36.581	10.69	0.3007	2.812	35.327	7	4	silty clay to clay
36.745	11.04	0.3053	2.765	35.010	7	4	silty clay to clay
36.909	10.68	0.2942	2.756	37.579	7	4	silty clay to clay
37.073	12.16	0.3032	2.493	35.648	6	5	clayey silt to silty clay
37.238	9.99	0.3139	3.143	37.785	6	4	silty clay to clay
37.402	9.72	0.2610	2.685	40.345	6	4	silty clay to clay
37.566	10.15	0.2378	2.344	39.334	6	4	silty clay to clay
37.730	9.63	0.2538	2.636	40.719	6	4	silty clay to clay
37.894	11.33	0.2457	2.169	40.429	5	5	clayey silt to silty clay
38.058	12.17	0.2617	2.150	35.261	6	5	clayey silt to silty clay
38.222	11.50	0.2814	2.447	35.977	6	5	clayey silt to silty clay
38.386	11.00	0.2732	2.482	38.459	7	4	silty clay to clay
38.550	11.40	0.2956	2.594	39.674	7	4	silty clay to clay
38.714	11.40	0.3560	3.124	37.874	7	4	silty clay to clay
38.878	15.53	0.4867	3.134	64.175	10	4	silty clay to clay
39.042	14.72	0.6196	4.210	57.803	14	3	clay
39.206	14.36	0.4862	3.387	50.718	9	4	silty clay to clay
39.370	13.93	0.4762	3.419	46.539	9	4	silty clay to clay
39.534	15.76	0.4640	2.944	56.463	8	5	clayey silt to silty clay
39.698	15.26	0.4413	2.892	60.647	7	5	clayey silt to silty clay
39.862	14.63	0.4399	3.006	59.511	9	4	silty clay to clay
40.026	14.77	0.4597	3.113	64.278	9	4	silty clay to clay
40.190	15.31	0.4981	3.253	73.447	10	4	silty clay to clay
40.354	16.71	0.5402	3.233	75.294	8	5	clayey silt to silty clay
40.518	15.50	0.5164	3.332	60.951	10	4	silty clay to clay
40.682	14.38	0.5227	3.634	55.886	9	4	silty clay to clay
40.846	17.21	0.5594	3.250	72.179	8	5	clayey silt to silty clay
41.011	13.99	0.5240	3.745	55.507	9	4	silty clay to clay
41.175	12.61	0.4385	3.477	59.193	8	4	silty clay to clay
41.339	11.58	0.3765	3.251	62.542	7	4	silty clay to clay
41.503	12.90	0.3558	2.757	69.228	6	5	clayey silt to silty clay
41.667	11.49	0.3378	2.939	61.790	7	4	silty clay to clay
41.831	11.54	0.2600	2.254	65.395	6	5	clayey silt to silty clay
41.995	11.34	0.2673	2.358	67.161	5	5	clayey silt to silty clay
42.159	12.78	0.3312	2.590	64.696	6	5	clayey silt to silty clay
42.323	12.77	0.3445	2.698	63.486	6	5	clayey silt to silty clay
42.487	12.35	0.3320	2.687	57.251	8	4	silty clay to clay
42.651	11.29	0.3428	3.037	54.131	7	4	silty clay to clay
42.815	13.79	0.4196	3.043	52.161	9	4	silty clay to clay
42.979	20.40	0.4742	2.325	31.212	10	5	clayey silt to silty clay
43.143	36.38	0.5021	1.380	8.091	12	7	silty sand to sandy silt
43.307	36.80	0.5615	1.526	7.202	14	6	sandy silt to clayey silt
43.471	38.03	0.5220	1.373	5.480	12	7	silty sand to sandy silt
43.635	34.74	0.8301	2.389	4.447	13	6	sandy silt to clayey silt
43.799	27.68	0.6002	2.168	4.678	11	6	sandy silt to clayey silt
43.963	46.65	0.7132	1.529	4.611	15	7	silty sand to sandy silt
44.127	69.58	1.0184	1.464	3.664	22	7	silty sand to sandy silt
44.291	94.18	1.3435	1.426	8.562	23	8	sand to silty sand
44.455	79.64	1.3523	1.698	12.195	25	7	silty sand to sandy silt
44.619	74.81	1.2194	1.630	11.729	24	7	silty sand to sandy silt
44.783	64.83	1.1423	1.762	10.476	21	7	silty sand to sandy silt
44.948	56.62	1.2407	2.191	9.896	22	6	sandy silt to clayey silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
45.112	67.37	1.3345	1.981	11.389	22	7	silty sand to sandy silt
45.276	53.90	1.2957	2.404	9.052	21	6	sandy silt to clayey silt
45.440	42.00	1.1995	2.856	10.646	16	6	sandy silt to clayey silt
45.604	49.77	1.0159	2.041	9.584	19	6	sandy silt to clayey silt
45.768	52.77	0.8673	1.643	4.837	17	7	silty sand to sandy silt
45.932	69.55	0.7541	1.084	4.519	22	7	silty sand to sandy silt
46.096	90.11	0.7784	0.864	3.563	22	8	sand to silty sand
46.260	105.73	0.9140	0.864	3.686	25	8	sand to silty sand
46.424	116.45	0.9837	0.845	4.954	28	8	sand to silty sand
46.588	120.29	1.0227	0.850	6.639	29	8	sand to silty sand
46.752	121.69	1.0542	0.866	7.865	29	8	sand to silty sand
46.916	122.63	1.0634	0.867	8.316	29	8	sand to silty sand
47.080	125.97	1.0511	0.834	8.902	30	8	sand to silty sand
47.244	118.22	1.0185	0.862	9.757	28	8	sand to silty sand
47.408	110.18	0.9719	0.882	10.927	26	8	sand to silty sand
47.572	103.02	0.8753	0.850	11.473	25	8	sand to silty sand
47.736	92.44	0.7724	0.836	11.752	22	8	sand to silty sand
47.900	72.79	0.9334	1.282	13.560	23	7	silty sand to sandy silt
48.064	44.58	0.9838	2.207	13.674	17	6	sandy silt to clayey silt
48.228	21.67	0.7377	3.405	14.660	10	5	clayey silt to silty clay
48.392	16.70	0.4877	2.921	28.112	8	5	clayey silt to silty clay
48.556	16.78	0.3114	1.856	47.592	8	5	clayey silt to silty clay
48.720	14.92	0.3378	2.264	62.199	7	5	clayey silt to silty clay
48.885	12.64	0.3634	2.874	68.989	8	4	silty clay to clay
49.049	12.86	0.3417	2.657	69.599	6	5	clayey silt to silty clay
49.213	12.98	0.3369	2.595	68.097	6	5	clayey silt to silty clay
49.377	13.11	0.3398	2.592	71.491	6	5	clayey silt to silty clay
49.541	13.03	0.3443	2.643	74.054	6	5	clayey silt to silty clay
49.705	13.49	0.3508	2.600	78.080	6	5	clayey silt to silty clay
49.869	14.34	0.3644	2.542	83.242	7	5	clayey silt to silty clay
50.033	14.80	0.3723	2.515	87.622	7	5	clayey silt to silty clay
50.197	15.98	0.4025	2.518	90.589	8	5	clayey silt to silty clay
50.361	15.79	0.4500	2.849	76.052	8	5	clayey silt to silty clay
50.525	13.83	0.4305	3.112	59.605	9	4	silty clay to clay
50.689	13.21	0.3682	2.787	68.345	6	5	clayey silt to silty clay
50.853	13.66	0.3566	2.611	70.998	7	5	clayey silt to silty clay
51.017	13.73	0.3515	2.560	70.463	7	5	clayey silt to silty clay
51.181	14.04	0.3243	2.310	69.571	7	5	clayey silt to silty clay
51.345	13.50	0.2912	2.157	69.259	6	5	clayey silt to silty clay
51.509	13.19	0.2688	2.038	72.154	6	5	clayey silt to silty clay
51.673	12.96	0.2665	2.056	75.430	6	5	clayey silt to silty clay
51.837	13.08	0.2524	1.929	78.576	6	5	clayey silt to silty clay
52.001	13.26	0.2595	1.957	72.959	6	5	clayey silt to silty clay
52.165	12.44	0.2491	2.003	70.413	6	5	clayey silt to silty clay
52.329	12.29	0.2221	1.808	76.439	6	5	clayey silt to silty clay
52.493	12.34	0.2254	1.826	80.359	6	5	clayey silt to silty clay
52.657	12.65	0.2222	1.756	81.961	6	5	clayey silt to silty clay
52.822	12.63	0.2091	1.656	85.304	6	5	clayey silt to silty clay
52.986	12.73	0.2124	1.668	82.710	6	5	clayey silt to silty clay
53.150	12.68	0.2100	1.657	80.403	6	5	clayey silt to silty clay
53.314	13.25	0.2088	1.576	84.265	6	5	clayey silt to silty clay
53.478	13.52	0.1951	1.443	80.598	6	5	clayey silt to silty clay
53.642	13.58	0.2242	1.651	81.562	7	5	clayey silt to silty clay
53.806	13.72	0.2282	1.663	85.326	7	5	clayey silt to silty clay
53.970	13.36	0.2017	1.510	91.960	6	5	clayey silt to silty clay
54.134	13.32	0.1771	1.330	86.321	6	5	clayey silt to silty clay
54.298	12.56	0.1535	1.222	79.768	6	5	clayey silt to silty clay

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
54.462	11.71	0.1422	1.214	79.465	6	5	clayey silt to silty clay
54.626	12.27	0.1326	1.080	79.317	5	6	sandy silt to clayey silt
54.790	12.45	0.1385	1.112	76.305	5	6	sandy silt to clayey silt
54.954	11.92	0.2504	2.100	84.056	6	5	clayey silt to silty clay
55.118	12.03	0.2639	2.194	88.795	6	5	clayey silt to silty clay
55.282	35.53	0.4179	1.176	63.344	11	7	silty sand to sandy silt
55.446	39.24	0.4005	1.021	58.026	13	7	silty sand to sandy silt
55.610	53.93	0.5059	0.938	17.204	17	7	silty sand to sandy silt
55.774	59.56	0.7453	1.251	9.673	19	7	silty sand to sandy silt
55.938	61.50	1.0125	1.646	13.111	20	7	silty sand to sandy silt
56.102	65.57	1.2070	1.841	14.398	21	7	silty sand to sandy silt
56.266	72.37	1.3416	1.854	15.184	23	7	silty sand to sandy silt
56.430	70.47	1.3867	1.968	14.853	22	7	silty sand to sandy silt
56.594	62.54	1.3336	2.132	15.101	24	6	sandy silt to clayey silt
56.759	57.78	1.2552	2.172	15.555	22	6	sandy silt to clayey silt
56.923	62.13	1.2312	1.982	16.388	20	7	silty sand to sandy silt
57.087	68.39	1.2985	1.899	15.062	22	7	silty sand to sandy silt
57.251	64.54	1.3385	2.074	14.814	21	7	silty sand to sandy silt
57.415	59.04	1.3060	2.212	15.817	23	6	sandy silt to clayey silt
57.579	60.68	1.2462	2.054	16.441	19	7	silty sand to sandy silt
57.743	62.98	1.2679	2.013	16.382	20	7	silty sand to sandy silt
57.907	56.63	1.2763	2.254	16.176	22	6	sandy silt to clayey silt
58.071	47.66	1.2712	2.667	16.884	18	6	sandy silt to clayey silt
58.235	39.02	1.1626	2.979	18.717	15	6	sandy silt to clayey silt
58.399	29.18	0.9525	3.264	22.679	14	5	clayey silt to silty clay
58.563	16.22	0.7678	4.734	53.390	16	3	clay
58.727	33.97	0.7540	2.220	43.307	13	6	sandy silt to clayey silt
58.891	63.23	0.9231	1.460	17.856	20	7	silty sand to sandy silt
59.055	87.04	1.1334	1.302	10.732	21	8	sand to silty sand
59.219	49.08	1.4580	2.971	9.899	19	6	sandy silt to clayey silt
59.383	30.94	1.3739	4.440	11.540	20	4	silty clay to clay
59.547	29.65	1.1364	3.832	17.993	19	4	silty clay to clay
59.711	39.92	1.1005	2.757	23.136	15	6	sandy silt to clayey silt
59.875	81.57	1.0476	1.284	11.949	26	7	silty sand to sandy silt
60.039	93.16	0.9061	0.973	9.662	22	8	sand to silty sand
60.203	100.04	1.3195	1.319	7.840	24	8	sand to silty sand
60.367	53.88	1.7329	3.216	7.118	21	6	sandy silt to clayey silt
60.532	28.41	1.4610	5.143	8.832	27	3	clay
60.696	26.79	1.0285	3.840	19.001	17	4	silty clay to clay
60.860	34.72	0.9706	2.796	20.199	13	6	sandy silt to clayey silt
61.024	37.25	0.8571	2.301	15.630	14	6	sandy silt to clayey silt
61.188	65.77	0.8080	1.229	12.317	21	7	silty sand to sandy silt
61.352	97.92	1.1323	1.156	8.146	23	8	sand to silty sand
61.516	123.64	1.9833	1.604	6.818	30	8	sand to silty sand
61.680	124.09	1.7778	1.433	7.071	30	8	sand to silty sand
61.844	91.43	1.5906	1.740	16.340	29	7	silty sand to sandy silt
62.008	116.52	1.5258	1.309	18.279	28	8	sand to silty sand
62.172	114.28	1.6304	1.427	10.320	27	8	sand to silty sand
62.336	94.27	1.8486	1.961	10.451	30	7	silty sand to sandy silt
62.500	62.45	1.7202	2.755	12.100	24	6	sandy silt to clayey silt
62.664	61.22	1.5334	2.505	13.955	23	6	sandy silt to clayey silt
62.828	79.84	1.3602	1.704	16.109	25	7	silty sand to sandy silt
62.992	48.99	1.5860	3.237	13.657	23	5	clayey silt to silty clay
63.156	28.27	1.3207	4.671	13.797	27	3	clay
63.320	22.67	1.1253	4.963	25.927	22	3	clay
63.484	30.66	1.0981	3.581	41.228	15	5	clayey silt to silty clay
63.648	65.78	1.0199	1.550	21.361	21	7	silty sand to sandy silt

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil Behavior Type UBC-1983
63.812	97.50	0.8254	0.847	10.400	23	8	sand to silty sand
63.976	102.67	1.0794	1.051	8.305	25	8	sand to silty sand
64.140	90.73	1.2444	1.371	7.896	22	8	sand to silty sand
64.304	96.09	1.3052	1.358	8.648	23	8	sand to silty sand
64.469	114.54	1.7044	1.488	10.924	27	8	sand to silty sand
64.633	136.87	2.4971	1.824	12.574	44	7	silty sand to sandy silt
64.797	148.24	2.5043	1.689	14.373	35	8	sand to silty sand
64.961	143.47	2.5210	1.757	15.800	46	7	silty sand to sandy silt
65.125	134.16	2.4568	1.831	19.023	43	7	silty sand to sandy silt
65.289	122.71	2.4117	1.965	19.149	39	7	silty sand to sandy silt
65.453	121.63	2.1483	1.766	18.870	39	7	silty sand to sandy silt
65.617	107.87	1.8983	1.760	18.931	34	7	silty sand to sandy silt
65.781	81.38	1.6676	2.049	18.533	26	7	silty sand to sandy silt
65.945	80.69	1.5432	1.912	20.088	26	7	silty sand to sandy silt
66.109	96.76	1.4985	1.549	20.224	31	7	silty sand to sandy silt
66.273	125.86	1.2760	1.014	14.234	30	8	sand to silty sand
66.437	125.62	1.5312	1.219	8.601	30	8	sand to silty sand
66.601	124.53	1.8334	1.472	7.910	30	8	sand to silty sand
66.765	139.56	2.0749	1.487	9.450	33	8	sand to silty sand
66.929	158.85	2.4548	1.545	7.450	38	8	sand to silty sand
67.093	147.46	2.7539	1.868	8.534	47	7	silty sand to sandy silt
67.257	140.94	2.8236	2.003	10.715	45	7	silty sand to sandy silt
67.421	151.45	2.9079	1.920	14.730	48	7	silty sand to sandy silt
67.585	149.88	2.9417	1.963	17.118	48	7	silty sand to sandy silt
67.749	154.56	2.9519	1.910	18.087	49	7	silty sand to sandy silt
67.913	150.37	2.6379	1.754	18.995	36	8	sand to silty sand
68.077	155.25	2.8180	1.815	19.815	50	7	silty sand to sandy silt
68.241	169.29	3.1097	1.837	21.366	41	8	sand to silty sand
68.406	165.54	3.2817	1.982	21.851	53	7	silty sand to sandy silt
68.570	167.43	3.3217	1.984	21.314	53	7	silty sand to sandy silt
68.734	174.06	3.5069	2.015	20.389	56	7	silty sand to sandy silt
68.898	169.19	3.5124	2.076	20.397	54	7	silty sand to sandy silt
69.062	156.67	3.4360	2.193	20.196	50	7	silty sand to sandy silt
69.226	157.58	3.1706	2.012	20.280	50	7	silty sand to sandy silt
69.390	161.96	3.0302	1.871	20.500	52	7	silty sand to sandy silt
69.554	166.78	3.0523	1.830	21.099	40	8	sand to silty sand
69.718	157.19	3.0811	1.960	20.561	50	7	silty sand to sandy silt
69.882	142.80	3.0001	2.101	20.391	46	7	silty sand to sandy silt
70.046	128.65	2.6910	2.092	21.088	41	7	silty sand to sandy silt
70.210	122.68	2.4603	2.005	20.422	39	7	silty sand to sandy silt
70.374	126.00	2.4838	1.971	21.612	40	7	silty sand to sandy silt
70.538	122.90	2.5419	2.068	22.166	39	7	silty sand to sandy silt
70.702	126.15	2.5442	2.017	22.069	40	7	silty sand to sandy silt
70.866	136.65	2.6288	1.924	22.358	44	7	silty sand to sandy silt
71.030	146.81	2.8480	1.940	22.350	47	7	silty sand to sandy silt
71.194	149.94	2.9903	1.994	22.244	48	7	silty sand to sandy silt
71.358	144.02	2.1545	1.496	21.985	34	8	sand to silty sand
71.522	142.08	1.9903	1.401	21.695	34	8	sand to silty sand
71.686	127.19	1.8380	1.445	22.016	30	8	sand to silty sand
71.850	124.66	1.6719	1.341	22.406	30	8	sand to silty sand
72.014	125.27	1.5949	1.273	22.350	30	8	sand to silty sand
72.178	128.39	1.5598	1.215	22.595	31	8	sand to silty sand
72.343	117.72	1.5253	1.296	22.771	28	8	sand to silty sand
72.507	107.67	1.4687	1.364	22.720	26	8	sand to silty sand
72.671	101.86	1.3698	1.345	22.985	24	8	sand to silty sand
72.835	99.67	1.3365	1.341	22.888	24	8	sand to silty sand
72.999	95.96	1.2978	1.352	23.158	23	8	sand to silty sand

Depth ft	Tip (Qt) (tsf)	Sleeve (Fs) (tsf)	F.Ratio (%)	PP (U2) (psi)	SPT (blows/ft)	Zone	Soil UBC-1983	Behavior	Type
73.163	94.24	1.2352	1.311	23.200	23	8	sand	to silty	sand
73.327	93.19	1.1876	1.274	23.189	22	8	sand	to silty	sand
73.491	91.70	1.1298	1.232	23.372	22	8	sand	to silty	sand
73.655	90.14	1.0963	1.216	23.434	22	8	sand	to silty	sand
73.819	89.02	1.0541	1.184	23.450	21	8	sand	to silty	sand
73.983	88.08	1.0089	1.146	23.598	21	8	sand	to silty	sand
74.147	85.27	0.9640	1.131	23.620	20	8	sand	to silty	sand
74.311	93.24	0.9672	1.037	23.907	22	8	sand	to silty	sand
74.475	111.38	0.9973	0.895	24.353	27	8	sand	to silty	sand
74.639	127.74	1.5851	1.241	24.473	31	8	sand	to silty	sand
74.803	161.93	2.0688	1.278	24.816	39	8	sand	to silty	sand
74.967	153.71	2.2490	1.463	23.643	37	8	sand	to silty	sand
75.131	148.72	2.1749	1.462	22.971	36	8	sand	to silty	sand
75.295	139.81	2.0291	1.451	23.077	33	8	sand	to silty	sand
75.459	131.36	1.8674	1.422	23.150	31	8	sand	to silty	sand
75.623	117.35	1.6591	1.414	23.409	28	8	sand	to silty	sand
75.787	104.93	1.4623	1.394	23.464	25	8	sand	to silty	sand
75.951	100.67	1.2822	1.274	23.740	24	8	sand	to silty	sand
76.115	116.03	1.3219	1.139	24.356	28	8	sand	to silty	sand
76.280	133.50	1.5660	1.173	25.256	32	8	sand	to silty	sand
76.444	143.96	1.9794	1.375	24.648	34	8	sand	to silty	sand
76.608	168.45	2.2480	1.335	24.593	40	8	sand	to silty	sand
76.772	170.52	2.4700	1.448	24.623	41	8	sand	to silty	sand
76.936	165.09	2.4633	1.492	24.562	40	8	sand	to silty	sand
77.100	169.95	2.4548	1.444	24.384	41	8	sand	to silty	sand
77.264	155.44	2.4136	1.553	24.701	37	8	sand	to silty	sand
77.428	140.49	2.1941	1.562	24.584	34	8	sand	to silty	sand
77.592	133.55	1.9818	1.484	24.456	32	8	sand	to silty	sand
77.756	122.03	1.7187	1.408	24.749	29	8	sand	to silty	sand
77.920	113.89	1.1389	1.000	24.958	27	8	sand	to silty	sand
78.084	114.40	1.1430	0.999	25.381	27	8	sand	to silty	sand
78.248	122.81	1.1714	0.954	25.833	29	8	sand	to silty	sand
78.412	114.40	1.1938	1.044	25.612	27	8	sand	to silty	sand
78.576	107.96	1.1639	1.078	25.699	26	8	sand	to silty	sand
78.740	104.28	1.1325	1.086	25.459	25	8	sand	to silty	sand
78.904	104.19	1.1568	1.110	25.768	25	8	sand	to silty	sand
79.068	113.79	1.2317	1.082	26.058	27	8	sand	to silty	sand
79.232	132.27	1.4481	1.095	26.298	32	8	sand	to silty	sand
79.396	157.60	1.9551	1.241	26.604	38	8	sand	to silty	sand
79.560	170.23	2.5422	1.493	26.707	41	8	sand	to silty	sand
79.724	161.91	2.8308	1.748	25.275	39	8	sand	to silty	sand
79.888	149.29	2.6551	1.779	24.359	36	8	sand	to silty	sand
80.052	139.02	2.3470	1.688	24.139	33	8	sand	to silty	sand
80.217	133.05	2.0490	1.540	24.548	32	8	sand	to silty	sand
80.381	125.39	1.8499	1.475	25.247	30	8	sand	to silty	sand
80.545	131.67	1.8057	1.371	26.167	32	8	sand	to silty	sand
80.709	152.93	2.0281	1.326	27.078	37	8	sand	to silty	sand
80.873	166.47	2.3585	1.417	27.226	40	8	sand	to silty	sand
81.037	160.01	2.4614	1.538	26.730	38	8	sand	to silty	sand
81.201	143.40	2.6107	1.821	25.927	46	7	silty sand	to sandy silt	
81.365	138.90	2.3406	1.685	26.203	33	8	sand	to silty	sand

