

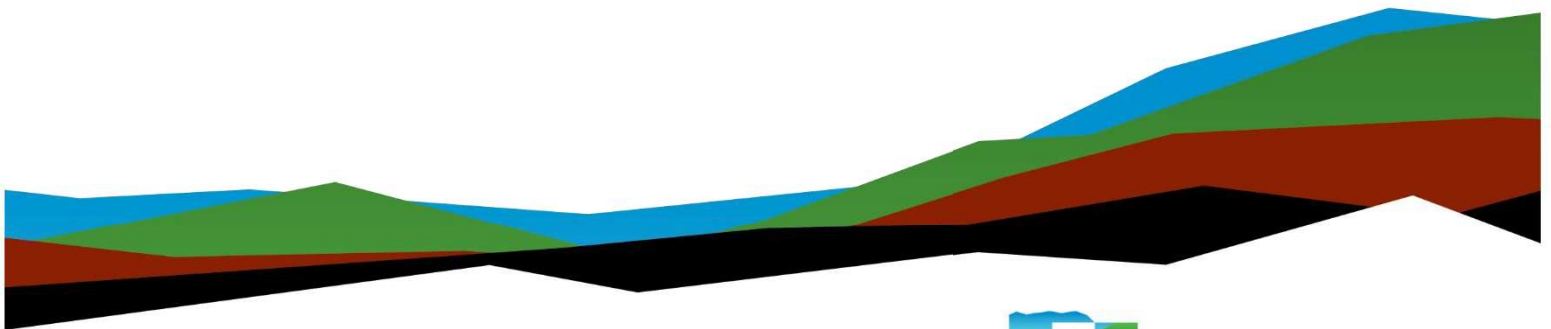
Savira Solar

Preliminary Geotechnical Engineering

April 1, 2026 | Terracon Project No. CB255153

Prepared for:

Clearway Energy Group
100 California Street, Floor 4
San Francisco, CA 94111



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Terracon.com

- Facilities
- Environmental
- Geotechnical
- Materials

April 1, 2026

Clearway Energy Group
100 California Street, Floor 4
San Francisco, CA 94111

Attn: Mr. Kevin Arterbridge-Whitten, REP
P: (609) 408-2817
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Re: Preliminary Geotechnical Engineering
Savira Solar
Desert Center, Riverside County, California
Terracon Project No. CB255153

Dear Mr. Whitten:

We have completed the scope of Preliminary Geotechnical Engineering for the above referenced project in general accordance with Terracon Proposal No. PCB255153 dated November 17, 2025. This report presents the findings of the subsurface exploration and provides geotechnical test data and preliminary recommendations and site characterization for the proposed solar development.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,

Terracon



Kalvin Katipunan
Assistant Project Manager



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APR Review by F. Fred Buhamdan, P.E.
Sr. Principal



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Attachments

Field Exploration Results

Laboratory Test Results

Field Soil Electrical Resistivity Results

Supporting Information

Note: This report was originally delivered in a web-based format. **Blue Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the  Terracon logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

Refer to each individual Attachment for a listing of contents.

Introduction

This report presents the results of our subsurface exploration performed for the proposed solar power facility to be located near Desert Center, Riverside County, California. The purpose of these services was to provide information and preliminary geotechnical engineering recommendations relative to the proposed solar development, specifically to aid the design team in understanding anticipated subsurface conditions at the site along with preliminary engineering parameters and soil properties. As the report is considered preliminary, supplemental exploration and testing should be completed to bring the report to a design level study.

The geotechnical engineering Scope of Services for this project included soil borings, field electrical resistivity testing, percolation testing, laboratory thermal resistivity, corrosion, and California Bearing ratio.

Project Description

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Item	Description
Information Provided	<p>During the proposal stage, the following information was provided to Terracon:</p> <ul style="list-style-type: none"> ■ Geotechnical Scope of Work titled "Savira – SOW_Geotech Study 10202025" dated October 20, 2025 ■ Plan set titled "Savira Solar Project, Riverside County, California" prepared for Clearway, dated April 15, 2025 ■ KMZ titled "2025-04-15 Savira Solar – Site Layout", which provides the approximate boundaries and site layout
Project Description and Proposed Structures	<p>The project consists of the construction of an approximately 550-acre solar facility. The site will include the construction of a 531-acre PV solar generating facility, along with a 11.15-acre Battery Energy Storage System (BESS), a 1.27-acre substation facility, and an approximately 1.8 mile long above-ground transmission line. The site will also include an Operations and Maintenance (O&M) building and access roads.</p>

Item	Description
	<p>We assume the project will include the construction of multiple arrays of solar PV panels on single-axis trackers. The panels will be installed on ground-mounted systems likely supported on driven piles. Equipment pads will likely be slab-on-grade or reinforced mat-type foundations or driven piles. The proposed facility will also include a transmission line anticipated to be supported on drilled piers.</p> <p>We understand the proposed BESS will consist of battery storage units supported by shallow concrete footings, drilled shafts, or driven steel piles. The proposed substation is anticipated to be supported on shallow footings, mat foundations, or drilled shafts.</p> <p>The proposed facility will also include an O&M building anticipated to be supported on shallow concrete foundations.</p>
Foundation Loads (assumed)	<p>We have estimated the following foundation loads for the project:</p> <p>Panel Array Racking System</p> <ul style="list-style-type: none"> ■ PV Module Downward: 2-4 kips ■ PV Module Uplift: 1-3 kips ■ PV Module Lateral: 1-3 kips ■ Inverters: 5-10 kips <p>BESS Yard</p> <ul style="list-style-type: none"> ■ BESS Axial Load: 75 kips or 400 to 800 psf contact pressure ■ BESS Shear Load: 5 kips <p>Substation</p> <ul style="list-style-type: none"> ■ Transformer: 500-1,000 psf contact pressure <p>BESS Yard</p> <ul style="list-style-type: none"> ■ BESS Axial Load: 75 kips or 400 to 800 psf contact pressure ■ BESS Shear Load: 5 kips <p>Operations & Maintenance Building</p> <ul style="list-style-type: none"> ■ Columns 20 to 40 kips ■ Walls 1 to 2 kips per linear foot

Item	Description
	Above Ground Transmission Line <ul style="list-style-type: none"> ■ Axial Load: 60 kips ■ Shear Load: 150 kips ■ Overturning Moment: 7,500 foot-kip
Grading/Slopes	<p>Grading plans and location of proposed facilities were not provided at the time of preparation of this report. Therefore, we have assumed the following:</p> <ul style="list-style-type: none"> ■ We assume that the array field grade will follow the existing site grades with minimum grading required to bring the site to finish grade. ■ We anticipate cut/fill to be on the order of 1 to 2 feet within the substation and BESS yard
Access Roads	<p>On-site access roadways will be comprised of compacted native soil subgrade or aggregate surface roads. We anticipate access roads will have a maximum vehicle load of 30,000 lbs. and will travel over the access roads only once per week. Furthermore, we understand that fire access roads shall be considered all-weather access roads capable of supporting a total fire truck load of 75,000.</p>
Infiltration Systems	<p>We understand that shallow infiltration systems consisting of detention basins are planned on site at three separate locations. Terracon conducted percolation testing within each proposed basin locations in accordance with Riverside County standards.</p>
Building Code	<p>2025 CBC</p>

Terracon should be notified if any of the above information is inconsistent with the planned construction, as modifications to our recommendations may be necessary.

Site Conditions

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	<p>The project is located in Desert Center, Riverside County, California. The project site encompasses a total area of approximately 550 acres.</p> <p>Approximate center the site: Latitude: 33.7015°N, Longitude: 115.2597°W</p>
Existing Improvements	Aerial photographs indicate that site areas are currently undeveloped. Nearby features include existing PV arrays, substations, and paved roads.
Current Ground Cover	Exposed soils with dense desert vegetation.
Existing Topography (From Google Earth Pro™)	The site has approximate elevations ranging from 620 to 746 feet, generally decreasing in elevation from the southwest corner of the site to the northeast.

Geotechnical Characterization

Site Geology

The site is situated within the south-central portion of the Mojave Desert Geomorphic Province in Southern California. Geologic structures within the Mojave Desert tend to consist of isolated mountain ranges separated by vast expanses of desert plains, with a predominate northwest-southeast faulting trend, with a secondary trend of east-west (parallel to the Transverse Ranges Province). Principal bounding faults include the San Andreas Fault to the southwest and the Garlock Fault to the north.^{1, 2} Based on our review of the Geologic Map of California – Salton Sea Sheet, the site is underlain by recent Alluvium³.

¹ Harden, D. R., "California Geology, Second Edition," Pearson Prentice Hall, 2004.

² Norris, R. M. and Webb, R. W., "Geology of California, Second Edition," John Wiley & Sons, Inc., 1990.

³ Olaf P. Jenkins Edition, compilation by Charles W. Jennings 1967, Scale 1:250,000

Subsurface Conditions

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. Subsurface soils encountered within our boring consisted of medium dense to very dense silty sands silty sands with gravel. Cobbles ranging between 3 and 6 inches in diameter were encountered within our all of our test pits excavated to a depth of 10 feet bgs. Very dense silty sand layers were encountered between depths of 5 and 15 feet within some boring locations. The above-average density of the soil layers is an indicator of the possible presence of caliche within the site. Caliche refers to the calcium carbonate, generally white, light pink, or reddish brown, commonly found within the subsurface soil layers in the Mojave Desert region.

Lab Results

Laboratory tests were conducted on selected soil samples and the test results are presented in the [Exploration Results](#) section and on the boring logs. Atterberg limit test results indicate that the on-site soils are predominantly non-plastic with one test within the B-3 location resulting in low plasticity at a depth of 5 feet below ground surface (bgs). A consolidation test performed at the BESS-3 location at a depth of 2.5 feet bgs indicates that the sandy soils encountered at an approximate depth of 5 feet bgs have a slight collapse potential when saturated under normal footing loads of 2,000 psf. The consolidation test performed at the SUB-1 location at a depth of 5 feet bgs provided unreliable results as it may have been performed on a disturbed sample. Therefore, the results are not anticipated to be reliable for swell/collapse analysis. Direct Shear testing was conducted on recovered samples collected at within the upper 10 feet throughout the site. The test results indicated a peak friction angle ranging from 35 to 36 and a cohesion ranging from 0 to 156 pounds per square foot (psf). Maximum density/optimum moisture content testing conducted in accordance with ASTM D1557 (Modified Proctor) indicate that near surface soils tested have maximum dry densities ranging from 121.2 to 130.8 pounds per cubic foot (pcf) and optimum water contents ranging from 7.4 to 9.6 percent. California Bearing Ratio (CBR) values were determined based on 85, 90, and 95 percent relative compactions as determined by ASTM D1557 (Modified Proctor). The CBR results are summarized in the table below:

Relative Compaction	CBR Value ²
85%	2.6 to 5.7
90%	5.0 to 16.7
95%	6.3 to 32.8

1. CBR values correspond to a penetration of 0.1 inch

Corrosivity

The table below lists the results of laboratory soluble sulfate, soluble chloride, electrical resistivity, and pH testing. The values may be used to estimate potential corrosive characteristics of the on-site soils with respect to contact with the various underground materials which will be used for project construction.

Corrosivity Test Results Summary								
Boring	Sample Depth (feet)	Soluble Sulfate (mg/kg)	Sulfides (mg/kg)	Chloride (mg/kg)	Red-Ox Potential (RmV)	Electrical Resistivity (Ω -cm)	Total Salts (ppm)	pH
B-1	0-5	115	0.7	84	145	750	24	8.1
B-5	0-5	109	0.5	152	143	2000	70	8.1
B-9	0-5	359	1	310	153	1900	210	8.2
B-10	0-5	109	0.5	130	139	1800	66	8.2
B-13	0-5	104	0.5	151	105	13000	27	9.1
BESS-1	0-5	94	0.3	157	149	10,000	100	7.7
SUB-1	0-5	371	1.1	184	147	3,300	57	8.5
OM-1	0-5	144	1.8	250	243	10,000	87	8.1

Results of soluble sulfate testing indicate samples of the on-site soils tested possess moderate sulfate concentrations when classified in accordance with Table 19.3.1.1 of the ACI Design Manual. Concrete should be designed in accordance with the exposure class S1 provisions of the ACI Design Manual, Section 318, Chapter 19.

Numerous sources are available to characterize corrosion potential to buried metals using the parameters above. Section 10.7.5 of the AASHTO LRFD Bridge Manual, 9th Edition, 2020, stated the following soil or site conditions should be considered as indicative of potential deterioration or corrosion for steel piles:

- Soil electrical resistivity less than 2,000 ohm-cm
- Ph value less than 5.5
- Ph value between 5.5 and 8.5 with high organic content
- Sulfate concentration greater than 1,000 ppm (mg/kg)

Imported fill materials may have significantly different properties than the site materials noted above and should be evaluated if expected to be in contact with metals used for construction.

Thermal Resistivity Testing

Terracon subcontracted Geotherm USA to perform laboratory thermal resistivity testing. Testing was conducted on four (4) bulk samples at the project site from a depth of 0 to 5 feet bgs. One (1) sample was collected from the proposed substation area, one (1) sample was collected from the BESS area, and two (2) samples were collected from the PV array field. The tests were conducted on soil samples remolded to 85% and 95% (as determined by ASTM D1557) of the material's maximum dry density within the BESS and substation areas and remolded to 85% within the PV array field for a total of 6 tests. Dry out curves targeted the higher of either the in-situ moisture content of the optimum moisture content as determined by ASTM D1557, totally dry condition, and two intermediate points. The thermal resistivity test results are presented in [Exploration Results](#).

Groundwater

The borings were advanced using a hollow-stem-auger technique that allows short term groundwater observations to be made while drilling. Groundwater seepage was not encountered within any of our borings drilled to a maximum depth of 51.5 feet bgs during drilling or for the short duration the borings remained open. These observations represent groundwater conditions at the time of field exploration and may not be indicative of other times, or at other locations.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than expected. Recent publicly available data (within the last 20 years) is not available within a 1-mile radius from the site boundary.

In general, groundwater is not anticipated to occur within the depth of excavations or foundation installations at the site.

Seismic Site Class

Our field exploration included standard penetration testing (SPT) within the substation to a maximum depth of 50 feet bgs. Soils from a depth of 50 to 100 feet were assumed to be the same conditions encountered at 50 feet bgs in order to generate a profile to determine the Seismic Site Class. Based on the SPT data from the substation, a

correlated V_{S30} profile of 823 feet/s was calculated based on Wair et al. (2012) which corresponded to a Site Class D.

In accordance with Section 20.3 of ASCE 7-22, when correlated V_{S30} values are used, seismic design parameters shall be evaluated for site class conditions corresponding to the baseline V_{S30} , a 30 percent increase in V_{S30} , and a 30 percent decrease in V_{S30} . The governing seismic design parameters shall be based on the highest resulting ground motion and spectral acceleration values among these three scenarios. Previous versions of this report presented results considering this approach.

The 2025 CBC seismic design parameters have been generated using the ASCE Hazard Tool⁴. This web-based software application calculates seismic design parameters in accordance with ASCE 7-22 and 2025 CBC, as derived from the USGS Seismic Design Geodatabase. Seismic design parameters are presented in the table below.

Description	Value
2025 CBC Site Class ¹	DE, D, CD
Site Latitude (near center of site)	33.7015°N
Site Longitude (near center of site)	115.2597°W
S_S , Mapped Spectral Acceleration for a Short Period	0.7
S_1 , Mapped Spectral Acceleration for a 1-Second Period	0.25
S_{MS} – MCE Site-modified spectral acceleration parameter - Short Period	1.13
S_{M1} – MCE Site-modified spectral acceleration parameter - 1-Second Period	0.87
S_{DS} , Design Spectral Acceleration Parameter - Short Period	0.75
S_{D1} , Design Spectral Acceleration Parameter - 1-Second Period	0.58

⁴ <https://ascehazardtool.org/>

Description	Value
1. Seismic site class in general accordance with the 2025 CBC, which refers to ASCE 7-22. The site class is required to determine the Seismic Design Category for a structure.	

Faulting and Estimated Ground Motions

The site is located in Southern California, which is a seismically active area. The type and magnitude of seismic hazards affecting the site are dependent on the distance to causative faults, the intensity, and the magnitude of the seismic event. As calculated using the USGS Unified Hazard Tool, the San Andreas (Coachella), which is considered to have the most significant effect at the site from a design standpoint, has a maximum credible earthquake magnitude of 7.76 and is located approximately 57 kilometers from the site.

Based on the USGS Design Maps Summary Report, using the American Society of Civil Engineers (ASCE 7-22) standard, the peak ground acceleration (PGA_M) at the project site is expected to be 0.37 g. Based on the USGS Unified Hazard Tool, the project site has a mean magnitude of 6.83. Furthermore, the site is not located within an Alquist-Priolo Earthquake Fault Zone based on our review of the State Fault Hazard Maps.⁵

Liquefaction

Liquefaction is a mode of ground failure that results when a saturated soil loses substantial strength in response to earthquake shaking. Liquefaction is typically a hazard where loose sand or non-plastic silt soils exist below groundwater but may also occur with sensitive plastic silt or clay below groundwater. The California Geological Survey (CGS) has designated certain areas within the state as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of relatively shallow groundwater.

The project site is not mapped for liquefaction hazard potential by the CGS, but was mapped within a moderate susceptibility zone for liquefaction potential by the County of Riverside. Based on the anticipated depth to groundwater and the dense nature of

⁵ California Geological Survey.
<https://maps.conservation.ca.gov/cgs/informationwarehouse>.

subsurface soils, we conclude that the potential for liquefaction at the site is considered low. Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also considered low.

Stormwater Management

We performed 6 percolation tests within the proposed site development for use by the project civil engineer in the design of the storm water retention system. The percolation tests were performed using borings P-1 through P-6 drilled to depths of about 3 feet and 5 feet bgs. The approximate locations of the test holes are shown on the [Exploration Plan](#).

After drilling the test holes, we placed approximately 2 inches of gravel in the bottom of each hole, then placed a slotted PVC pipe in each hole, and filled the annular space around the pipe with gravel. The test holes were filled with water and left to saturate for a minimum 24 hours. We then filled the shallow holes with water to depths ranging from about 3 to 36 inches and measured the drop-in water surface over a period varying from approximately 1 to 2 hours depending on the hole, refilling the holes as necessary to maintain the desired head.

The measured percolation rates and calculated infiltration rates are summarized in the following table.

Perc. Test Location	Depth (ft)	Avg. Head (ft)	Perc. Rate (inch/hr)	Infiltration Rate (inch/hr)
P-1	3	35.5	180	27
P-2	5	20.63	55	5
P-3	3	41.75	183	18
P-4	5	24.75	230	17
P-5	3	43.75	129	12
P-6	5	34.88	210	11

Since we used test borings to perform percolation testing, we have used the Porchet formula (aka Inverse Borehole Formula) to calculate the infiltration rate which takes into account sidewall area of the bore hole. Storm water runoff may likely contain materials such as silt, leaves, oil residues, and other matter that may reduce the percolation characteristics of the soil. We therefore recommend that a filtration system be implemented into the design and installed. An appropriate safety factor should be applied to the measured infiltration rates by the designer for use in design and be based

on the amount of filtration designed into the system, at a minimum a Safety Factor of 2 shall be utilized. The values presented in the table are clear water rates and do not have a safety factor applied. In addition, we recommend a regular maintenance program be implemented to monitor the storm drainage/filtration system prior to the beginning of each wet weather season.

We have provided the following considerations for the design and construction of the retention/detention facilities. Planned retention/detention facilities should be located no closer than 10 feet to structural site improvements.

The long-term infiltration rates will depend on many factors, and can vary or be reduced if the following conditions are present:

- Fill placement,
- Variability of site soils,
- Fine layering of soils, or
- Maintenance and pre-treatment (filtration) of the influent are not performed regularly

Fill Placement: We anticipate earthwork required to develop the site may consist of cuts and fills of 2 feet or less. It is unknown whether final grades will consist of native material or imported fill. As a result, the percolation tests performed may not be representative of the final soil conditions depending on the blend of soils utilized as structural fill and native soils exposed where cuts and fills are made. Additional percolation testing may be warranted following rough grading to confirm the values utilized in design are appropriate.

Subsurface Soil Variation: Variations in subsurface soil conditions and the presence of fine layering can affect the infiltration rate of the receptor soils.

Construction Considerations: The infiltration rate of the receptor soils will be reduced in the event that fine sediment, organic materials, and/or oil residue are allowed to accumulate in the retention facilities. The use of a filtration system is highly recommended as well as a maintenance program.

Operation of heavy equipment during construction may densify the receptor soils below the infiltration facility. The soils exposed in the bottom of the infiltration facility should not be compacted and should remain in their native condition. This may require scarification of the soils prior to construction.

Maintenance of Facilities: Satisfactory long-term performance of an infiltration facility will require some degree of maintenance. Accumulations of sediment, organic materials, or other material that serve to reduce their permeability of the receptor soils should be removed from the filtration system on a regular basis so as not to enter the retention system. The filtration system shall have a rigorous maintenance program, debris from the

filtration maintenance should be disposed of at an approved facility in accordance with applicable regulations.

Electrical Resistivity Testing

Terracon performed field measurements of soil electrical resistivity for the support of grounding design. Soil resistivity data was obtained from two test arrays at two (2) locations in the proposed BESS and substation and ten (10) in the proposed PV array field for a total of twelve (12) locations. The approximate locations of the test arrays are shown in the [Exploration Plan](#). Each testing was performed in general accordance with Wenner Array (4-pin) method per ASTM G57. This method was performed in with IEEE Standard 81, IEEE Guide for Measuring Earth Resistivity, Ground Impedance and Earth Surface Potentials of a Ground System. The tests in the proposed BESS and substation areas, and at 3 locations within PV Array Field, included perpendicular arrays, North-South and East-West, with "a" spacings of 2, 4, 6, 8, 10, 20, 50, 100, and 200 feet. The remaining tests in the proposed PV array field included perpendicular arrays, North-South and East-West, with "a" spacings of 2, 4, 6, 8, 10, and 20 feet. The "a" spacing is generally considered to be the depth of influence of the test. The electrical resistivity test results are presented in [Exploration Results](#).

Geotechnical Overview

The site appears suitable for the proposed construction based upon geotechnical conditions encountered in the test borings, provided that the recommendations provided in this report are implemented in the design and construction phases of this project.

We anticipate that the proposed PV solar panels will be supported by driven steel piles. We understand that the proposed BESS will consist of battery storage units supported by driven steel piles, drilled shafts, or mat foundations and other appurtenant electrical equipment supported on mat or driven pile foundations. We anticipate the substation structures will be supported on shallow footings, drilled piers or mat foundations. The support structures for the proposed transmission line is anticipated to be supported in drilled shafts, and the proposed O&M building is anticipated to be supported on shallow concrete foundations.

We recommend shallow foundations be supported on engineered fill extending to a minimum depth of 1 foot below foundations or 2 feet below existing grade, whichever is greater. Overexcavation and replacement is not required for support of drilled shaft or driven pile foundations.

Geotechnical engineering recommendations for foundation systems and other earth connected phases of the project are outlined below. The recommendations contained in this report are based upon the results of field and laboratory testing (presented in the

Exploration Results), engineering analyses, and our current understanding of the proposed project. The **General Comments** section provides an understanding of the report limitations.

Earthwork

The following presents recommendations for site preparation, excavation, subgrade preparation, and placement of engineered fills on the project. The recommendations presented for the design and construction of foundations are contingent upon following the recommendations outlined in this section.

Earthwork on the project should be observed and evaluated by Terracon. The evaluation of earthwork should include observation and testing of engineered fill, subgrade preparation, foundation of bearing soils, and other geotechnical conditions exposed during construction of the project.

An on-site, pre-job meeting with the owner, the contractor and the Geotechnical Engineer should occur prior to all grading-related operations. Observation, testing, documentation, and reporting of the grading operation should be performed by the Geotechnical Engineer of Record. A final compaction report should be issued by the Geotechnical Engineer of Record at the completion of the grading operation. Interim reports may be issued according to project requirements. Operations undertaken at the site without the Geotechnical Engineer present may result in exclusions of affected areas from compaction reports for the project.

Grading of the subject site should be performed, at a minimum, in accordance with these recommendations and with applicable portions of the current version of CBC. The following recommendations are presented for your assistance in establishing proper grading criteria.

Site Preparation

Prior to placing fill, existing vegetation, debris, and other deleterious materials should be removed from proposed foundation and roadway areas. Exposed surfaces within these areas should be free of mounds and depressions which could prevent uniform compaction. The site should be initially graded to create a relatively level surface to receive fill and provide for a relatively uniform thickness of fill beneath proposed structures.

We recommend stripping topsoil to depths that expose soils with less than 3 percent organics and no roots having a diameter greater than 1/8 inch. While the depth of the unsuitable soils should be expected to vary, the thickness of the top soil layer may be estimated to range between 6 and 12 inches for construction budgeting purposes. The thickness of the top soil layer was not determined during our field exploration. Therefore, the actual depth of stripping should be verified by engineering observations made during

the grading operations at the project. Exposed surfaces should be free of mounds and depressions which could prevent uniform compaction.

Stripped materials consisting of vegetation and organic materials should be wasted from the site or used to revegetate landscaped areas or exposed slopes after completion of grading operations. If it is necessary to dispose of organic materials on site, they should be placed in non-structural areas, and in fill sections not exceeding 5 feet in height.

Although no evidence of fills, utilities, or underground facilities such as septic tanks, cesspools, or basements was observed during the site reconnaissance, such features could be encountered during construction. If unexpected fills, utilities, or underground facilities are encountered, such features should be removed, and the excavation thoroughly cleaned prior to backfill placement and/or construction.

Subgrade Preparation

The proposed structures may be supported by a shallow concrete foundation system bearing on engineered fill, driven piles, or drilled shafts foundation.

Shallow foundations should bear on engineered fill extending to a minimum depth of 1 foot below the bottom of foundations, or 2 feet below existing grades, whichever is greater. Grading for the proposed equipment should incorporate the limits of the foundation plus a lateral distance of 1 foot beyond the outside edge of perimeter footings.

Overexcavation and replacement is not required for support of drilled shaft or driven pile foundations.

Subgrade soils beneath proposed exterior slabs and roadways should be scarified to a minimum depth of 12 inches, moisture conditioned, and compacted. The moisture content and compaction of subgrade soils should be maintained until slab or roadway construction.

All exposed areas which will receive fill, once properly cleared and benched where necessary, should be scarified to a minimum depth of 10 inches, moisture conditioned as necessary, and compacted per the compaction requirements in this report. Compacted structural fill soils should then be placed to the proposed design grade and the moisture content and compaction of subgrade soils should be maintained until foundation or pavement construction.

Based upon the subsurface conditions determined from the geotechnical exploration, subgrade soils exposed during construction are anticipated to be relatively workable; however, the workability of the subgrade may be affected by precipitation, repetitive construction traffic or other factors. If unworkable conditions develop, workability may be improved by scarifying and drying.

Excavation

We anticipate that excavations for the proposed construction can be accomplished with conventional earthmoving equipment. Excavation penetrating the cemented soils and cobbles may require the use of specialized heavy-duty equipment, to facilitate rock break-up and removal. Consideration should be given to obtaining a unit price for difficult excavation in the contract documents for the project.

The bottom of excavations should be thoroughly cleaned of loose soils and disturbed materials prior to backfill placement and/or construction. Onsite soils consist of cohesionless sandy soils. Such soils have the tendency to cave and slough during excavations. Therefore, formwork may be needed for foundation excavations.

Individual contractors are responsible for designing and constructing stable, temporary excavations. Excavations should be sloped or shored in the interest of safety following local, and federal regulations, including current OSHA excavation and trench safety standards.

Fill Material and Placement

All fill materials should be inorganic soils free of vegetation, debris, and fragments larger than six inches in size. Pea gravel or other open-graded materials should not be used as fill or backfill without the prior approval of the geotechnical engineer.

Clean on-site soils (provided they are screened for oversized particles with dimensions larger than 3 inches) or approved imported materials may be used as fill materials for the following:

- general site grading
- foundation areas
- exterior slab areas
- foundation backfill
- roadway areas

Imported soils for use as fill material within proposed structure areas should conform to low volume change materials as indicated in the following specifications:

<u>Gradation</u>	<u>Percent Finer by Weight (ASTM C 136)</u>
3"	100
No. 4 Sieve	50-100
No. 200 Sieve	40(max)
■ Liquid Limit	30 (max)
■ Plasticity Index	10 (max)

- Maximum Expansion Index* 20 (max)
*ASTM D4829

The contractor shall notify the Geotechnical Engineer of import sources sufficiently ahead of their use so that the sources can be observed and approved as to the physical characteristic of the import material. For all import material, the contractor shall also submit current verified reports from a recognized analytical laboratory indicating that the import has a "not applicable" (Class S0) potential for sulfate attack based upon current ACI criteria and is "mildly corrosive" to ferrous metal and copper. The reports shall be accompanied by a written statement from the contractor that the laboratory test results are representative of all import material that will be brought to the job.

Engineered fill should be placed and compacted in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift. Fill lifts should not exceed 10 inches loose thickness.

Compaction Requirements

Recommended compaction and moisture content criteria for engineered fill materials are as follows:

Material Type and Location	Per the Modified Proctor Test (ASTM D 1557)		
	Minimum Compaction Requirement	Range of Moisture Contents for Compaction Above Optimum	
		Minimum	Maximum
<u>Approved on-site or imported fill soils:</u>			
Beneath foundations:	90%	0%	+3%
Utility trenches (structural areas) ¹ :	90%	0%	+3%
Utility trenches (landscape areas):	90%	0%	+3%
Fill greater than 5 feet in depth	95%	0%	+3%
Exterior Slabs:	90%	0%	+3%
Unpaved roads	90%	0%	+3%
Miscellaneous backfill:	90%	0%	+3%
Aggregate base:	95%	0%	+3%

1. Upper 12 inches should be compacted to 95% within pavement and structural areas. Low-volume change imported soils should be used in lightly loaded equipment areas.

Utility Trench Backfill

We anticipate that the on-site soils will provide suitable support for underground utilities and piping that may be installed. Any soft and/or unsuitable material encountered at the bottom of excavations should be removed and be replaced with an adequate bedding material.

Trench excavation should not be conducted below a downward 1:1 projection from existing foundations without engineering review of shoring requirements and geotechnical observation during construction.

A non-expansive granular material with a sand equivalent greater than 30 should be used for bedding and shading of utilities, unless allowed or specified otherwise by the utility manufacturer.

On-site materials are considered suitable for backfill of utility and pipe trenches from 1 foot above the top of the pipe to the final ground surface, provided the material is free of organic matter and deleterious substances. Imported low volume change soils should be used for trench backfill in structural areas.

Trench backfill should be mechanically placed and compacted as discussed earlier in this report. Compaction of initial lifts should be accomplished with hand-operated tampers or other lightweight compactors. Where trenches are placed beneath footings, the backfill should satisfy the gradation and expansion index requirements of engineered fill discussed in this report. Flooding or jetting for placement and compaction of backfill is not recommended.

Grading and Drainage

All grades must provide effective drainage away from the proposed structures during and after construction and should be maintained throughout the life of the structure. Water retained next to the structures result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential foundation movements causing cracked slabs and walls.

We recommend a minimum horizontal setback distance of 10 feet from the perimeter of any structure and the high-water elevation of the nearest storm-water retention basin.

Exterior Slab Design and Construction

Exterior slabs-on-grade, exterior architectural features, and utilities founded on, or in backfill may experience some movement due to the volume change of the backfill. To reduce the potential for damage caused by movement, we recommend:

- minimizing moisture increases in the backfill;
- controlling moisture-density during placement of backfill;
- using designs which allow vertical movement between the exterior features and adjoining structural elements;
- placing effective control joints on relatively close centers

Earthwork Construction Considerations

Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction of roadways. Construction traffic over the completed subgrades should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over or adjacent to construction areas should be removed. If the subgrade desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted prior to roadway construction.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

Should unstable subgrade conditions develop stabilization measures will need to be employed. Stabilization measures may include placement of aggregate base and multi-axial geogrid. Use of lime, fly ash, kiln dust or cement could also be considered as a stabilization technique. Laboratory evaluation is recommended to determine the effect of chemical stabilization on subgrade soils prior to construction.

We recommend that the earthwork portion of this project be completed during extended periods of dry weather if possible. If earthwork is completed during the wet season (typically November through April) it may be necessary to take extra precautionary measures to protect subgrade soils. Wet season earthwork operations may require additional mitigative measures beyond that which would be expected during the drier summer and fall months. This could include diversion of surface runoff around exposed soils and draining of ponded water on the site. Once subgrades are established, it may be necessary to protect the exposed subgrade soils from construction traffic.

The individual contractor(s) is responsible for designing and constructing stable, temporary excavations as required to maintain stability of both the excavation sides and bottom. Excavations should be sloped or shored in the interest of safety following local, and federal regulations, including current Occupational Safety and Health Administration (OSHA) excavation and trench safety standards.

Construction Observation and Testing

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation, proof-rolling, placement and compaction of controlled compacted fills, backfilling of excavations to the completed subgrade.

The exposed subgrade and each lift of compacted fill should be tested, evaluated, and reworked, as necessary, as recommended by the Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the structure areas and 5,000 square feet in roadway areas. Where not specified by local ordinance, one density and water content test should be performed for every 50 linear feet of compacted utility trench backfill. This testing frequency criteria may be adjusted during construction as specified by the geotechnical engineer of record.

In areas of foundation excavations, the bearing subgrade should be evaluated by the Geotechnical Engineer. If unanticipated conditions are observed, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

Shallow Foundations

We anticipate that the proposed BESS/substation equipment/O&M building may be supported on either spread footings, slab-on grade, or mat foundations.

Recommendations for foundation for the proposed structures and related structural elements are presented in the following paragraphs.

If the site has been prepared in accordance with the requirements noted in [Earthwork](#), the following design parameters are applicable for shallow foundations.

Shallow Foundation Design Recommendations

Item	Description
Foundation System	Spread footings, slab on grade, mat foundation

Item	Description
Maximum Net Allowable Bearing Pressure (1-inch settlement)^{1, 2}	3,000 psf up to 10 feet wide 2,500 psf up to 20 feet wide 2,000 psf up to 30 feet wide
Maximum Net Allowable Bearing Pressure (2-inches settlement)^{1, 2}	4,500 psf up to 10 feet wide 3,500 psf up to 20 feet wide 3,000 psf up to 30 feet wide
Required Bearing Stratum³	Engineered fill extending to a minimum of 1 foot below the bottom of foundations, or 2 feet below existing grade, whichever is greater.
Design Modulus of Subgrade Reaction, k³	225 pounds per square inch per inch (psi/in) The modulus was obtained on estimates obtained from NAVFAC 7.1 design charts. This value is for a small-loaded area (1 sq.ft. or less) such as for forklift wheel loads or point loads and should be adjusted for larger loaded areas.
Modulus Correction Factor³	$k_c = k [(B+1)/2B]^2$
Minimum Embedment Below Finished Grade	18 inches
Minimum Dimensions	Square footings and mats: 24 inches Strip footings: 18 inches
Ultimate Passive Resistance⁴	380 pcf
Ultimate Coefficient of Sliding Friction⁵	0.50
Estimated Differential Settlement	About 1/2 of total settlement over a horizontal distance of 40 feet

1. The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. An appropriate factor of safety has been applied. These bearing pressures can be increased by 1/3 for transient loads unless those loads have been factored to account for transient conditions.
2. Unsuitable or soft soils should be overexcavated and replaced per the recommendations presented in **Earthwork**.
3. k values should be reduced to account for dimensional effects of largely loaded areas. Where k_c is the corrected or design modulus value and B is the mat width in feet.
4. Use of passive earth pressures requires the footing forms be removed and compacted structural fill be placed against the vertical footing face. A factor of safety of 2.0 is recommended.
5. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to net uplift conditions. A factor of safety of 1.5 is recommended.

Settlement calculations were performed utilizing Westergaard and Hough's methods⁶ to estimate the static settlement for various foundations widths with an allowable settlement of 1-inch and 2 inches.

Finished grade is defined as the lowest adjacent grade within five feet of the foundation for perimeter (or exterior) footings.

The allowable foundation bearing pressure applies to dead loads plus design live load conditions. The design bearing pressure may be increased by one-third when considering total loads that include wind or seismic conditions. The weight of foundation concrete below grade may be neglected in dead load computations.

Foundation should be reinforced as necessary to reduce the potential for distress caused by differential foundation movement. Foundation excavations should be observed by the geotechnical engineer. If the soil conditions encountered differ significantly from those presented in this report, supplemental recommendation will be required.

Deep Foundations

Drilled Shaft Design Recommendations

Proposed substation electrical equipment, BESS, and transmission line may be supported on drilled shaft piers. Total required embedment of the drilled shaft should be determined by the structural engineer based on structural loading and parameters provided in this report.

Drilled Shaft Axial Loading

Drilled piers should have a minimum (center-to-center) spacing of three diameters. Closer spacing may require a reduction in axial load capacity. Axial capacity reduction can be determined by comparing the allowable axial capacity determined from the sum of individual piers in a group versus the capacity calculated using the perimeter and base of the pier group acting as a unit. The lesser of the two capacities should be used in design.

The allowable uplift skin friction may be taken as 60% of the allowable compressive skin friction value provided in the table below; however, the weight of the foundation should be added to these values to obtain the actual allowable uplift capacities for drilled shafts. Tensile reinforcement should extend to the bottom of shafts subjected to uplift loading. In

⁶ FHWA Geotechnical Engineering Circular No. 6 – Shallow Foundations, FHWA – SA-02-054

addition, the following table summarizes the allowable skin friction and allowable end bearing design values based on a factor of safety of at least 2.5. Spacing closer than 3D (where D is the diameter of the pier) is not recommended due to the potential for the installation of a new pier disturbing an adjacent installed pier, likely resulting in axial capacity reduction

Stratigraphy¹ Depth Below Finished Grade (feet)	Soil Model¹	ϕ (°)²	MFAD Modulus of Deformation (ksi)	Allowable Compressive Skin Friction (psf)³	Allowable End Bearing (psf)⁴	γ' (pcf)²
2	Sand	37	3.0	100	--	110
5						
5	Sand	35	2.3	150	10,000	110
10						
10	Sand	39	3.5	500	15,000	110
18						
18	Sand	45	10.4	700	20,000	115
23						
23	Sand	39	5.9	800	20,000	120
43						
43	Sand	42	7.4	1200	20,000	120
50						

1. See subsurface Profile in Geotechnical Characterization for more details on Stratigraphy

2. Definition of Terms:
 ϕ : internal friction angle
 γ' : Effective unit weight

3. The values provided should be multiplied by the circumference of the shaft times the depth.

4. The values provided should be multiplied by the area of the shaft.

Drilled Shaft Lateral Loading – LPILE Parameters

Based on our review of the subsurface conditions in the area of the substation, our laboratory testing, and the Standard Penetration Test (SPT) results, engineering properties have been estimated for the soils conditions as shown in the following table. Due to potential for disturbance and scour within the upper soils around the shaft, lateral and axial capacity of soils within the upper 2 feet should be neglected. This depth of neglect should be verified by the design team.

Recommended geotechnical parameters for lateral load analyses by others of drilled shaft foundations have been developed for use in the LPILE computer program. The following

table summarizes input values for use in LPILE analyses. LPILE estimated values of k_h and E_{50} may be used. Since deflection or a service limit criterion will most likely control lateral capacity design, no safety/resistance factor is included with the parameters.

Stratigraphy¹		L-Pile Soil Model¹	ϕ (°)²	γ' (pcf)²
Layer	Depth Below Finished Grade (feet)			
1	2	Sand	37	110
	5			
2	5	Sand	35	110
	10			
3	10	Sand	39	110
	18			
4	18	Sand	45	115
	23			
5	23	Sand	39	120
	43			
6	43	Sand	42	120
	50			

1. See subsurface Profile in Geotechnical Characterization for more details on Stratigraphy

2. Definition of Terms:

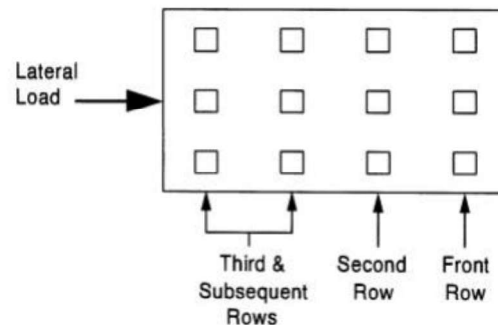
ϕ : internal friction angle

γ' : Effective unit weight

Design of the deep foundations should be completed by the structural engineer using the geotechnical engineering design criteria provided herein. The required foundation size and depth should be determined based upon analyses for vertical loads, lateral loads, and overturning moments.

The load capacities provided herein are based on the stresses induced in the supporting soil strata. The structural capacity of the shafts/piles should be checked to assure they can safely accommodate the combined stresses induced by axial and lateral forces. Lateral deflections of shafts/piles should be evaluated using an appropriate analysis method, and will depend upon the pile's diameter, length, configuration, stiffness and "fixed head" or "free head" condition. We can provide additional analyses and estimates of lateral deflections for specific loading conditions upon request. The load-carrying capacity of shafts/piles may be increased by increasing the diameter and/or length.

When piers are used in groups, the lateral capacities of the piers in the second, third, and subsequent rows of the group should be reduced as compared to the capacity of a single, independent pier. Guidance for applying p-multiplier factors to the p values in the p-y curves for each row of pier foundations within a pier group are as follows:



1. Front row: $P_m = 0.8$
2. Second row: $P_m = 0.4$
3. Third and subsequent row: $P_m = 0.3$

For the case of a single row of piers supporting a laterally loaded grade beam, group action for lateral resistance of piers would need to be considered when spacing is less than five pier diameters (measured center-to-center).

Drilled Shaft Construction Considerations

Due to presence of sandy soils, caving of soils within the drilled shaft excavations should be anticipated. Temporary steel casing may be required to properly drill and clean shafts prior to concrete placement. The drilling speed should be reduced as necessary to minimize vibration and caving of the silty sand materials. The contractor should be prepared to use casing or other approved means to prevent caving. The contractor should review the boring logs to make sure they are familiar with the anticipated subsurface conditions prior to beginning construction of the deep foundations.

In the event drilled hole walls slough during drilling, temporary steel casing may be required to properly drilled shafts prior to concrete placement. We recommend the use of slurry drilling methods with polymers method to keep the solids in suspension during the drilling. Drilled shaft foundation concrete should be placed within 6 inches of the shaft base of the slurry-filled excavation immediately after completion of drilling and cleaning. The tremie should remain inserted several feet into the fresh concrete as it displaces the slurry upward and until placement is complete. The slurry should have a sand content no greater than 1% at the time concrete placement commences. The maximum unit weight of the slurry should be established in consultation with Terracon.

As an alternative to temporary casing, the shaft excavation may be backfilled with a slurry mix in order to help stabilize sloughing sidewalls of the excavation, allowed to dry, and re-drilled through the backfill. The slurry mix design should be submitted to the Geotechnical Engineer for review and approval.

Drilled shaft foundation concrete should be placed immediately after completion of drilling and cleaning. If foundation concrete cannot be placed in dry conditions, a tremie should be used for concrete placement. Due to potential sloughing and raveling, foundation concrete quantities may exceed calculated geometric volumes.

If casing is used for drilled shaft construction, it should be withdrawn in a slow continuous manner maintaining a sufficient head of concrete to prevent infiltration of water or the creation of voids in shaft concrete. Shaft concrete should have a relatively high fluidity when placed in cased shaft holes or through a tremie. Shaft concrete with slump in the range of 6 to 8 inches is recommended.

Foundation concrete should be placed immediately after completion of drilling and cleaning. Closely spaced shafts should be drilled and filled alternatively, allowing the concrete to set at least eight hours before drilling the adjacent shaft. All excavations should be filled with concrete as soon after drilling as possible. In no event should shaft holes be left open overnight.

We recommend that all drilled shaft installations be observed on a full-time basis by an experienced geotechnical engineer in order to evaluate that the soils encountered are consistent with the recommended design parameters. If the subsurface soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required. The Geotechnical Engineer should observe the installation of drilled piers to verify the soil conditions and the diameter and depth of piers. Drilled piers should be constructed true and plumb.

Free-fall concrete placement in drilled piers will only be acceptable if provisions are taken to avoid striking the concrete on the sides of the hole or reinforcing steel. The use of a bottom-dump hopper, or an "elephant's trunk" discharging near the bottom of the hole where concrete segregation will be minimized, is recommended.

Drilled pier end bearing surfaces must be thoroughly cleaned prior to concrete placement. A representative of the Geotechnical Engineer should inspect the bearing surface and foundation pier configuration. If the subsurface soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.

The contractor should check for gas and/or oxygen deficiency before any workers enter the excavation for observation and manual cleanup. All necessary monitoring and safety precautions as required by OSHA, State or local codes should be strictly enforced.

Driven Pile Design Parameters

Proposed battery storage units and PV panels can be supported on driven steel W-section foundations (assumed to be W6x9 or similar) in general accordance with the following sections.

The design capacity of a single-driven pile is a function of several factors including:

- Size and type of pile;
- Type and capacity of pile installation equipment;
- Pile integrity after installation; and
- Engineering properties of the subsurface soils.

Based on specific conditions encountered on site, the soils are generally considered drivable for pile installation. Piles penetrating the cemented soils and cobbles may require pre-drilling. The most effective means of verifying pile drivability and capacities for either tension or lateral loads is through pile load tests.

Pile foundation design parameters have been based upon correlated capacities utilizing soil strength criteria determined from the soil borings and laboratory testing.

The tables below neglect a depth of 1 foot for axial and lateral resistance. This neglect is estimated based on our experience and accounts for depth of scour and/or disturbance from utilities near the piles. Depth of neglect should be verified and adjusted by the design engineer based on the scour analysis. Allowable capacities were based on a minimum factor-of-safety (FOS) of 2.0 for skin friction and 3.0 for end bearing

Description	Top Depth Bottom Depth	Total Unit Weight (pcf)	Allowable Compression Unit Skin friction (psf) ¹	Allowable Bearing Pressure (psf) ²
Stratum 1	1	110	60	--
	4			
Stratum 2	4	110	120	6,000
	9			
Stratum 3	9	120	190	15,000
	12			
Stratum 4	12	120	330	20,000
	20			

1. Allowable uplift capacity is on the order of 70% of the compression capacity values in the table. The values provided should be multiplied by the box perimeter of the pile times the depth. The box perimeter is considered two times the width of the flange plus two times the depth of the web.
2. The values provided should be multiplied by the box area of the pile and be used for compression resistance only.

Recommended soil parameters for lateral load analysis of driven pile foundations have been developed for use in LPILE computer programs. Engineering properties have been estimated as outlined below:

Description	Top Depth Bottom Depth	Effective Unit Weight (pcf)	L-PILE/ GROUP Soil Type	ϕ (°)
Stratum 1	1	110	Sand	32
	4			
Stratum 2	4	110	Sand	35
	12			
Stratum 3	12	120	Sand	39
	20			

Driven Piles Construction Considerations

Based on the field exploration and laboratory testing, it is our opinion that the soils on the site are suitable for pile installation into native soils. Piles penetrating the cemented soils and cobbles may require pre-drilling. The most effective means of verifying pile drivability and capacities for either tension or lateral loads is through pile load tests.

A geotechnical engineer should be engaged to make periodic observations of pile driving operations during construction. Each pile should be observed and checked for buckling, crimping and alignment in addition to recording penetration resistance, depth of embedment, and general pile driving operations.

As part of the overall quality control program, the time rate of installation (seconds per foot of embedment) should be recorded during production post driving. As a direct extension of the design process, additional "proof" testing should be performed on a representative number of production posts that do not meet the minimum installation rate criteria outlined in this report.

Gravel-Surfaced Drives and Parking

Aggregate surface roadway design was conducted in general accordance with the Army Corps of Engineers (Corps), Technical Manual TM-5-822, Design of Aggregate Surface Roads and Airfields (1990).

The design of aggregate surface thickness was based on assumed traffic consisting of 200 vehicles per day with 25 percent trucks, less than 10 percent of the total traffic

composed of trucks having three or more axles, and no tracked vehicles. Terracon should be contacted if significant changes in assumed traffic loads or characteristics are anticipated.

As a minimum, the aggregate surface course on roadways should be a minimum of 5 inches in depth after full compaction, and constructed directly above 10 inches of scarified, moisture conditioned, and compacted native soils.

The aggregate surface course should conform to Class II aggregate base in accordance with the standard specifications per the State of California Department of Transportation, or other approved local governing specifications.

The aggregate surface course should be compacted to a minimum of 95 percent of the maximum dry density as determined by ASTM D1557. The surface course should be compacted at a moisture content not more than 4 percent above the optimum moisture content defined by ASTM D1557.

Shoulder build-up on both sides of proposed roadways should match the aggregate surface elevation and slope outwards at a minimum grade of 10% for five feet.

Roadway Design and Construction Considerations

Regardless of the design, un-surfaced roadways will display varying levels of wear and deterioration. We recommend an implementation of a site inspection program at a frequency of at least once per year to verify the adequacy of the roadways. Preventative measures should be applied as needed for erosion control and re-grading. An initial site inspection should be completed approximately three months following construction.

Preventative maintenance should be planned and provided for through an on-going management program to enhance future roadway performance. Preventative maintenance activities are intended to slow the rate of deterioration, and to preserve the roadway investment.

Surfacing materials should not be placed when the surface is wet. Surface drainage should be provided away from the edge of roadways to reduce lateral moisture transmission into the subgrade.

If rut depths become excessive as construction work progresses, re-grading and re-compaction should be performed as necessary. Care should be taken to reduce or eliminate trafficking of the unpaved access road when the subgrade is wet as this will result in accelerated rutting conditions. Scarification, moisture treatment as necessary, and re-compaction of the roadways will likely be necessary as the roadways deteriorate.

Materials and construction of roadways for the project should be in accordance with the requirements and specifications of the California Department of Transportation or the applicable local governing body.

General Comments

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials, or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly affect excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety and cost estimating including excavation support and dewatering requirements/design are the responsibility of others. Construction and site development have the potential to affect adjacent properties. Such impacts can include damages due to vibration, modification of groundwater/surface water flow during construction, foundation movement due to undermining or subsidence from excavation, as well as noise or air quality concerns. Evaluation of these items on nearby properties are commonly associated with contractor means and methods and are not addressed in

Preliminary Geotechnical Engineering Report

Savira Solar | Desert Center, Riverside County, California

April 1, 2026 | Terracon Project No. CB255153



this report. The owner and contractor should consider a preconstruction/precondition survey of surrounding development. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

Attachments

Exploration and Testing Procedures

Field Exploration

Our final scope of service is detailed as follows:

Number of Explorations	Type of Exploration	Depth or Description	Location
13	Soil Boring	26½ feet	Arrays
6	Test Pit	10 feet	
6	Percolation Test	3 to 5 feet	
6	Electrical Resistivity Test	Max Spacing 20 feet	
4	Electrical Resistivity Test	Max Spacing 200 feet	
4	Soil Boring	26½ to 51½ feet	BESS
1	Test Pit	10 feet	
1	Electrical Resistivity Test	Max Spacing 200 feet	
2	Soil Boring	51½ feet	Substation
1	Test Pit	10 feet	
1	Electrical Resistivity Test	Max Spacing 200 feet	
1	Soil Boring	51½	O&M Building
1	Soil Boring	51½	Transmission Line

Boring Layout and Elevations: Boring layout was provided by TotalEnergies and adjusted by Terracon based on accessibility. Borings were located using handheld GPS equipment (estimated horizontal accuracy of about ± 15 feet) and referencing existing site features. Approximate ground surface elevations were estimated using Google Earth. If elevations and a more precise boring layout are desired, we recommend borings be surveyed.

Subsurface Exploration Procedures: We advanced the borings with a track-mounted, drill rig using continuous flight augers (hollow stem). Four samples were generally obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. Test samples were collected during drilling in general accordance with the appropriate ASTM methods using Standard Penetration Testing (SPT) and sampling using either standard split-spoon or Modified California samplers. A sampling spoon was driven into the ground

by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration was recorded as the Standard Penetration Test (SPT) resistance value, also referred to as N-values. The N-values are indicated on the boring logs at the test depths.

We also observed the boreholes while drilling and at the completion of drilling for the presence of groundwater. The groundwater levels are shown on the attached boring logs.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials observed during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Test Pit Excavations: Test pits were excavated with a hydraulically controlled backhoe to a depth of approximately 10 feet or excavation refusal, whichever occurred first. Continuous lithologic logs of each test pit were recorded by our field engineer during the field exploration and photographs of the excavated pits were taken.

Percolation Testing: Select borings were utilized for percolation testing of approximate depths of 3 and 5 feet below existing site grades (bgs). Upon completion of drilling and sampling, a 2-inch-thick layer of gravel was placed in the bottom of the percolation test borings. A 3-inch diameter PVC pipe was installed on top of the gravel layer in each boring. Gravel was used to backfill between the pipes and the boring sidewall. The borings then were filled with water for the minimum pre-soak period. At the beginning of each test, the pipes were refilled with water and readings were taken at a standardized time interval based on County requirements.

In-Situ Electrical Resistivity Testing: We performed in-situ field electrical resistivity surveys in general accordance with the Wenner Four Point method (ASTM G57) as summarized in the following table. Two mutually perpendicular arrays were performed for each test. Electrode "a" spacings are summarized in the following table..

No. of Test Locations	Electrode "a" Spacing (feet)	Planned Location
6	2, 4, 6, 8, 10, 20	Array Area
4	2, 4, 6, 8, 10, 20, 50, 100, and 200	Array Area
1		BESS Area
1		Substation Area

Site Location and Exploration Plans

Contents:

Site Location

Exploration Location Plans (PV Array, BESS, Substation, Transmission Line, and O&M)

Geotechnical Engineering Report

Savira Solar ■ Desert Center, CA

February 26, 2026 ■ Terracon Project No. CB255153



Site Location

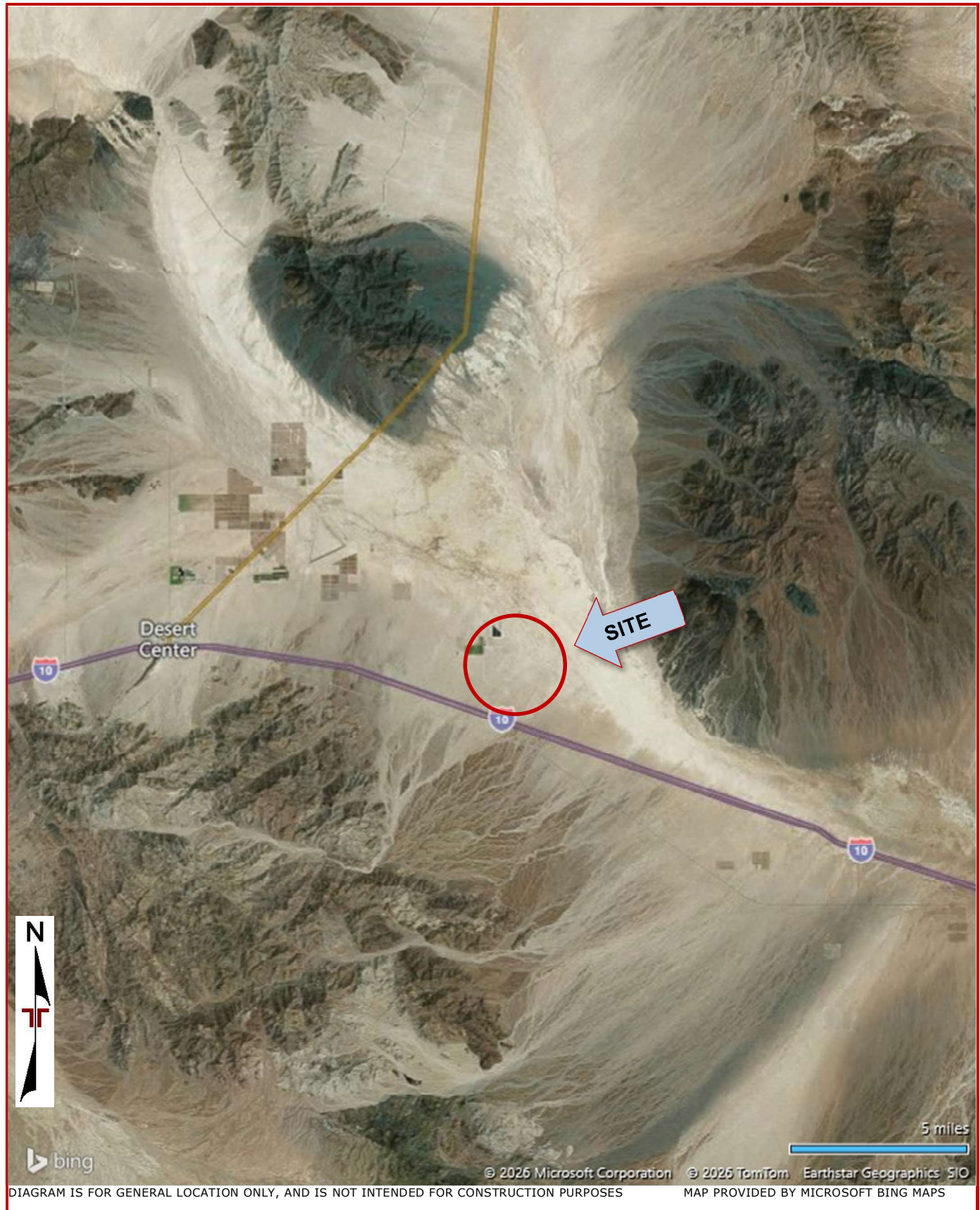


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

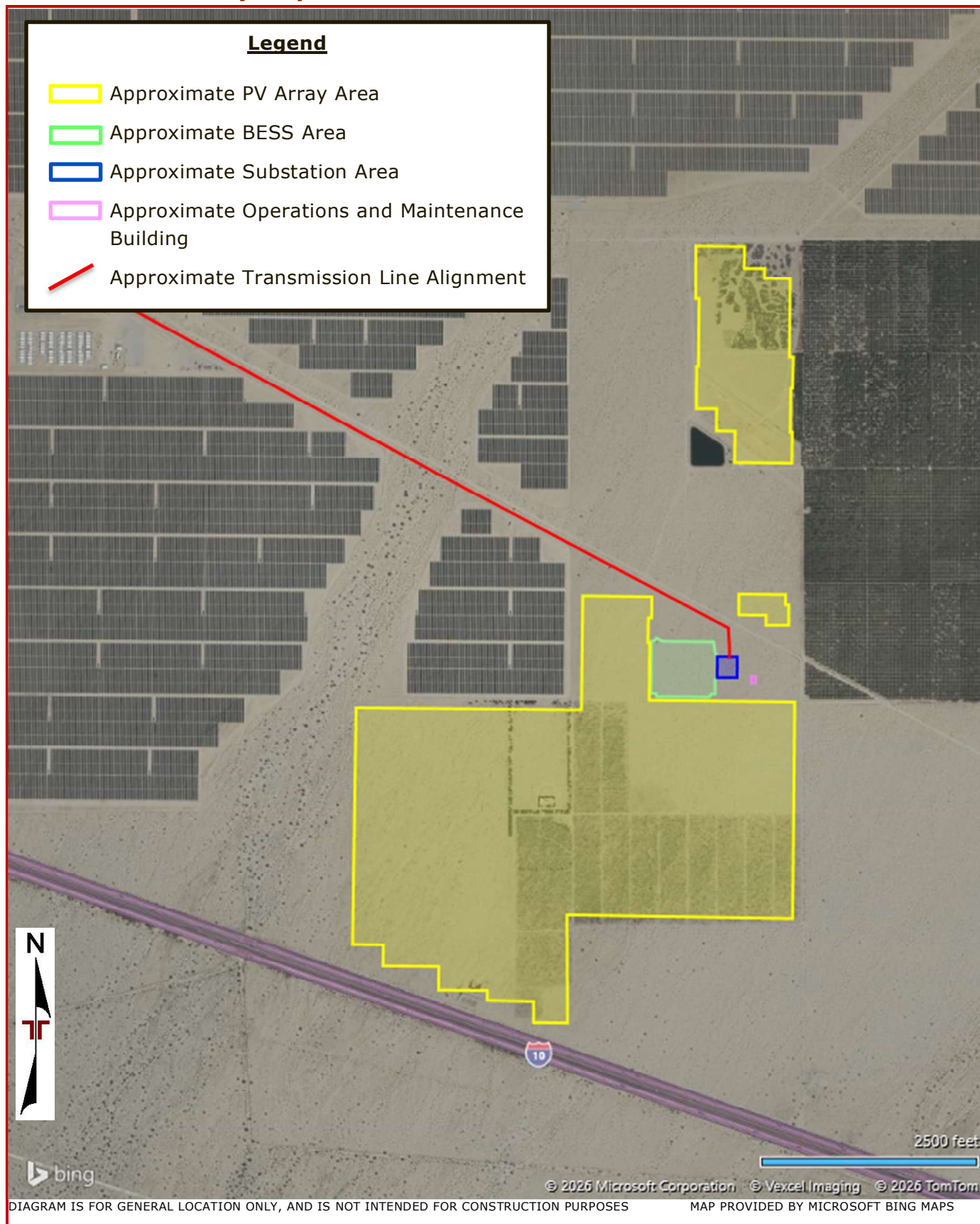
Geotechnical Engineering Report

Savira Solar ■ Desert Center, CA

February 26, 2026 ■ Terracon Project No. CB255153



Site Location – Key Map



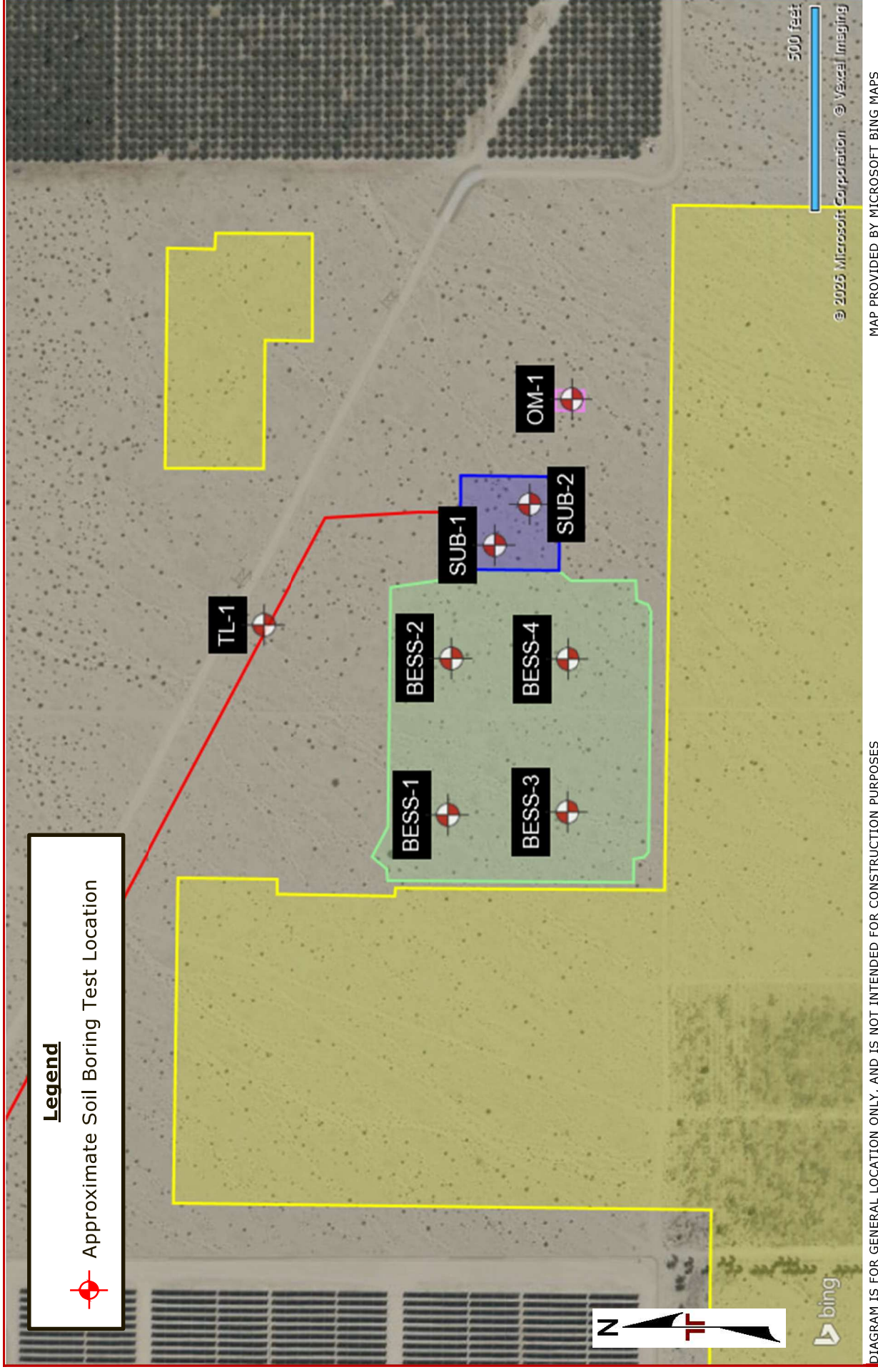
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Exploration Plan – Soil Borings (Substation, BESS, O&M, Transmission Line)



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Exploration Plan – Soil Borings (PV Array)

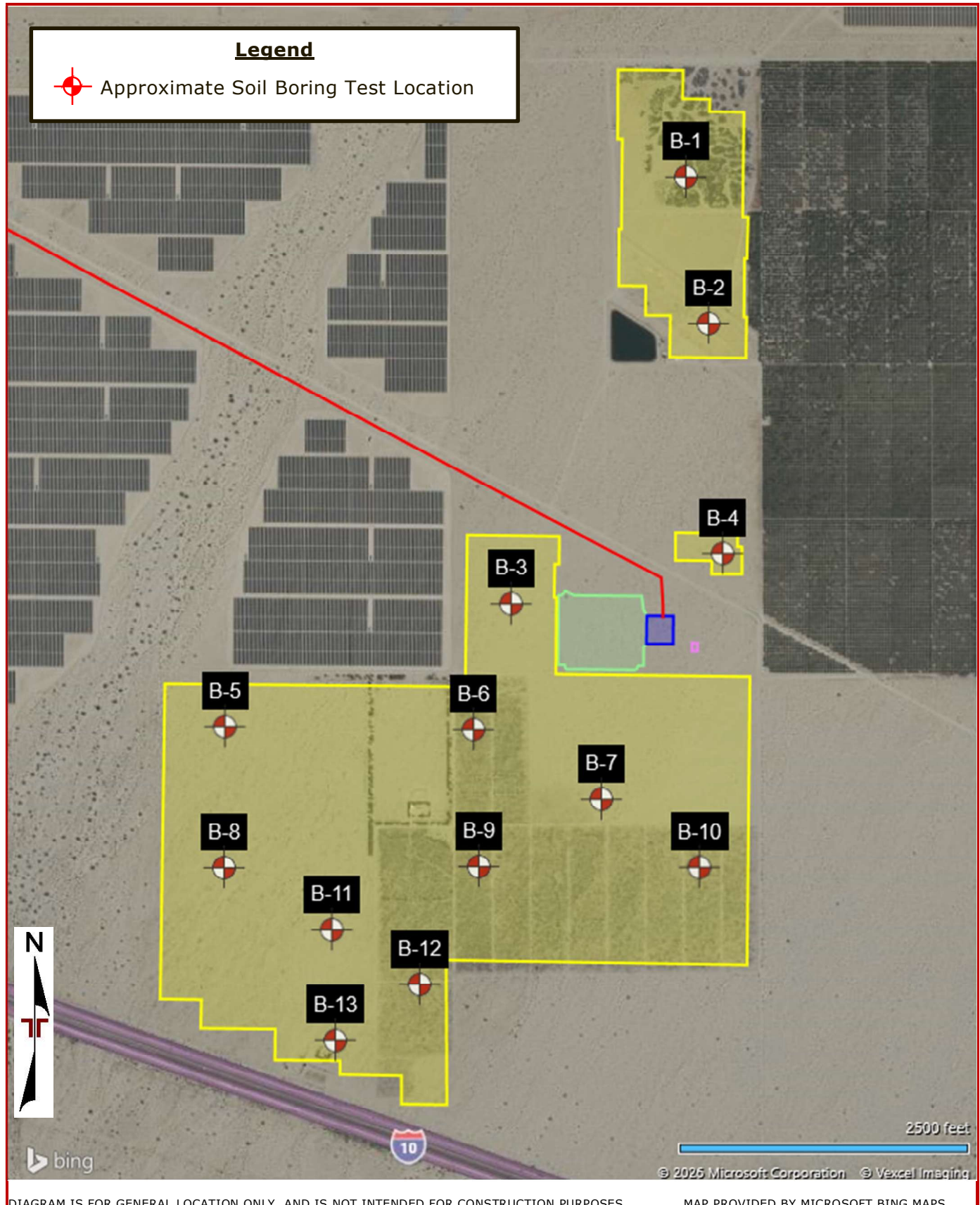


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Exploration Plan – Percolation Tests

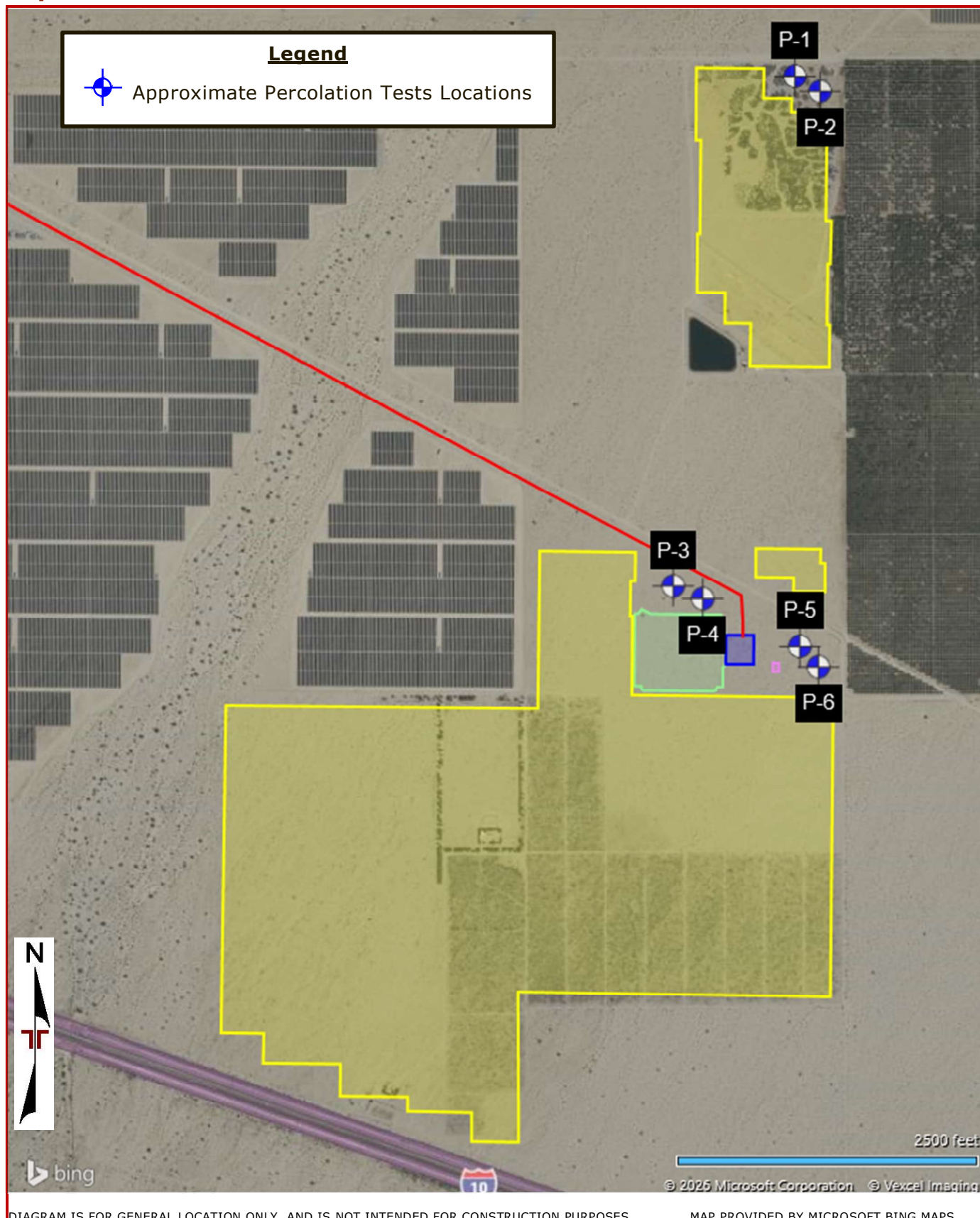


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Exploration Plan – Test Pits

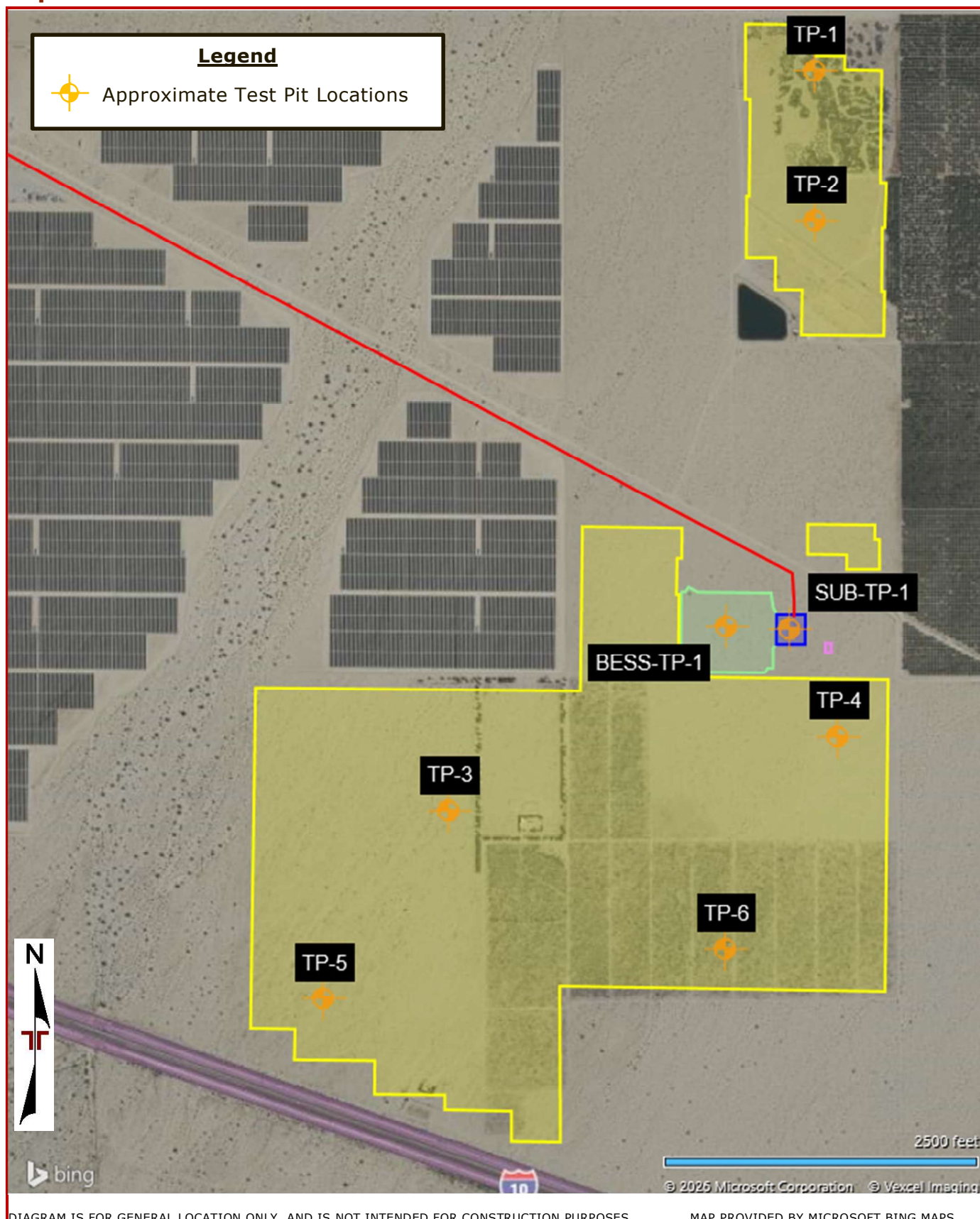


DIAGRAM IS FOR GENERAL LOCATION ONLY AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

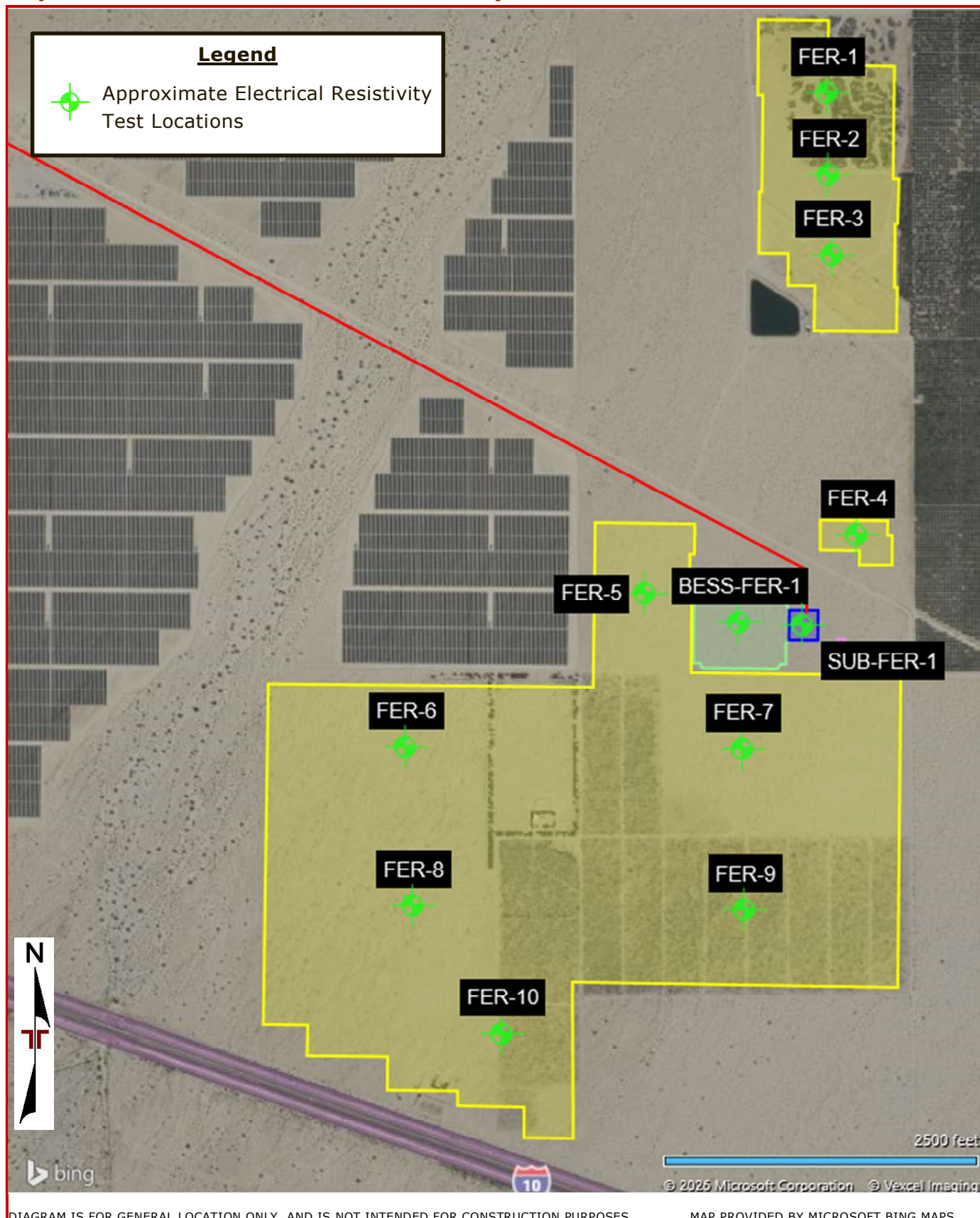
Geotechnical Engineering Report

Savira Solar ■ Desert Center, CA

February 26, 2026 ■ Terracon Project No. CB255153



Exploration Plan – Electrical Resistivity Tests



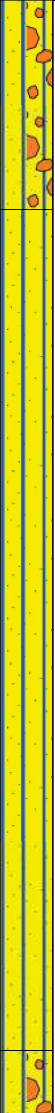
Exploration and Laboratory Results

Contents:

Boring Logs (32 pages)
Test Pit Logs (8 pages)
Percolation Test Results (6 pages)
Laboratory Testing Procedures
Atterberg Limits
Consolidation (2 pages)
Direct Shear (3 pages)
Modified Proctor (10 pages)
California Bearing Ratio (8 pages)
Corrosivity (8 pages)
Thermal Resistivity (6 Pages)

Note: All attachments are one page unless noted above.

BORING LOG NO. B-1

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
	2.5	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown	583.0	583.0									
		medium dense	580.5	580.5	X	18	6-10-13 N = 23						
	5.0	SILTY SAND (SM) , trace gravel, brown, dense	578.0	578.0	X	18	15-20-40	1.3	110.2	18.8	NP	NP	NP
					X	18	14-18-21 N = 39						
	10.0	medium dense, sample disturbed	573.0	573.0	X	18	14-20-30	1.1					
					X	18	12-14-18 N = 32						
	15.0	dense	568.0	568.0	X	5	50/5"						
	20.0	very dense	563.0	563.0	X								
	25.0	SILTY SAND WITH GRAVEL (SM) , brown, medium dense	558.0	558.0	X	18	6-10-6 N = 16						
		Boring Terminated at 26.5 Ft											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/24/2025

Boring Completed

12/24/2025

BORING LOG NO. B-2

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)
				599.0					
		SILTY SAND (SM) , fine to coarse grained sand, brown							
	2.5	medium dense		596.5					
						18	20-18-22	4.6	114.2
			5			18	6-12-15 N = 27		
	7.5	very dense		591.5		11	28-50/5"	3.4	111.0
	10.0	trace gravel, medium dense	10	589.0		18	8-11-13 N = 24		
	15.0	dense	15	584.0		18	8-18-32 N = 50		
	20.0	light brown, very dense	20	579.0		18	16-30-40 N = 70		
	25.0	SILTY SAND WITH GRAVEL (SM) , light brown, dense	25	574.0		18	20-25-25 N = 50		
		Boring Terminated at 26.5 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/24/2025

Boring Completed

12/24/2025

BORING LOG NO. B-3

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
	2.5	SILTY SAND (SM) , fine to medium grained sand, brown		654.0									
				651.5									
		dense			X	18	2-14-30 N = 44						
	5.0	CLAYEY SAND (SC) , fine to coarse grained sand, reddish brown, dense	5	649.0		18	16-30-32	2.1	116.1	27.0	26	14	12
				646.5									
	7.5	SILTY SAND (SM) , reddish brown, medium dense, no recovery					6-8-10 N = 18						
				644.0									
	10.0	trace of caliche, trace gravel, very dense, disturbed sample	10		X	12	35-50/6"	1.4					
			15		X	9	23-50/3"						
	20.0	brown, medium dense	20	634.0		18	12-12-16 N = 28						
	25.0	light brown, very dense	25	629.0		18	26-40-50/6" N = 90						
		Boring Terminated at 26.5 Ft											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

01/05/2026

Boring Completed

01/05/2026

BORING LOG NO. B-4

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)
		SILTY SAND (SM) , light brown		626.0					
	2.5	medium dense, sample disturbed		623.5		18	8-13-17	0.4	
	5.0	brown and grayish green, dense	5	621.0		18	11-20-30 N = 50		
	7.5	light brown, medium dense		618.5		18	13-18-24	6.3	105.1
			10			18	8-9-12 N = 21		
	15.0	dense	15	611.0		18	12-18-15 N = 33		
	20.0	very dense	20	606.0		18	18-41-39 N = 80		
			25			12	18-50/6"		
		Boring Terminated at 26 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/22/2025

Boring Completed

12/22/2025

BORING LOG NO. B-5

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines
		POORLY GRADED SAND WITH SILT (SP-SM) , fine to coarse grained sand, brown		697.0						
	2.5	medium dense		694.5						
					X	18	6-8-10 N = 18			
			5		X	18	12-22-24	1.2	116.5	9.3
	7.5	trace of caliche, very dense		689.5						
					X	5	50/5"			
			10		X	9	26-5/3"	1.2	107.4	
			15		X	17	20-25-50/5"			
	20.0	trace gravel		677.0						
					X	18	20-20-32 N = 52			
	25.0	dense		672.0						
					X	18	9-8-22 N = 30			
		Boring Terminated at 26.5 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

01/08/2026

Boring Completed

01/08/2026

BORING LOG NO. B-6



1355 E Cooley Dr., Ste. C
Colton, CA 92324-3954

Surface Elevation:
676(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)
				676.0					
	2.5	SILTY SAND (SM) , trace gravel, fine to coarse grained sand, brown medium dense		673.5		18	10-14-20	1.0	111.2
			5			18	4-6-9 N = 15		
	7.5	dense		668.5		18	30-30-33	4.7	109.6
			10			18	15-17-20 N = 37		
	15.0	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown, very dense	15	661.0		18	12-30-26 N = 56		
	20.0	SILTY SAND (SM) , trace gravel, fine to coarse grained sand, brown, dense	20	656.0		18	7-15-18 N = 33		
	25.0	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM) , fine to coarse grained sand, brown, dense	25	651.0		18	13-16-16 N = 32		
		Boring Terminated at 26.5 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

01/05/2026

Boring Completed

01/05/2026

BORING LOG NO. B-7

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines
		POORLY GRADED SAND WITH SILT (SP-SM) , trace gravel, fine to coarse grained sand, brown		671.0						
	2.5	dense		668.5	X	18	14-19-19 N = 38			5.6
	5.0	very dense, sample disturbed	5	666.0	X	6	50/6"	2.2		
	7.5	dense		663.5	X	18	14-14-23 N = 37			
	10.0	very dense	10	661.0	X	10	20-50/4"	1.9	109.7	
			15		X	18	11-26-34 N = 60			
	20.0	dense	20	651.0	X	18	8-15-17 N = 32			
	25.0	very dense	25	646.0	X	18	14-24-40 N = 64			
		Boring Terminated at 26.5 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

01/06/2026

Boring Completed

01/06/2026

BORING LOG NO. B-8

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines
		SILTY SAND (SM) , fine to coarse grained sand, brown		717.0						
	2.5	medium dense		714.5		18	12-24-32	2.7	114.5	22.0
	5.0	dense	5	712.0		18	10-12-20 N = 32			
	7.5	trace gravel, light brown, very dense, sample disturbed		709.5		6	50/6"	1.0		
	10.0	medium dense	10	707.0		18	7-12-16 N = 28			
	15.0	very dense	15	702.0		12	18-50/6"			
	20.0	no recovery	20	697.0			18-23-38 N = 61			
	24.5	no recovery		692.5						
		Boring Terminated at 25.2 Ft	25			2	50/2"			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-25.2 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig
Subcontractor - CME-55

Hammer Type
Automatic

Driller
2R Drilling

Logged By
EO

Boring Started
01/08/2026

Boring Completed
01/08/2026

BORING LOG NO. B-9

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Atterberg Limits		
										LL	PL	PI
	2.5	SILTY SAND (SM) , trace gravel, fine to coarse grained sand, brown		697.0								
		medium dense		694.5		18	7-10-15 N = 25			NP	NP	NP
			5			18	15-21-22	0.3	103.8			
	7.5	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown, medium dense		689.5		18	9-12-13 N = 25					
	10.0	SILTY SAND (SM) , trace gravel, fine to coarse grained sand, brown, very dense	10	687.0		15	10-38-50/3"	1.5	120.7			
	15.0	dense	15	682.0		18	16-18-18 N = 36					
	20.0	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown, very dense	20	677.0		18	16-39-45 N = 84					
			25			18	17-21-32 N = 53					
		Boring Terminated at 26.5 Ft										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

01/06/2026

Boring Completed

01/06/2026

BORING LOG NO. B-10

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)
		SILTY SAND (SM) , fine to coarse grained sand, brown		674.0					
	2.5	medium dense		671.5					
						18	7-12-13	4.1	110.2
	5.0	dense	5	669.0					
						18	7-20-28 N = 48		
	7.5	very dense, sample disturbed		666.5					
						17	24-35-50/5"	0.7	
	10.0	medium dense	10	664.0					
						18	9-13-14 N = 27		
	15.0	very dense	15	659.0					
						18	12-24-40 N = 64		
	20.0	dense, decomposed rock present	20	654.0					
						18	20-25-22 N = 47		
	25.0	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown, dense	25	649.0					
						18	13-19-21 N = 40		
		Boring Terminated at 26.5 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig
Subcontractor - CME-55

Hammer Type
Automatic

Driller
2R Drilling

Logged By
EO

Boring Started
01/06/2026

Boring Completed
01/06/2026

BORING LOG NO. B-11

Surface Elevation:
717(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines
		POORLY GRADED SAND WITH SILT (SP-SM) , light brown		717.0						
	2.5	medium dense		714.5	X	18	9-12-16 N = 28			11.6
	5.0	trace of caliche, brown, very dense	5	712.0	X	16	7-22-50/4"	2.0	114.7	
	7.5	no recovery		709.5			50/6"			
	10.0	no recovery	10	707.0			50/4"			
	15.0		15	702.0	X	5	50/5"			
		SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown and gray, very dense, pebbles present								
	20.0		20	697.0	X	18	12-22-42 N = 64			
		SILTY SAND (SM) , trace gravel, fine to coarse grained sand, brown and reddish brown, very dense, pebbles present								
			25		X	18	28-32-32 N = 64			
		Boring Terminated at 26.5 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig
Subcontractor - CME-55

Hammer Type
Automatic

Driller
2R Drilling

Logged By
EO

Boring Started
01/07/2026

Boring Completed
01/07/2026

BORING LOG NO. B-12



1355 E Cooley Dr., Ste. C
Colton, CA 92324-3954

Surface Elevation:
718(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)
				718.0					
	2.5	SILTY SAND (SM) , trace gravel, fine to coarse grained sand, brown and black medium dense		715.5		18	19-22-32	0.7	115.9
	5.0	brown, dense	5	713.0		18	7-17-24 N = 41		
	7.5	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown, very dense, sample disturbed		710.5		11	25-50/5"	0.7	
	10.0	SILTY SAND (SM) , trace gravel, fine to coarse grained sand, brown, very dense	10	708.0		11	23-50/5"		
	15.0	dense	15	703.0		18	17-20-24 N = 44		
			20			18	17-19-25 N = 44		
			25			18	12-20-22 N = 42		
		Boring Terminated at 26.5 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

01/07/2026

Boring Completed

01/07/2026

BORING LOG NO. B-13

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
		POORLY GRADED SAND WITH SILT (SP-SM) , fine to coarse grained sand, brown		733.0									
	2.5	medium dense		730.5		18	2-5-12 N = 17			8.0	NP	NP	NP
	5.0	fine to medium grained sand	5	728.0		18	8-18-38	4.8	109.3				
						18	9-11-12 N = 23						
	10.0	fine to coarse grained sand, dense	10	723.0		18	16-32-44	2.7	109.1				
	15.0	very dense	15	718.0		18	9-24-43 N = 67						
						18	6-24-50/6" N = 74						
	25.0	dense	25	708.0		18	8-16-34 N = 50						
		Boring Terminated at 26.5 Ft											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

01/07/2026

Boring Completed

01/07/2026

BORING LOG NO. BESS-1

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines
		SILTY SAND (SM) , light brown		647.0						
	2.5	very dense		644.5						
						17	16-32-50/5"	2.1	123.3	23.2
	5.0	sample disturbed	5			10	24-50/4"	2.5		
	7.5	sample disturbed		639.5		6	50/6"	0.6		
	10.0	dense, sample disturbed	10	637.0		18	12-21-50/6"	0.4		
			15			18	8-12-22 N = 34			
	20.0	very dense	20	627.0		16	12-36-50/4"			
	25.0	dense	25	622.0		18	9-22-18 N = 40			
		Boring Terminated at 26.5 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/23/2025

Boring Completed

12/23/2025

BORING LOG NO. BESS-2

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
		POORLY GRADED SAND WITH SILT (SP-SM) , fine to coarse grained sand, brown		644.0									
	2.5	very dense		641.5									
						12	26-50/6"	2.1	105.4	10.2	NP	NP	NP
	5.0	medium dense, no recovery	5	639.0			6-20-23						
	7.5	dense, sample disturbed		636.5		18	12-12-25	1.9					
	10.0	trace gravel, medium dense, sample disturbed	10	634.0		18	11-23-34	1.0					
	15.0	dense	15	629.0		18	16-22-24 N = 46						
	20.0	very dense	20	624.0		9	42-50/3"						
			25			18	20-32-48 N = 80						
		Boring Terminated at 26.5 Ft											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/31/2025

Boring Completed

12/31/2025

BORING LOG NO. BESS-3

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines
		POORLY GRADED SAND WITH SILT (SP-SM) , trace gravel, light brown		652.0						
	2.5	medium dense		649.5		18	9-16-18	0.4	108.9	8.7
	5.0	very dense, sample disturbed	5	647.0		12	20-50/6"	1.1		
	7.5	sample disturbed		644.5		5	50/5"	1.8		
	10.0	sample disturbed	10	642.0		11	36-50/5"	1.9		
	15.0	medium dense, no recovery	15	637.0			6-11-13 N = 24			
	20.0	very dense	20	632.0		12	26-50/6"			
			25			18	22-23-29 N = 52			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/24/2025

Boring Completed

12/24/2025

BORING LOG NO. BESS-3

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines
				624.0						
		very dense (continued)								
	30.0	dense	30	622.0	X	18	13-16-19 N = 35			9.7
	35.0	very dense	35	617.0	X	18	36-41-47 N = 88			
	40.0	brown	40	612.0	X	18	16-22-30 N = 52			
			45		X	11	36-50/5"			
	50.0	<u>SILTY SAND (SM)</u> , trace gravel, light brown, dense	50	602.0	X	18	13-17-21 N = 38			12.2
		Boring Terminated at 51.5 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-51.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/24/2025

Boring Completed

12/24/2025

BORING LOG NO. BESS-4

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
		POORLY GRADED SAND WITH SILT (SP-SM) , fine to coarse grained sand, brown		649.0									
	2.5	medium dense		646.5						6.5	NP	NP	NP
						18	16-16-28	0.8	113.7				
	5.0	dense, no recovery	5	644.0			20-30-40						
	7.5	trace gravel		641.5		18	7-24-36	0.4	111.3				
	10.0	very dense, no recovery	10	639.0			24-50/4"						
	15.0	dense	15	634.0		18	14-18-26 N = 44						
	20.0	very dense	20	629.0		10	28-50/4"						
			25			18	15-26-26 N = 52						
		Boring Terminated at 26.5 Ft											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-26.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/31/2025

Boring Completed

12/31/2025

BORING LOG NO. SUB-1

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
		SILTY SAND (SM) , fine to medium grained sand, brown		642.0									
	2.5	medium dense		639.5		18	5-9-14 N = 23			24.9	NP	NP	NP
	5.0	trace gravel, fine to coarse grained sand	5	637.0		18	9-20-35	2.7	105.6				
	7.5	light brown		634.5		18	6-6-8 N = 14						
	10.0	dense, no recovery	10	632.0			15-21-39						
	15.0	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, light brown, very dense	15	627.0		18	15-26-34 N = 60						
	20.0	SILTY SAND (SM) , trace gravel, fine to coarse grained sand, light brown, very dense	20	622.0		17	17-34-50/5"						
	25.0	dense	25	617.0		18	20-22-24 N = 46						

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-51.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/30/2025

Boring Completed

12/30/2025

BORING LOG NO. SUB-1

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
		dense (continued)		614.0									
			30		X	18	11-20-24 N = 44						
	35.0	very dense	35	607.0	X	18	25-35-40 N = 75			15.7			
	40.0	dense	40	602.0	X	18	18-19-24 N = 43						
	45.0	decomposed granite present	45	597.0	X	18	18-20-23 N = 43						
	50.0	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, light brown, very dense	50	592.0	X	18	18-21-30 N = 51						
		Boring Terminated at 51.5 Ft											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-51.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/30/2025

Boring Completed

12/30/2025

BORING LOG NO. SUB-2

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
	2.5	POORLY GRADED SAND WITH SILT (SP-SM), trace of caliche, very dense, sample disturbed	639.5	642.0		5	50/5"	0.5		7.8	NP	NP	NP
	5.0	SILTY SAND (SM), trace gravel, fine to coarse grained sand, brown, dense	637.0		X	18	12-12-22 N = 34						
	7.5	SILTY SAND WITH GRAVEL (SM), fine to coarse grained sand, brown, medium dense	634.5		X	18	7-21-35	3.3	114.4				
	10.0	very dense, diorite present	632.0		X	18	32-50/6"						
	15.0				X	18	17-23-35 N = 58			21.5			
	20.0	dense	622.0		X	18	20-20-25 N = 45						
	25.0	POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, fine to coarse grained sand, brown, dense	617.0		X	18	20-22-26 N = 48						

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-51.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/30/2025

Boring Completed

12/30/2025

BORING LOG NO. SUB-2

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
	30.0	POORLY GRADED SAND WITH SILT (SP-SM) , trace gravel, fine to coarse grained sand, brown, dense (continued) very dense	30	612.0	X	18	16-26-26 N = 52			11.9			
	35.0	dense	35	607.0	X	18	12-20-30 N = 50						
	40		40		X	18	18-20-20 N = 40						
	45.0	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown, very dense, decomposed igneous rock present	45	597.0	X	12	33-50/6"						
	50.0	SILTY SAND (SM) , trace gravel, fine to coarse grained sand, brown, dense	50	592.0	X	18	16-24-25 N = 49						
		Boring Terminated at 51.5 Ft											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-51.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/30/2025

Boring Completed

12/30/2025

BORING LOG NO. OM-1

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Percent Fines	Atterberg Limits		
										LL	PL	PI
		POORLY GRADED SAND WITH SILT (SP-SM) , light brown		640.0								
	2.5	dense, sample disturbed		637.5					6.4	NP	NP	NP
						18	15-23-27	1.5				
	5.0	very dense, no recovery	5	635.0			34-50/5"					
	7.5	no recovery		632.5			50/6"					
	10.0	sample disturbed	10	630.0		12	22-50/6"	1.0	6.9			
			15			17	16-34-50/5"					
	20.0	brown	20	620.0		18	14-32-35 N = 67					
	25.0	dense	25	615.0		18	12-22-25 N = 47					

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-51.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/22/2025

Boring Completed

12/22/2025

BORING LOG NO. OM-1

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Percent Fines	Atterberg Limits		
										LL	PL	PI
		dense (continued)	30	612.0	X	18	12-13-21 N = 34					
			35		X	18	12-17-25 N = 42					
	40.0	very dense	40	600.0		2	50/2"					
	45.0	decomposed granite present	45	595.0	X	18	18-24-40 N = 64					
	50.0	dense	50	590.0	X	18	17-20-21 N = 41					
		Boring Terminated at 51.5 Ft										

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-51.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

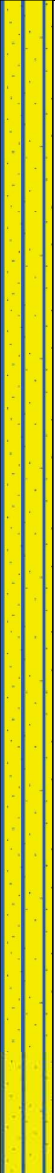
Boring Started

12/22/2025

Boring Completed

12/22/2025

BORING LOG NO. TL-1

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
		SILTY SAND (SM) , light brown		635.0									
	2.5	medium dense, sample disturbed		632.5		18	16-18-27	0.4		15.5	NP	NP	NP
	5.0	sample disturbed	5	630.0		18	10-20-29	0.5					
	7.5	dense, decomposed granite present		627.5		17	21-24-50/5"	1.9	112.6				
	10.0	medium dense, no recovery	10	625.0			12-21-30						
	15.0	dense	15	620.0		18	18-22-24 N = 46						
	20.0	very dense, decomposed rock present	20	615.0		18	9-35-50/5"						
	25.0	dense	25	610.0		18	15-23-25 N = 48			17.1			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-51.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/23/2025

Boring Completed

12/23/2025

BORING LOG NO. TL-1

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines	Atterberg Limits		
											LL	PL	PI
				607.0									
		dense (continued)											
	30.0	medium dense	30	605.0	X	18	11-13-16 N = 29						
	35.0	POORLY GRADED SAND WITH SILT (SP-SM) , light brown, dense	35	600.0	X	18	13-15-19 N = 34			6.8			
	40.0	very dense	40	595.0	X	18	21-32-24 N = 56						
	45.0	dense	45	590.0	X	18	13-21-29 N = 50						
	50.0	very dense	50	585.0	X	18	24-27-38 N = 65						
		Boring Terminated at 51.5 Ft											

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-51.5 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Hammer Type

Automatic

Driller

2R Drilling

Logged By

EO

Boring Started

12/23/2025

Boring Completed

12/23/2025



Latitude: 33.7145° Longitude: -115.2582°

BORING LOG NO. P-1

Surface Elevation:
566(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Percent Fines
				566.0					
	1.5	POORLY GRADED SAND WITH SILT (SP-SM) , trace gravel, fine to coarse grained sand, brown		564.5					
		medium dense, sample disturbed				18	26-28-30	0.6	7.6
		Boring Terminated at 3 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations
Groundwater not encountered

Advancement Method
0-3 Ft. 8" Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
Subcontractor - CME-55

Driller
2R Drilling

Logged By
EO

Boring Started
12/29/2025

Boring Completed
12/29/2025



Latitude: 33.7142° Longitude: -115.2576°

BORING LOG NO. P-2

Surface Elevation:
568(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines
	3.5	SILTY SAND (SM) , fine to coarse grained sand, brown		568.0						
		medium dense		564.5						
						18	30-25-22	3.3	110.5	19.8
		Boring Terminated at 5 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations
Groundwater not encountered

Advancement Method
0-5 Ft. 8" Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
Subcontractor - CME-55

Driller
2R Drilling

Logged By
EO

Boring Started
12/29/2025

Boring Completed
12/29/2025

Latitude: 33.7029° Longitude: -115.2616°

BORING LOG NO. P-3

1355 E Cooley Dr., Ste. C
Colton, CA 92324-3954

Surface Elevation:
640(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines
	1.5	SILTY SAND (SM) , orangish brown		640.0						
		medium dense		638.5						
						18	7-20-34	3.1	111.6	30.1
		Boring Terminated at 3 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (if any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-3 Ft. 8" Hollow Stem Auger

Abandonment Method

Boring backfilled with auger cuttings upon completion.

Drill Rig

Subcontractor - CME-55

Driller

2R Drilling

Logged By

EO

Boring Started

12/23/2025

Boring Completed

12/23/2025



Latitude: 33.7026° Longitude: -115.2608°

BORING LOG NO. P-4

Surface Elevation:
639(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Percent Fines
		POORLY GRADED SAND WITH SILT (SP-SM) , _h brown		639.0				
	3.5	loose, no recovery		635.5			3-4-5	11.3
		Boring Terminated at 5 Ft						

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations
Groundwater not encountered

Advancement Method
0-5 Ft. 8" Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
Subcontractor - CME-55

Driller
2R Drilling

Logged By
EO

Boring Started
12/23/2025

Boring Completed
12/23/2025



Latitude: 33.7015° Longitude: -115.2581°

BORING LOG NO. P-5

Surface Elevation:
634(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Dry Unit Weight (pcf.)	Percent Fines
	1.5	POORLY GRADED SAND WITH SILT (SP-SM), light brown		634.0		18	13-22-24	2.4	108.0	11.8
		medium dense		632.5						
		Boring Terminated at 3 Ft								

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations
Groundwater not encountered

Advancement Method
0-3 Ft. 8" Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
Subcontractor - CME-55

Driller
2R Drilling

Logged By
EO

Boring Started
12/22/2025

Boring Completed
12/22/2025



Latitude: 33.7011° Longitude: -115.2576°

BORING LOG NO. P-6

Surface Elevation:
637(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type	Recovery (In.)	Field Test Results	Water Content (%)	Percent Fines
		SILTY SAND (SM) , light brown		637.0					
	3.5	medium dense, sample disturbed		633.5		18	10-13-20	2.0	18.6
		Boring Terminated at 5 Ft							

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations
Groundwater not encountered

Advancement Method
0-5 Ft. 8" Hollow Stem Auger

Abandonment Method
Boring backfilled with auger cuttings upon completion.

Drill Rig
Subcontractor - CME-55

Driller
2R Drilling

Logged By
EO

Boring Started
12/22/2025

Boring Completed
12/22/2025



Longitude: -115.2591°

TEST PIT LOG NO. TP-2

Surface Elevation:
592(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type
	5.0	<u>SILTY SAND WITH GRAVEL (SM)</u> , fine to coarse grained sand, light brown, cobbles 3-7" present reddish brown	5	592.0	
		Test Pit Terminated at 10 Ft			

01/09/2026



TEST PIT LOG NO. TP-3

Graphic Log Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type
	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown, cobbles 3-10" present	5	696.0	
	Test Pit Terminated at 10 Ft			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations
Groundwater not encountered

Advancement Method
0-10 Ft. Backhoe

Abandonment Method
Test pit backfilled with excavated material upon completion.

Drill Rig
Subcontractor - Excavator
Driller
Lourenco

Logged By
EO
Boring Started
01/09/2026
Boring Completed
01/09/2026



Latitude: 33.6991° Longitude: -115.2585°

TEST PIT LOG NO. TP-4

Surface Elevation:
650(Ft) +/-

Graphic Log Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type
	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown, mix of igneous and metamorphic rocks, 3-7" cobbles present	5	650.0	
	Test Pit Terminated at 10 Ft			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations
Groundwater not encountered

Advancement Method
0-10 Ft. Backhoe

Abandonment Method
Test pit backfilled with excavated material upon completion.

Drill Rig
Subcontractor - Excavator

Driller
Lourenco

Logged By
EO

Boring Started
01/09/2026

Boring Completed
01/09/2026



1355 E Cooley Dr., Ste. C
Colton, CA 92324-3954

Latitude: 33.6934° Longitude: -115.2720°

TEST PIT LOG NO. TP-5

Surface Elevation:
730(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type
		SILTY SAND (SM) , trace gravel, fine to coarse grained sand, brown, cobbles 3-5" present	5	730.0	
		Test Pit Terminated at 10 Ft			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations
Groundwater not encountered

Advancement Method
0-10 Ft. Backhoe

Abandonment Method
Test pit backfilled with excavated material upon completion.

Drill Rig
Subcontractor - Excavator

Driller
Lourenco

Logged By
EO

Boring Started
01/09/2026

Boring Completed
01/09/2026

Latitude: 33.6944° Longitude: -115.2614°

TEST PIT LOG NO. TP-6

1355 E Cooley Dr., Ste. C
Colton, CA 92324-3954

Surface Elevation:
692(Ft) +/-

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type
	5.0	SILTY SAND (SM) , trace gravel, fine to coarse grained sand, reddish brown		692.0	
		SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, light brown, cobbles 3-6" present	5	687.0	
		Test Pit Terminated at 10 Ft			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes

Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations

Groundwater not encountered

Advancement Method

0-10 Ft. Backhoe

Abandonment Method

Test pit backfilled with excavated material upon completion.

Drill Rig

Subcontractor - Excavator

Driller

Laurenco

Logged By

EO

Boring Started

01/09/2026

Boring Completed

01/09/2026



TEST PIT LOG NO. BESS-TP-1

Graphic Log	Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type
		SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown, mix of igneous and metamorphic rocks, cobbles 3-7" present	5	648.0	
		Test Pit Terminated at 10 Ft			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations
Groundwater not encountered

Advancement Method
0-10 Ft. Backhoe

Abandonment Method
Test pit backfilled with excavated material upon completion.

Drill Rig
Subcontractor - Excavator

Driller
Lourenco

Logged By
EO

Boring Started
01/09/2026

Boring Completed
01/09/2026



TEST PIT LOG NO. SUB-TP-1

Graphic Log Lithology Depth (Ft.)	Material Description	Depth (Ft.)	Elevation (Ft.)	Sample Type
	SILTY SAND WITH GRAVEL (SM) , fine to coarse grained sand, brown, mix of igneous and metamorphic rocks, cobbles 3-10" present	5	642.0	
	Test Pit Terminated at 10 Ft			

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).
See Supporting Information for explanation of symbols and abbreviations.

Notes
Elevation Reference: Elevation obtained using Google Earth Pro

Water Level Observations
Groundwater not encountered

Advancement Method
0-10 Ft. Backhoe

Abandonment Method
Test pit backfilled with excavated material upon completion.

Drill Rig
Subcontractor - Excavator
Driller
Lourenco

Logged By
EO
Boring Started
01/09/2026
Boring Completed
01/09/2026

PERCOLATION TEST DATA

BORING NUMBER: P-1
LOT No: N/A
TRACT No: N/A

CLIENT: Clearway Energy Group
PROJECT: Savira Solar

DATE OF DRILLING: December 23, 2025
DATE OF PRESOAK: February 27, 2026
DATE OF TEST: February 27, 2026
TESTED BY: MB

DEPTH BEFORE (ft.): 3.0
DEPTH AFTER (ft.): 3.0
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
6.75	6.75	17.5	36.0	18.5	36.0	36.0	164.4	29.23
6.5	13.25	16.5	36.0	19.5	36.0	36.0	180.0	30.64
6.5	19.75	13.3	36.0	22.8	36.0	36.0	210.0	31.40
9.2	28.95	14.8	36.0	21.3	36.0	36.0	138.6	21.95
6.5	35.45	15.8	36.0	20.3	36.0	36.0	186.9	30.83
6.75	42.2	16.0	36.0	20.0	36.0	36.0	177.8	29.63
7.5	49.7	14.5	36.0	21.5	36.0	36.0	172.0	26.98
7.33	57.03	13.0	36.0	23.0	36.0	36.0	188.3	27.89

Average of last 3 readings:

180.13 27.44

PERCOLATION TEST DATA

BORING NUMBER: P-2
LOT No: N/A
TRACT No: N/A

CLIENT: Clearway Energy Group
PROJECT: Savira Solar

DATE OF DRILLING: December 23, 2025
DATE OF PRESOAK: February 27, 2026
DATE OF TEST: February 27, 2026
TESTED BY: MB

DEPTH BEFORE (ft.): 5.0
DEPTH AFTER (ft.): 5.0
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
25	25	36.0	52.5	16.5	60.0	60.0	39.6	4.46
25	50	32.0	50.8	18.8	60.0	60.0	45.0	4.36
10	60	33.5	44.8	11.3	60.0	60.0	67.5	5.90
10	70	36.0	45.0	9.0	60.0	60.0	54.0	5.02
10	80	35.5	44.8	9.3	60.0	60.0	55.5	5.07
10	90	35.0	44.3	9.3	60.0	60.0	55.5	4.96
10	100	35.0	44.3	9.3	60.0	60.0	55.5	4.96
10	110	34.8	44.0	9.3	60.0	60.0	55.5	4.91

Average of last 3 readings: 55.50 4.93

PERCOLATION TEST DATA

BORING NUMBER: P-3
LOT No: N/A
TRACT No: N/A

CLIENT: Clearway Energy Group
PROJECT: Savira Solar

DATE OF DRILLING: December 23, 2025
DATE OF PRESOAK: February 26, 2026
DATE OF TEST: February 26, 2026
TESTED BY: CR

DEPTH BEFORE (ft.): 3.0
DEPTH AFTER (ft.): 3.0
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
6	6	3.0	35.0	32.0	36.0	36.0	320.0	33.68
7.5	13.5	3.0	35.0	32.0	36.0	36.0	256.0	26.95
8	21.5	3.0	35.0	32.0	36.0	36.0	240.0	25.26
10	31.5	3.0	35.0	32.0	36.0	36.0	192.0	20.21
10	41.5	3.0	34.0	31.0	36.0	36.0	186.0	19.08
10	51.5	3.0	34.0	31.0	36.0	36.0	186.0	19.08
10	61.5	3.0	33.5	30.5	36.0	36.0	183.0	18.53
10	71.5	3.0	33.5	30.5	36.0	36.0	183.0	18.53

Average of last 3 readings:

183.00 18.53

PERCOLATION TEST DATA

BORING NUMBER: P-5
LOT No: N/A
TRACT No: N/A

CLIENT: Clearway Energy Group
PROJECT: Savira Solar

DATE OF DRILLING: December 22, 2025
DATE OF PRESOAK: February 26, 2026
DATE OF TEST: February 26, 2026
TESTED BY: CR

DEPTH BEFORE (ft.): 3.0
DEPTH AFTER (ft.): 3.0
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
12	12	5.5	35.0	29.5	36.0	36.0	147.5	16.62
12.75	24.75	5.5	35.0	29.5	36.0	36.0	138.8	15.64
10	34.75	5.5	30.0	24.5	36.0	36.0	147.0	14.52
10	44.75	5.5	28.0	22.5	36.0	36.0	135.0	12.71
10	54.75	5.5	27.5	22.0	36.0	36.0	132.0	12.28
10	64.75	5.5	27.5	22.0	36.0	36.0	132.0	12.28
10	74.75	5.5	27.0	21.5	36.0	36.0	129.0	11.86
10	84.75	5.5	27.0	21.5	36.0	36.0	129.0	11.86

Average of last 3 readings:

129.00 11.86

PERCOLATION TEST DATA

BORING NUMBER: P-6
LOT No: N/A
TRACT No: N/A

CLIENT: Clearway Energy Group
PROJECT: Savira Solar

DATE OF DRILLING: December 22, 2025
DATE OF PRESOAK: February 26, 2026
DATE OF TEST: February 26, 2026
TESTED BY: CR

DEPTH BEFORE (ft.): 5.0
DEPTH AFTER (ft.): 5.0
PVC PIPE DIA. (in.): 3.0
PERC HOLE DIA. (in.): 8.0

Time Interval (min.)	Total Elapsed Time (min.)	Initial Water Level (in.)	Final Water Level (in.)	Change in Water Level (in.)	Initial Hole Depth (in.)	Final Hole Depth (in.)	Percolation Rate (in/hr)	Infiltration rate (Porchet Method) (in/hr)
17	17	7.5	59.0	51.5	60.0	60.0	181.8	12.64
18	35	7.5	59.0	51.5	60.0	60.0	171.7	11.94
10	45	7.5	47.5	40.0	60.0	60.0	240.0	13.91
10	55	7.5	45.0	37.5	60.0	60.0	225.0	12.59
10	65	7.5	44.0	36.5	60.0	60.0	219.0	12.08
10	75	7.5	43.0	35.5	60.0	60.0	213.0	11.59
10	85	7.5	42.5	35.0	60.0	60.0	210.0	11.35
10	95	7.5	42.8	35.3	60.0	60.0	211.5	11.47

Average of last 3 readings: 210.75 11.41

Laboratory Testing Procedures

The project engineer reviewed the field data and assigned laboratory tests. The laboratory testing program included the following types of tests:

ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D7263 Standard Test Methods for Laboratory Determination of Dry Density (Unit Weight) of Soil Specimens

ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils

ASTM D1140 Standard Test Methods for Determining the Amount of Material Finer than 75- μ m (No. 200) Sieve in Soils by Washing

ASTM D4546 Standard Test Methods for One-Dimensional Swell or Collapse of Soils

ASTM D1883 Standard Test Methods for California Bearing Ratio (CBR) of Laboratory-Compacted Soils

ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort

ASTM D3080 Standard Test Method for Direct Shear Testing of Soils

The laboratory testing program also included review of soil samples by an engineer. Based on the results of our field and laboratory programs, we described and classified the soil samples in accordance with the Unified Soil Classification System.

Thermal Resistivity: Thermal resistivity tests were analyzed by Geotherm USA. Terracon collected six (6) bulk samples of subsurface materials obtained within proposed array areas. Each bulk sample had a Modified Proctor test performed, and each bulk sample was tested for thermal resistivity tests on samples remolded to content 85% (3 to 5 feet sample) of its respective Modified Proctor maximum dry density within the PV array area and 85% and 95% within the BESS and Substation areas. The percent compaction is based on comparing to the material's maximum dry density as determined by test method ASTM D1557 (Modified Proctor). Tests included a minimum of 6 readings, including optimum moisture content or as-received moisture (whichever is higher), totally dry condition, and 4 intermediate moisture contents.

Corrosivity Testing: Bulk samples of near surface soils were tested in the laboratory for the following properties in general accordance with the corresponding standards:

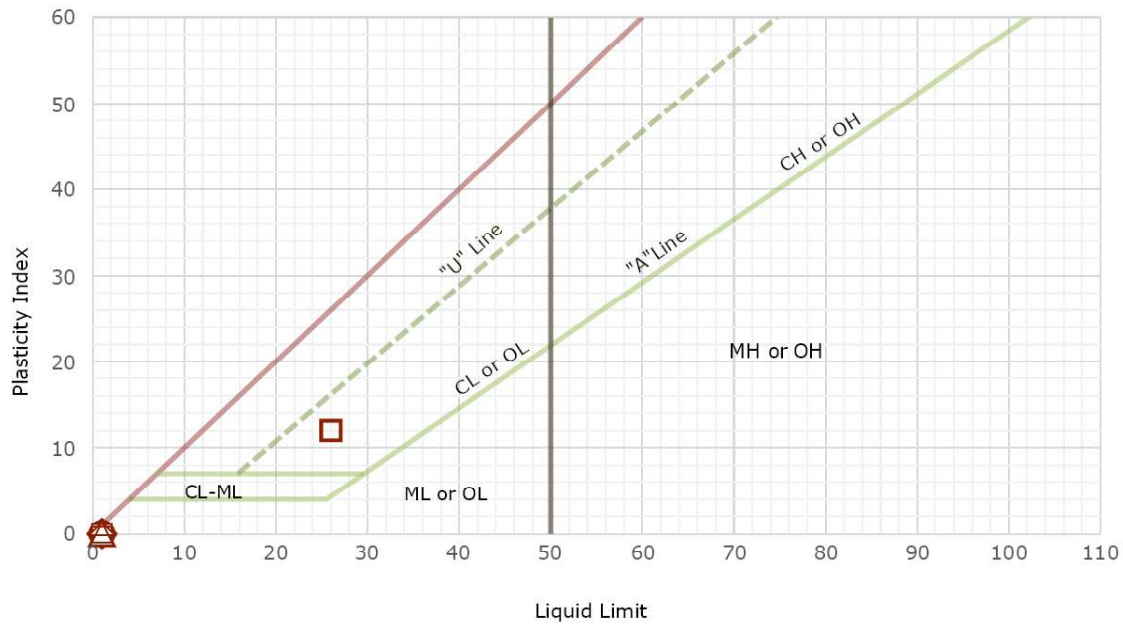
pH Analysis (ASTM G51)

Chloride (ASTM D512)

Sulfate (ASTM C1580)

Sulfide Content (AWWA 4500-S D)
Oxidation-Reduction Potential (ASTM G200)
Electrical Resistivity Testing (ASTM G187)

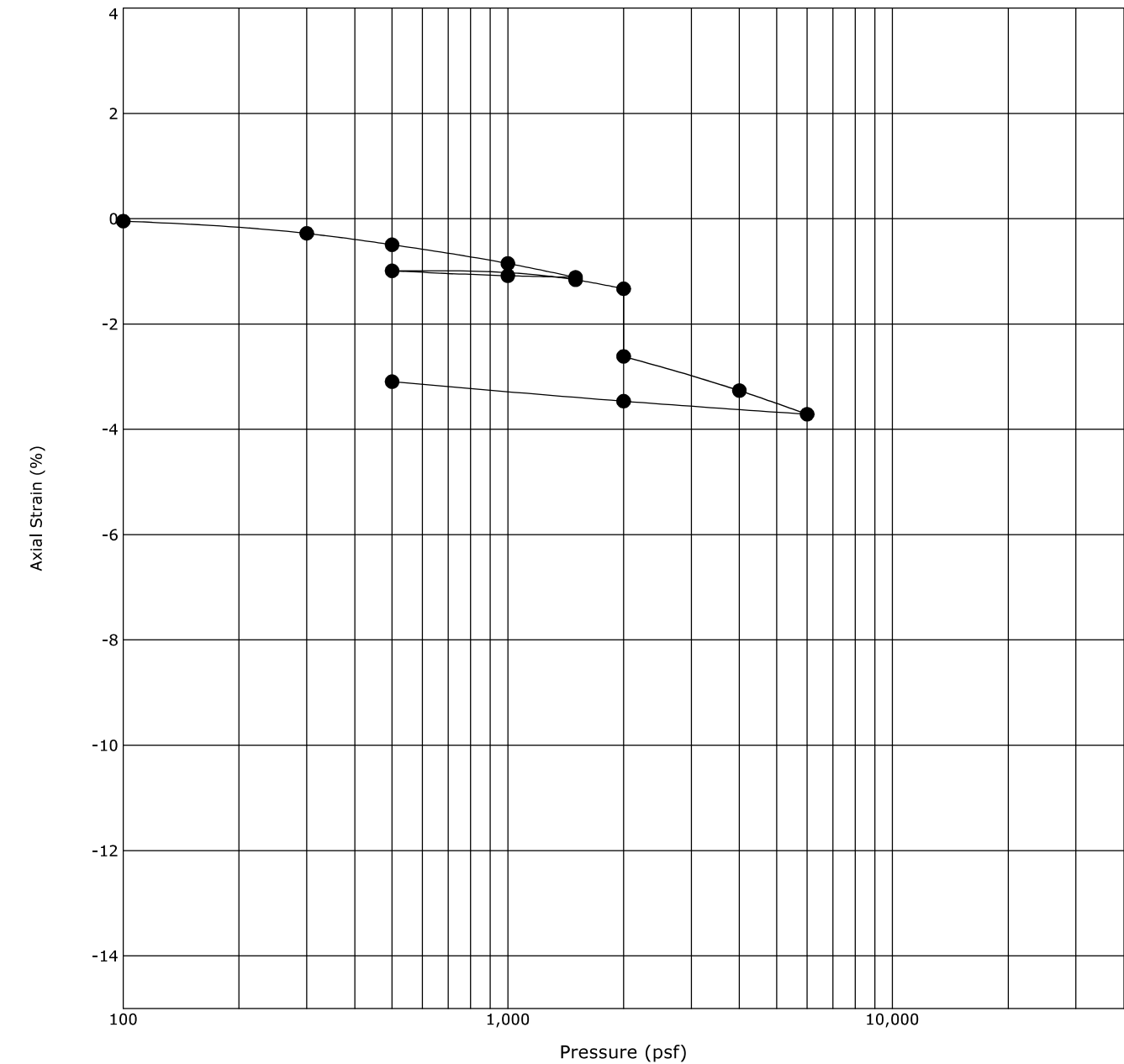
Atterberg Limit Results ASTM D4318



	Boring ID	Depth (Ft)	LL	PL	PI	Fines (%)	Description	USCS
■	B-1	5-6.5	NP	NP	NP	18.8	Silty Sand	SM
◆	SUB-1	2.5-4	NP	NP	NP		Silty Sand	SM
▲	SUB-2	0-2.5	NP	NP	NP		Poorly Graded Sand with Silt	SP-SM
●	SUB-2	0-2.5	NP	NP	NP		Poorly Graded Sand with Silt	SP-SM
□	B-3	5-6.5	26	14	12	27	Clayey Sand	SC
◇	B-9	0-5	NP	NP	NP		Silty Sand	SM
△	B-13	0-5	NP	NP	NP		Poorly Graded Sand with Silt	SP-SM
○	BESS-2	0-2.5	NP	NP	NP		Poorly Graded Sand with Silt	SP-SM
▢	BESS-4	0-2.5	NP	NP	NP		Poorly Graded Sand with Silt	SP-SM
◊	TL-1	0-5	NP	NP	NP		Silty Sand	SM
⚠	OM-1	0-2.5	NP	NP	NP		Poorly Graded Sand with Silt	SP-SM

One-Dimensional Swell or Collapse

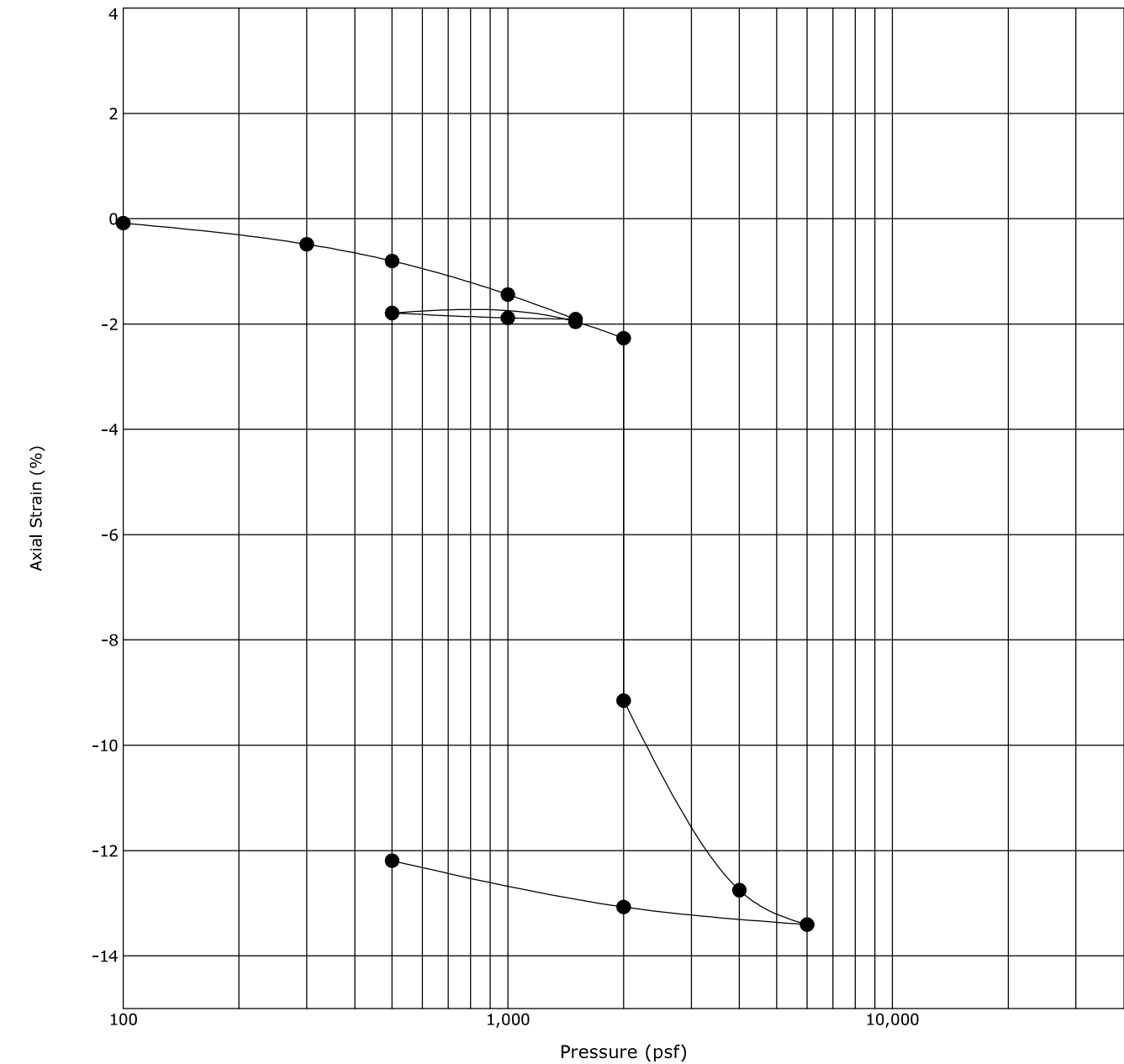
ASTM D2435



Boring ID		Depth (Ft)	Description	USCS	γ _d (pcf)	WC (%)
●	BESS-3	2.5 - 4	Poorly Graded Sand with Silt	SP-SM	109	0.4
Notes: Water added at 2,000 psf						

One-Dimensional Swell or Collapse

ASTM D2435



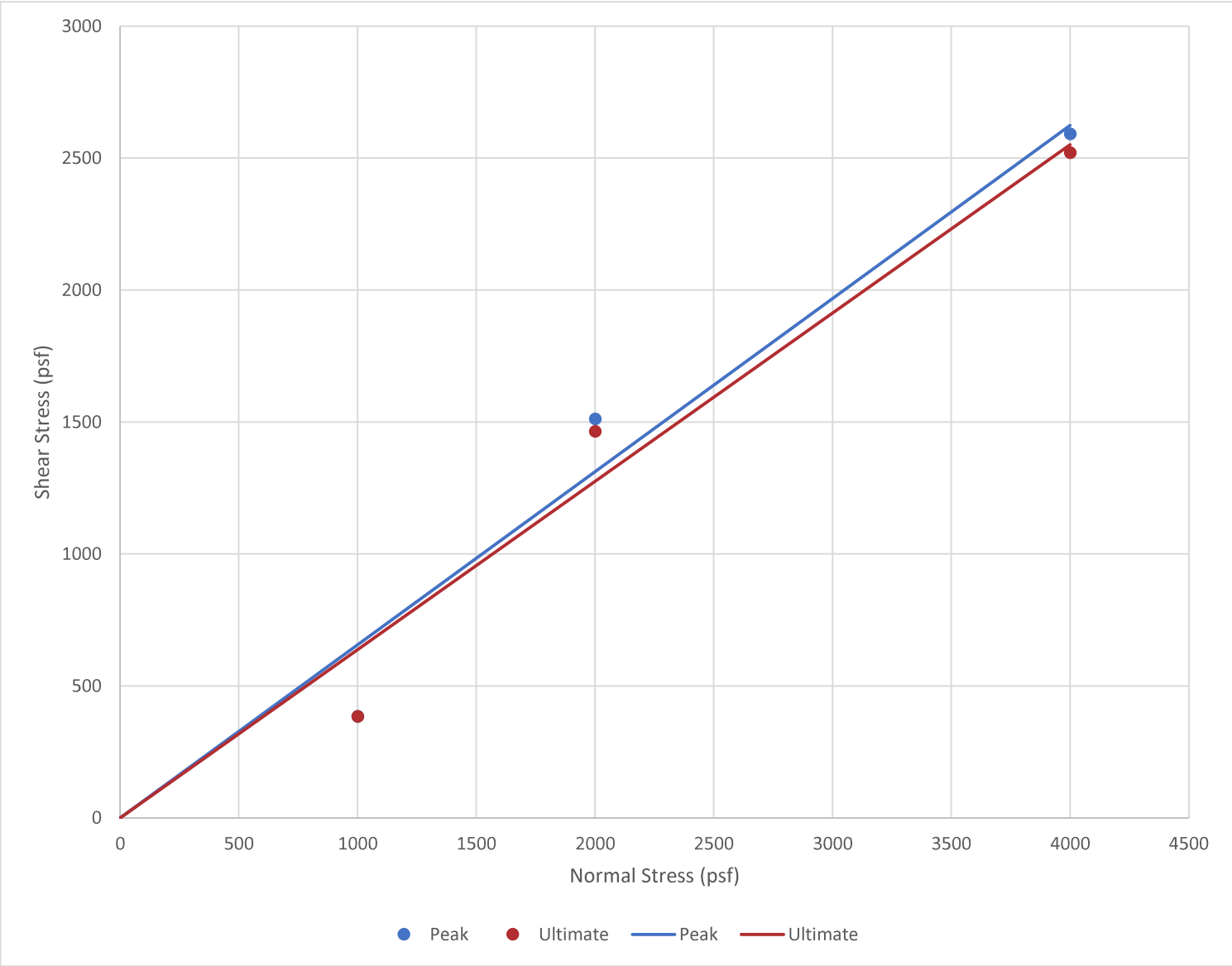
Boring ID		Depth (Ft)	Description	USCS	γ_d (pcf)	WC (%)
●	SUB-1	5 - 6.5	Silty Sand	SM	106	2.7
Notes: Water added at 2,000 psf;disturbed sample						

Direct Shear Test

ASTM D3080

Boring ID	Depth	Description	USCS	γ_d (pcf)	W(%)
B-2	2.5 - 4'	Silty Sand	SM	114	4.6

Normal Stress (psf)	Peak Shear Stress (psf)	Ultimate Shear Stress (psf)	Peak		Ultimate	
			ϕ°	C (psf)	ϕ°	C (psf)
1000	384	384	35.3	0	34.4	0
2000	1512	1464				
4000	2592	2520				

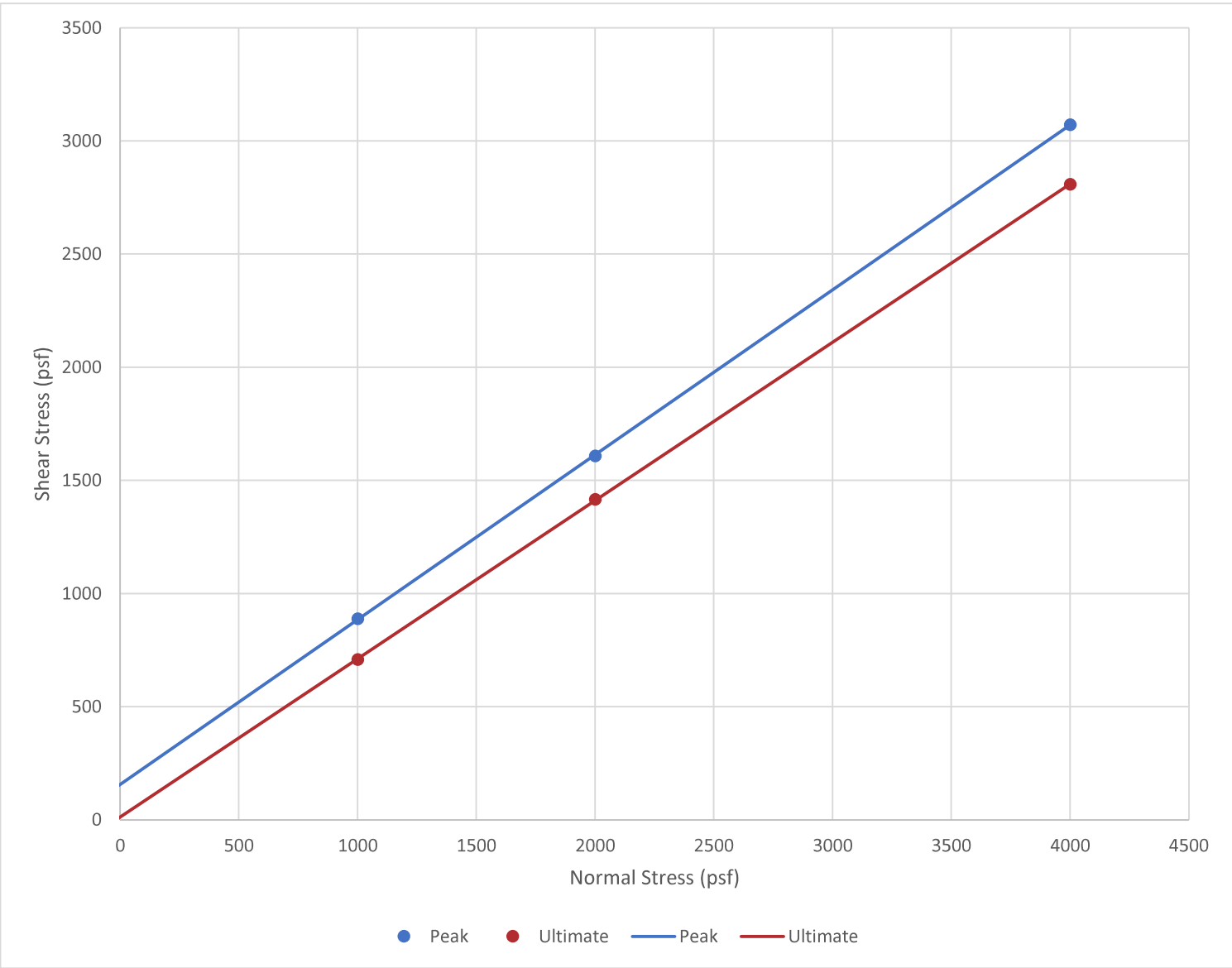


Direct Shear Test

ASTM D3080

Boring ID	Depth	Description	USCS	γ_d (pcf)	W(%)
SUB-2	7.5 - 9'	Poorly Graded Sand with Silt	SP-SM	114	3.3

Normal Stress (psf)	Peak Shear Stress (psf)	Ultimate Shear Stress (psf)	Peak		Ultimate	
			ϕ°	C (psf)	ϕ°	C (psf)
1000	888	708	36.1	156	35.0	12
2000	1608	1416				
4000	3072	2808				

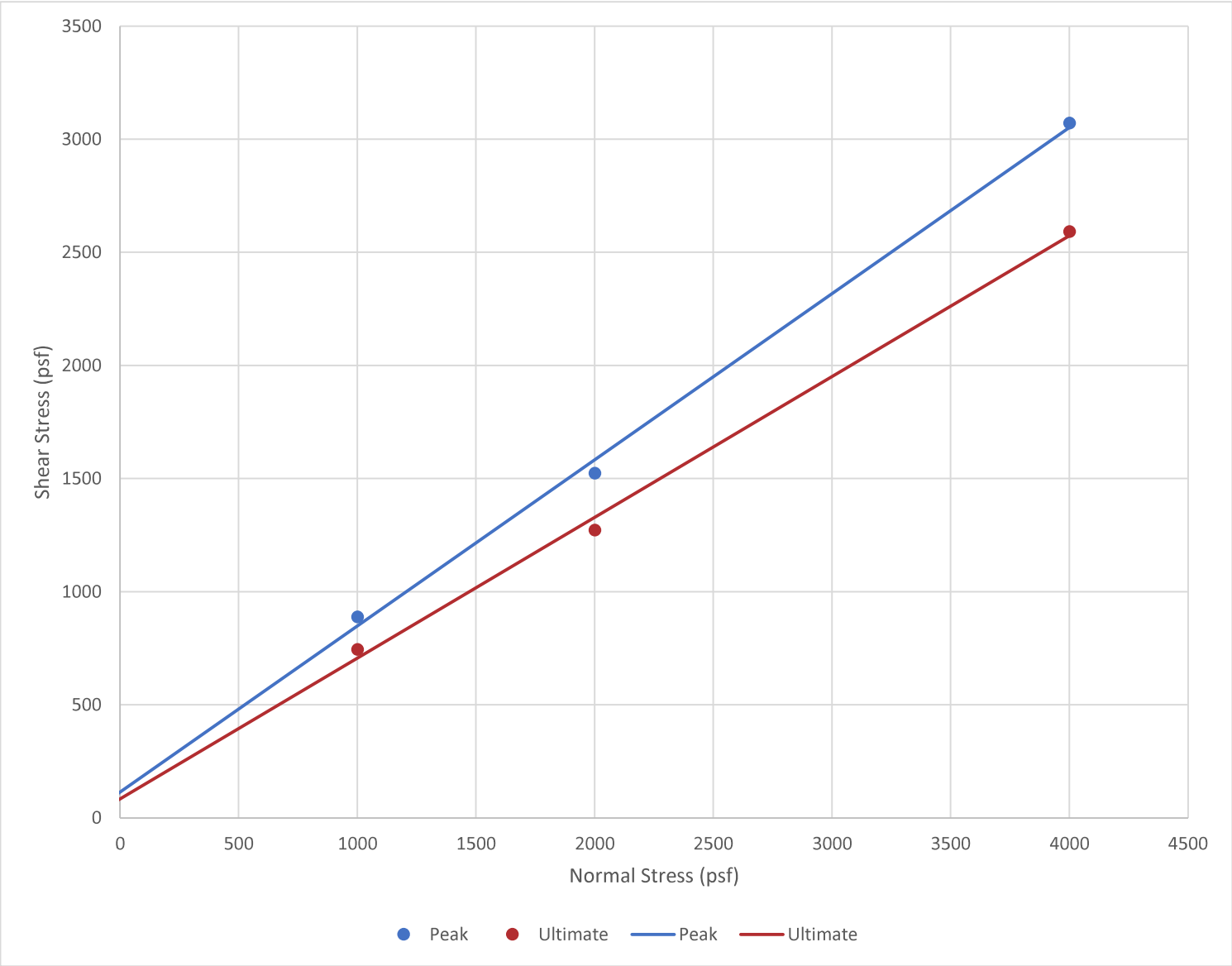


Direct Shear Test

ASTM D3080

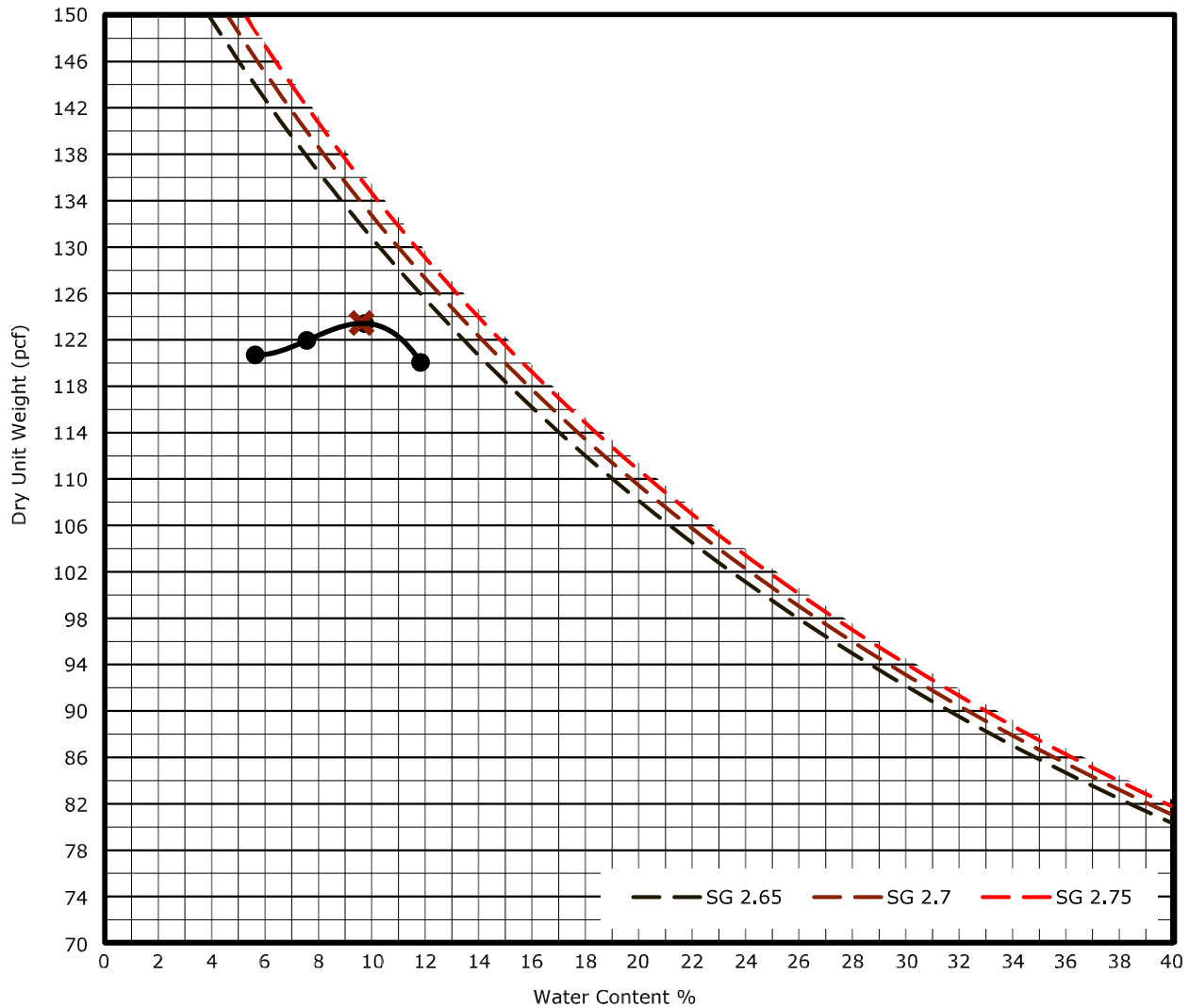
Boring ID	Depth	Description	USCS	γ_d (pcf)	W(%)
BESS-4	2.5 - 4'	Silty Sand	SM	114	0.8

Normal Stress (psf)	Peak Shear Stress (psf)	Ultimate Shear Stress (psf)	Peak		Ultimate	
			ϕ°	C (psf)	ϕ°	C (psf)
1000	888	744	36.3	114	31.9	84
2000	1524	1272				
4000	3072	2592				



Laboratory Compaction Characteristics of Soil Using Modified Effort

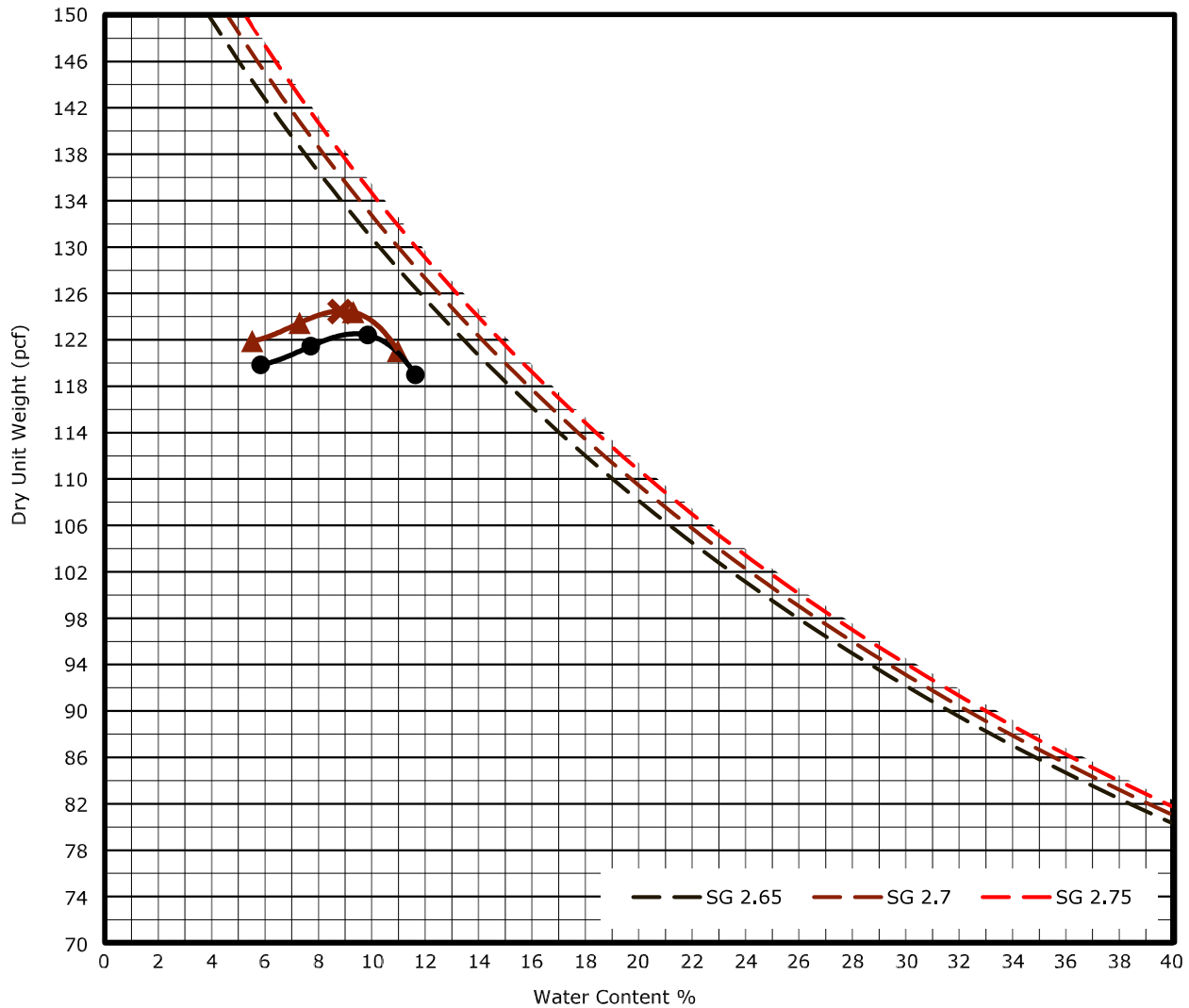
ASTM D1557



Boring ID	Depth (ft)	Description of Materials	USCS	Fines (%)	LL	PL	PI
B-1	0 - 5	Silty Sand with Gravel	SM				
Test Method		Sample Prep	Rammer	Maximum Dry Density (pcf)	Optimum Water Content (%)		
C		Dry	Mechanical - Sector Face	123.4	9.6		

Laboratory Compaction Characteristics of Soil Using Modified Effort

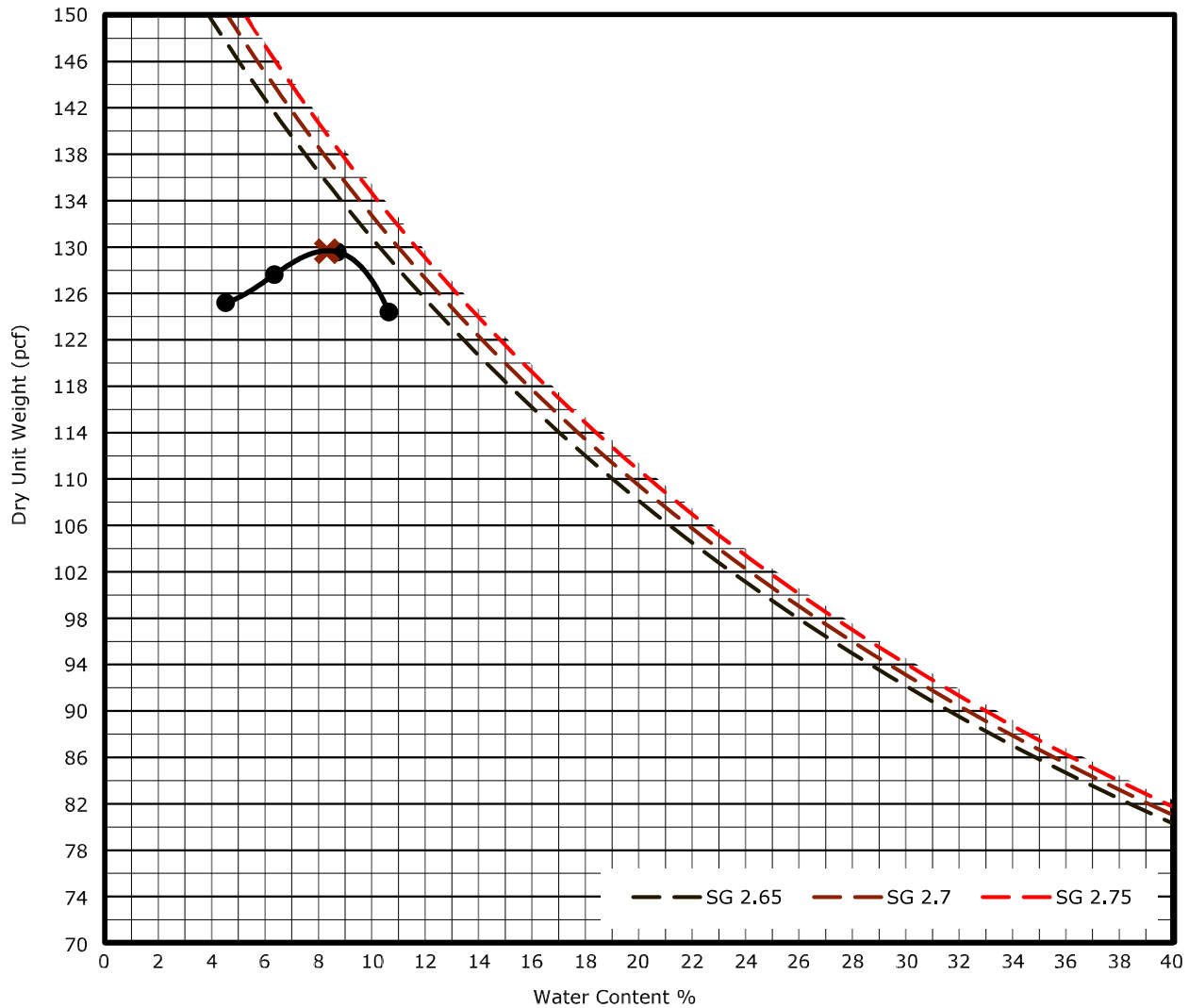
ASTM D1557



Boring ID	Depth (ft)	Description of Materials			USCS	Fines (%)	LL	PL	PI
B-2	0 - 5	Silty Sand			SM				
Test Method		Sample Prep	Rammer		Maximum Dry Density (pcf)		Optimum Water Content (%)		
B		Dry	Mechanical - Circular Face		122.5		9.4		
Sieve for Oversize Fraction	Specific Gravity of Oversized	Oversized Particles (%)	Moisture (%)	Corrected Max Dry Density (pcf)		Corrected Optimum Water Content (%)			
3/8"	2.7	5.8	0.4	124.4		8.8			

Laboratory Compaction Characteristics of Soil Using Modified Effort

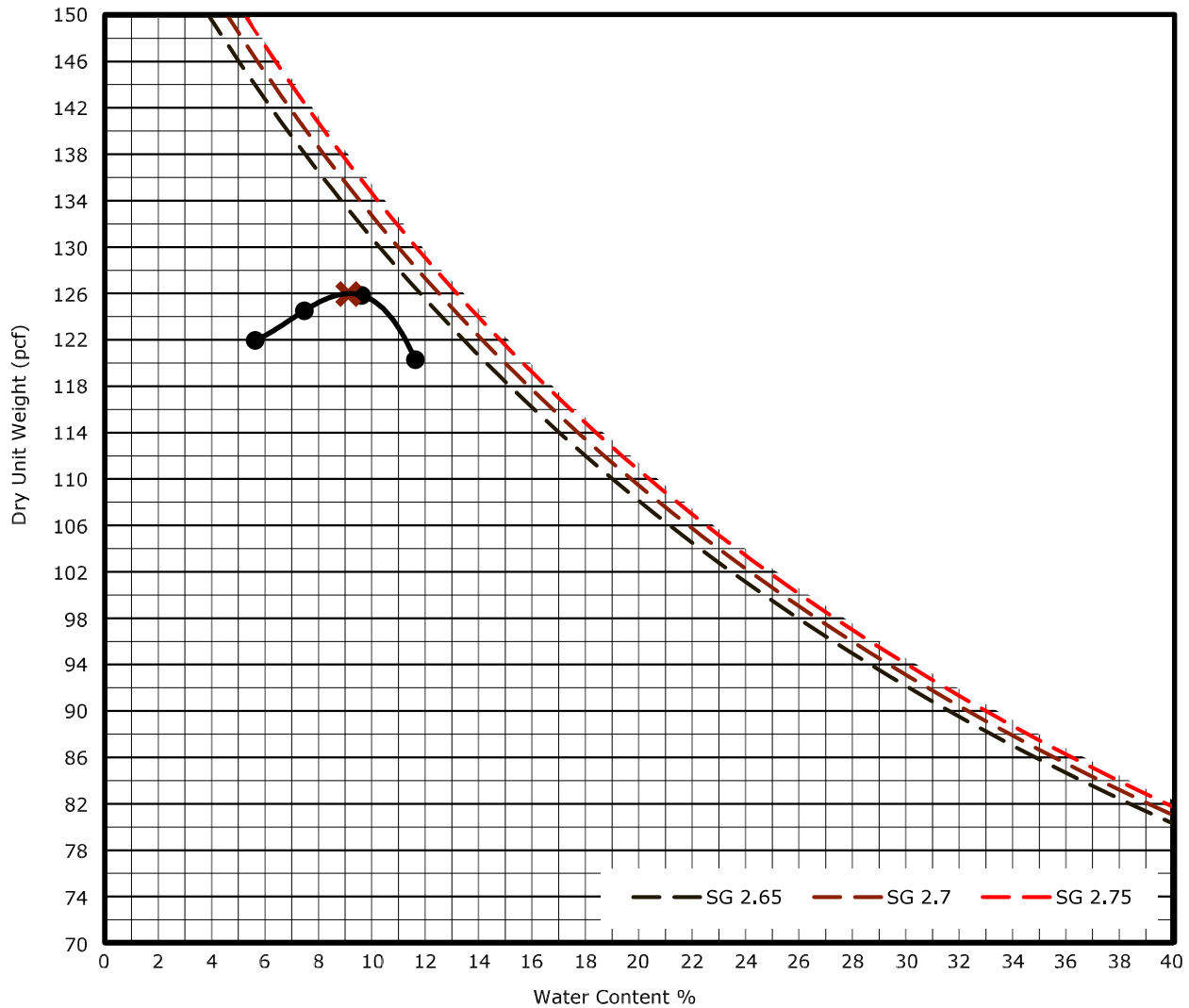
ASTM D1557



Boring ID	Depth (ft)	Description of Materials	USCS	Fines (%)	LL	PL	PI
B-4	0 - 5	Silty Sand	SM				
Test Method		Sample Prep	Rammer	Maximum Dry Density (pcf)		Optimum Water Content (%)	
C		Wet	Mechanical - Sector Face	129.6		8.3	

Laboratory Compaction Characteristics of Soil Using Modified Effort

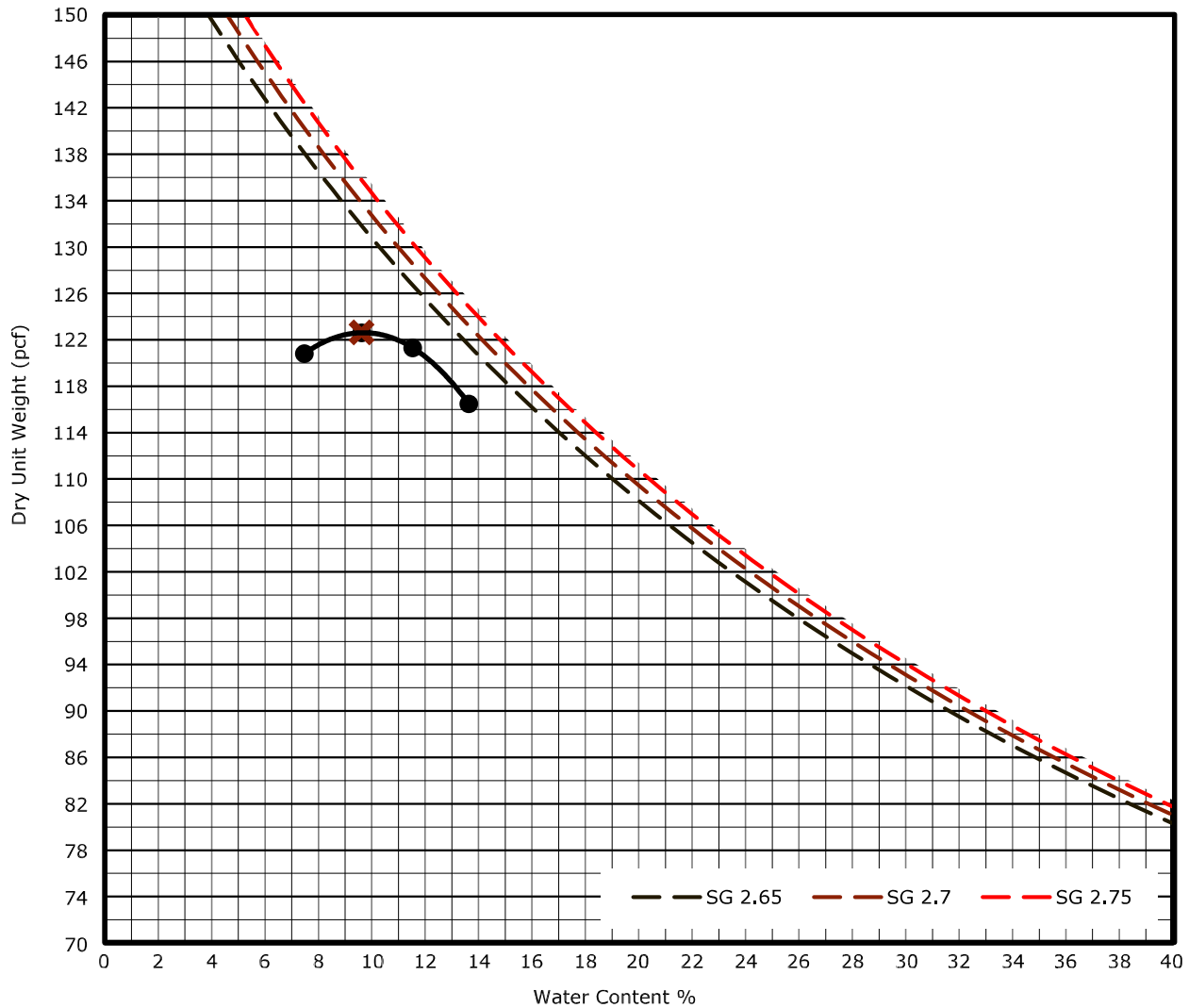
ASTM D1557



Boring ID	Depth (ft)	Description of Materials	USCS	Fines (%)	LL	PL	PI
B-5	0 - 5	Poorly Graded Sand with Silt	SP-SM				
Test Method		Sample Prep	Rammer	Maximum Dry Density (pcf)	Optimum Water Content (%)		
C		Dry	Mechanical - Sector Face	125.9	9.1		

Laboratory Compaction Characteristics of Soil Using Modified Effort

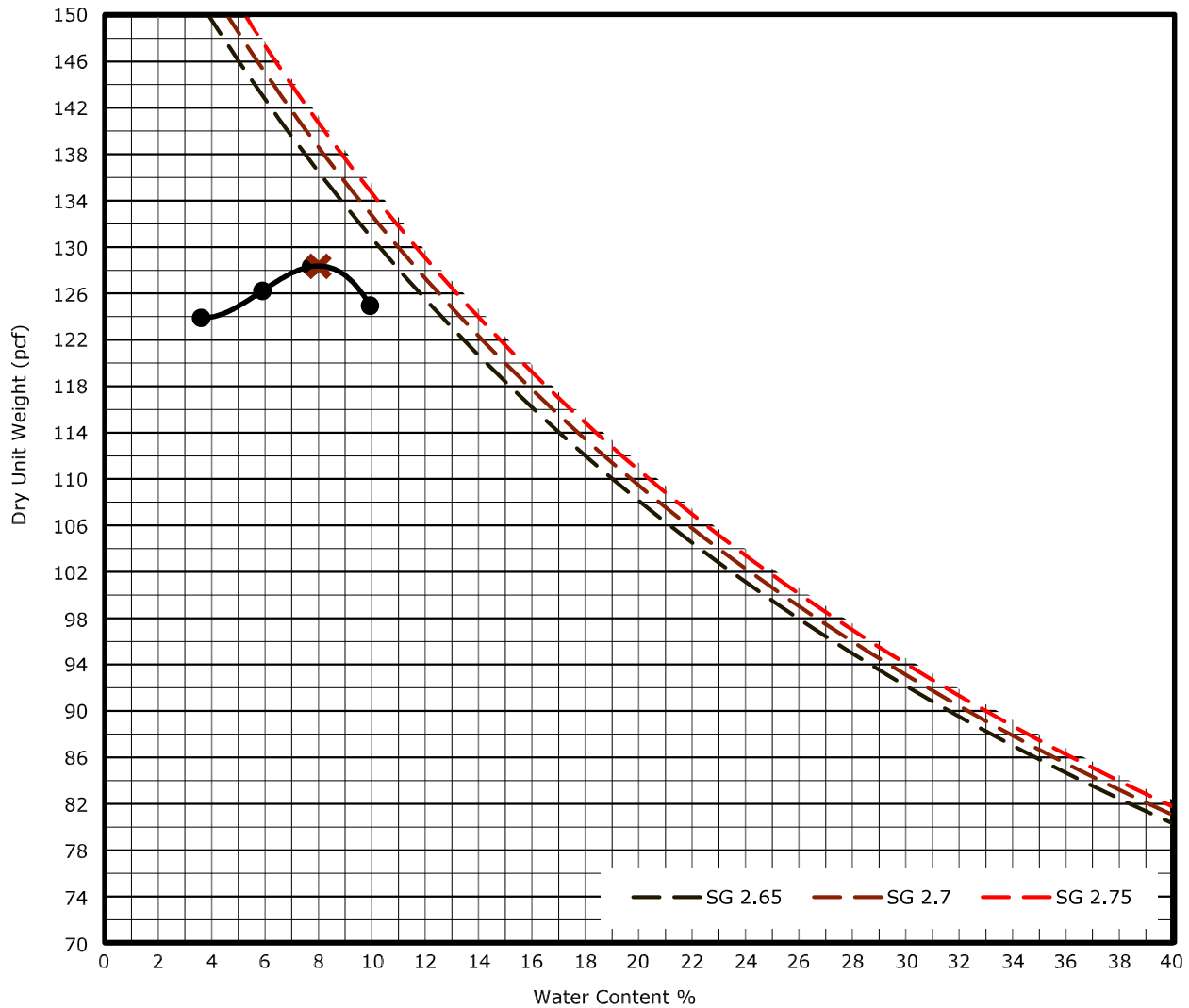
ASTM D1557



Boring ID	Depth (ft)	Description of Materials	USCS	Fines (%)	LL	PL	PI
B-7	0 - 5	Poorly Graded Sand with Silt	SP-SM				
Test Method		Sample Prep	Rammer	Maximum Dry Density (pcf)	Optimum Water Content (%)		
C		Dry	Mechanical - Sector Face	122.6	9.6		

Laboratory Compaction Characteristics of Soil Using Modified Effort

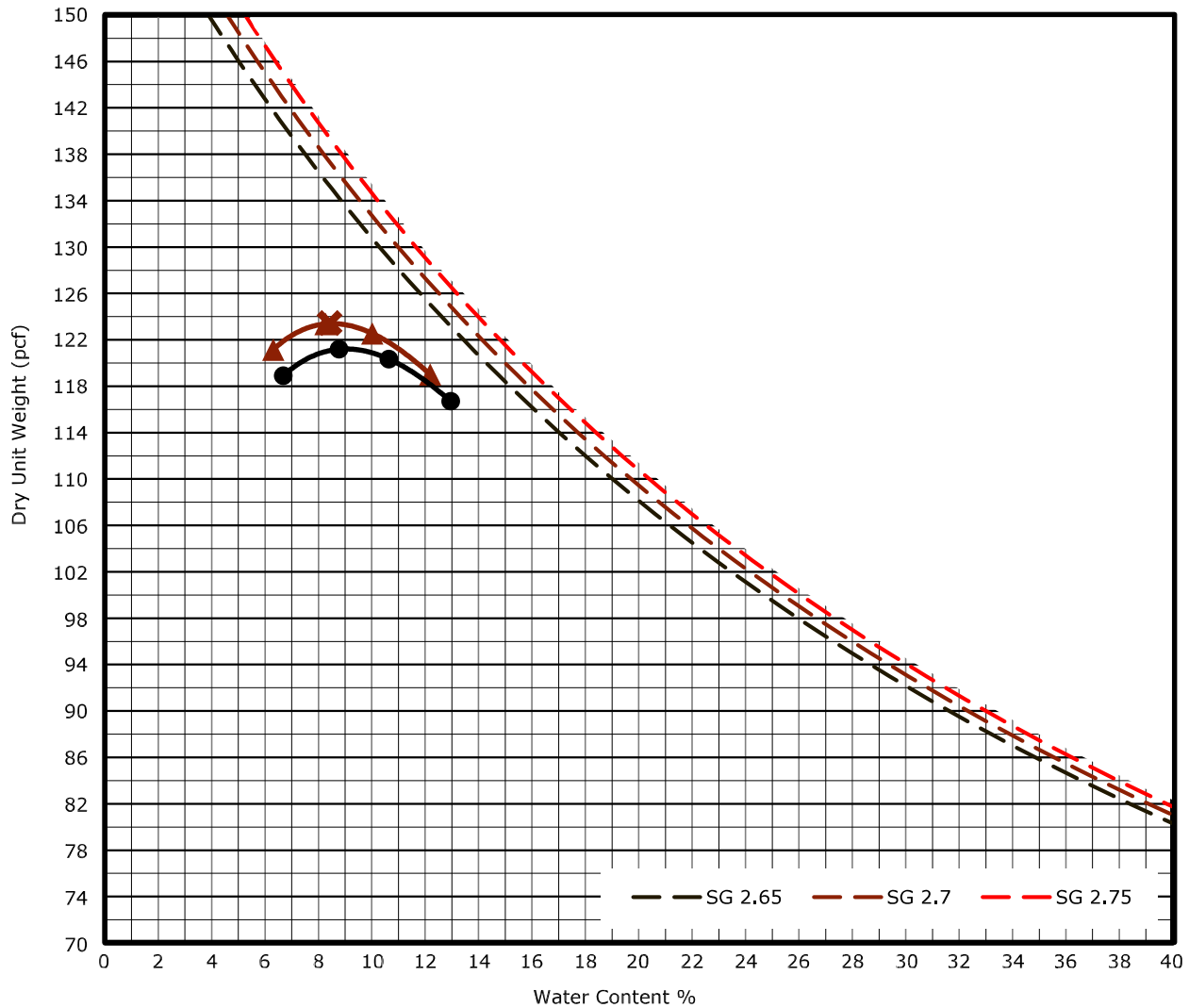
ASTM D1557



Boring ID	Depth (ft)	Description of Materials	USCS	Fines (%)	LL	PL	PI
B-12	0 - 5	Silty Sand	SM				
Test Method		Sample Prep	Rammer	Maximum Dry Density (pcf)	Optimum Water Content (%)		
C		Dry	Mechanical - Sector Face	128.3	8.0		

Laboratory Compaction Characteristics of Soil Using Modified Effort

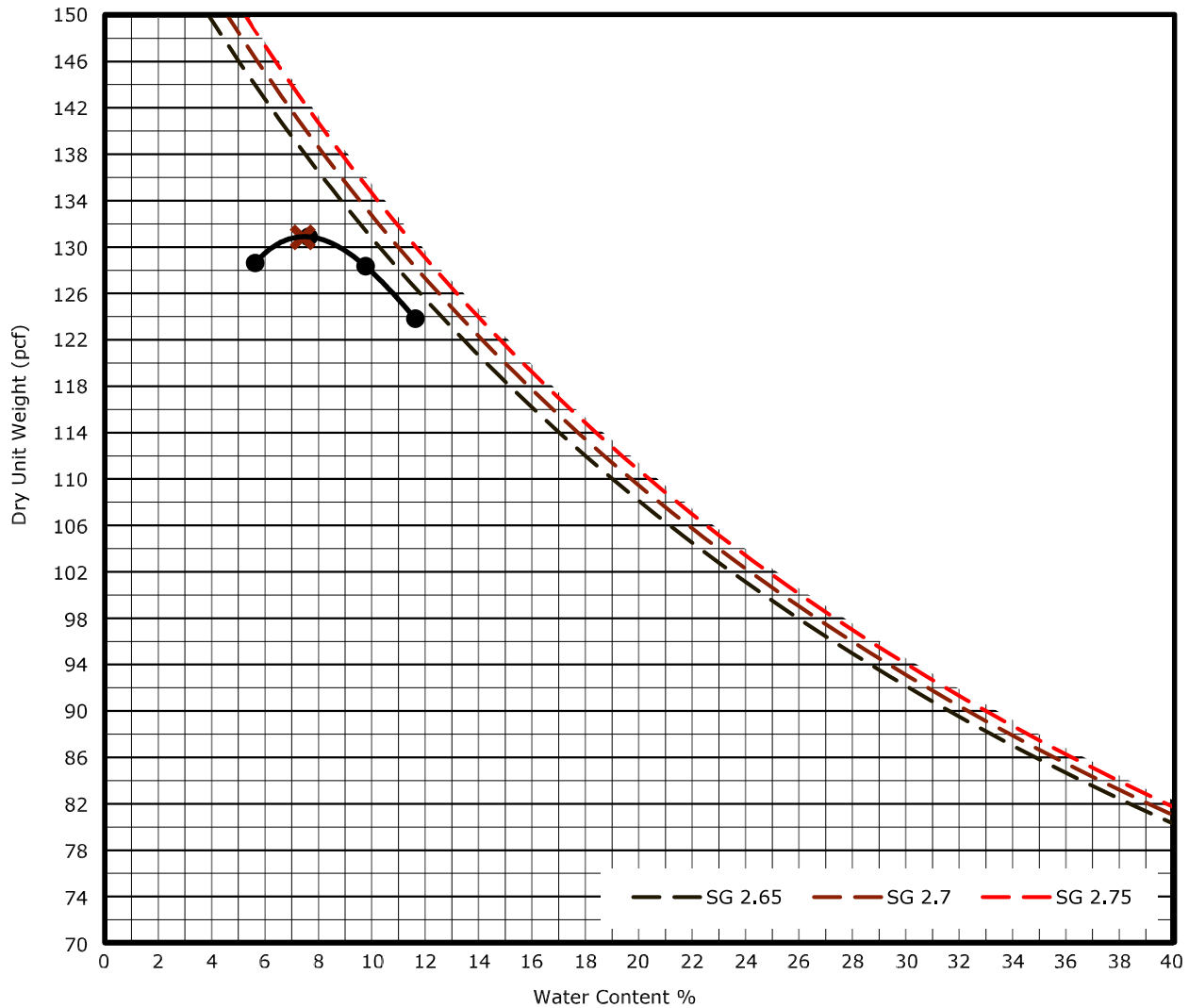
ASTM D1557



Boring ID	Depth (ft)	Description of Materials			USCS	Fines (%)	LL	PL	PI
B-13	0 - 5	Poorly Graded Sand with Silt			SP-SM				
Test Method		Sample Prep	Rammer		Maximum Dry Density (pcf)		Optimum Water Content (%)		
B		Dry	Mechanical - Circular Face		121.2		9.0		
Sieve for Oversize Fraction	Specific Gravity of Oversized	Oversized Particles (%)	Moisture (%)	Corrected Max Dry Density (pcf)		Corrected Optimum Water Content (%)			
3/8"	2.7	6.3	0.8	123.4		8.4			

Laboratory Compaction Characteristics of Soil Using Modified Effort

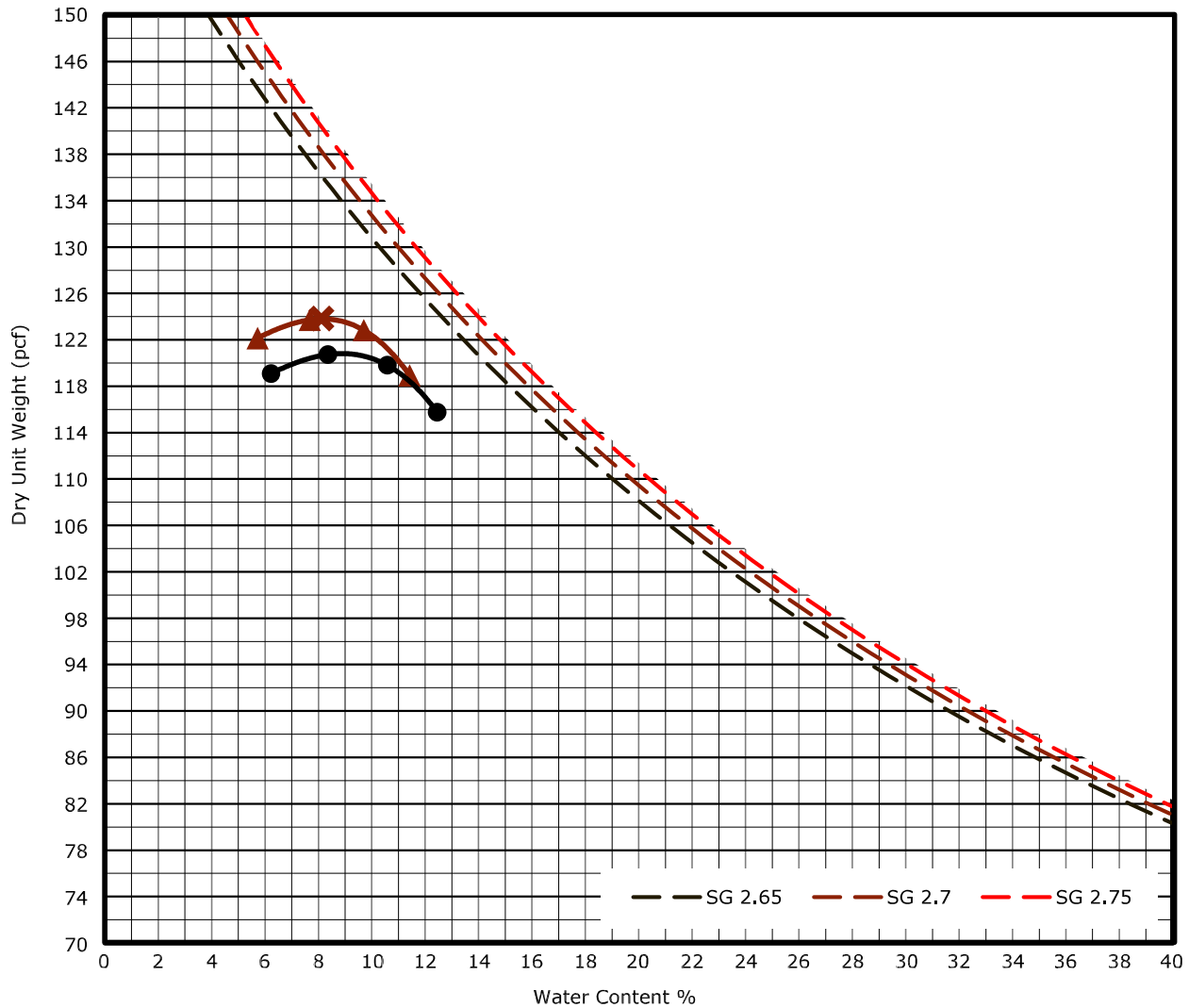
ASTM D1557



Boring ID	Depth (ft)	Description of Materials	USCS	Fines (%)	LL	PL	PI
BESS-1	0 - 5	Silty Sand	SM				
Test Method	Sample Prep	Rammer	Maximum Dry Density (pcf)		Optimum Water Content (%)		
C	Dry	Mechanical - Sector Face	130.8		7.4		

Laboratory Compaction Characteristics of Soil Using Modified Effort

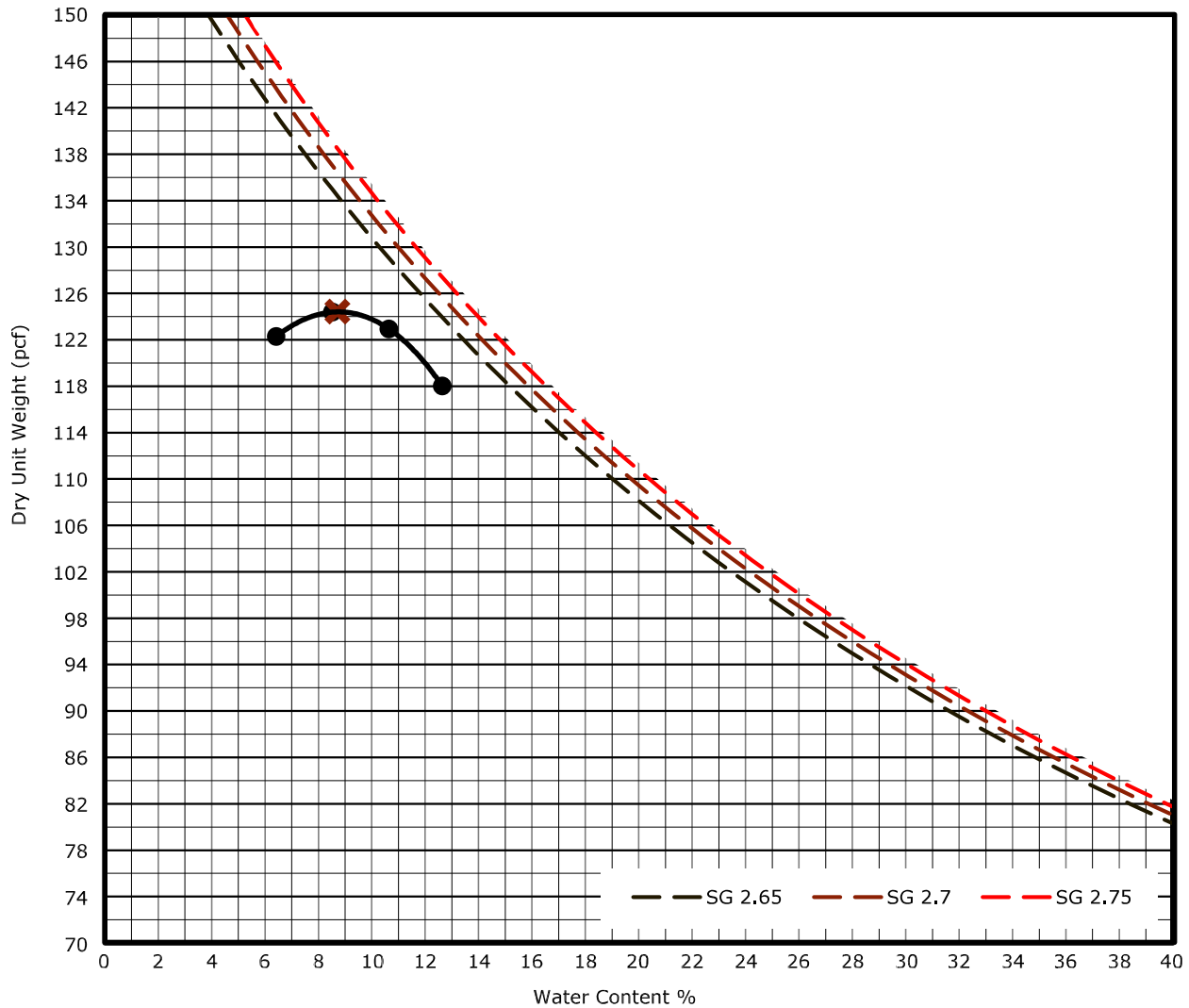
ASTM D1557



Boring ID	Depth (ft)	Description of Materials			USCS	Fines (%)	LL	PL	PI
BESS-2	0 - 5	Poorly Graded Sand with Silt			SP-SM				
Test Method		Sample Prep	Rammer		Maximum Dry Density (pcf)		Optimum Water Content (%)		
B		Dry	Mechanical - Circular Face		120.8		8.8		
Sieve for Oversize Fraction	Specific Gravity of Oversized	Oversized Particles (%)	Moisture (%)	Corrected Max Dry Density (pcf)		Corrected Optimum Water Content (%)			
3/8"	2.7	8.5	0.3	123.8		8.1			

Laboratory Compaction Characteristics of Soil Using Modified Effort

ASTM D1557



Boring ID	Depth (ft)	Description of Materials	USCS	Fines (%)	LL	PL	PI
SUB-1	0 - 5	Silty Sand	SM				
Test Method		Sample Prep	Rammer	Maximum Dry Density (pcf)	Optimum Water Content (%)		
C		Dry	Mechanical - Sector Face	124.4	8.7		

California Bearing Ratio ASTM D1883 - 3 Point Method

Sample Number:	
Boring / Depth:	B-1 @ 0
Sample Location:	B-1 0' - 5'
Material Description:	N/A

Proctor Method:	ASTM D1557 - Method C
Maximum Dry Density (pcf):	123.4
Optimum Moisture:	9.6
Liquid Limit:	N/A
Plasticity Index:	N/A

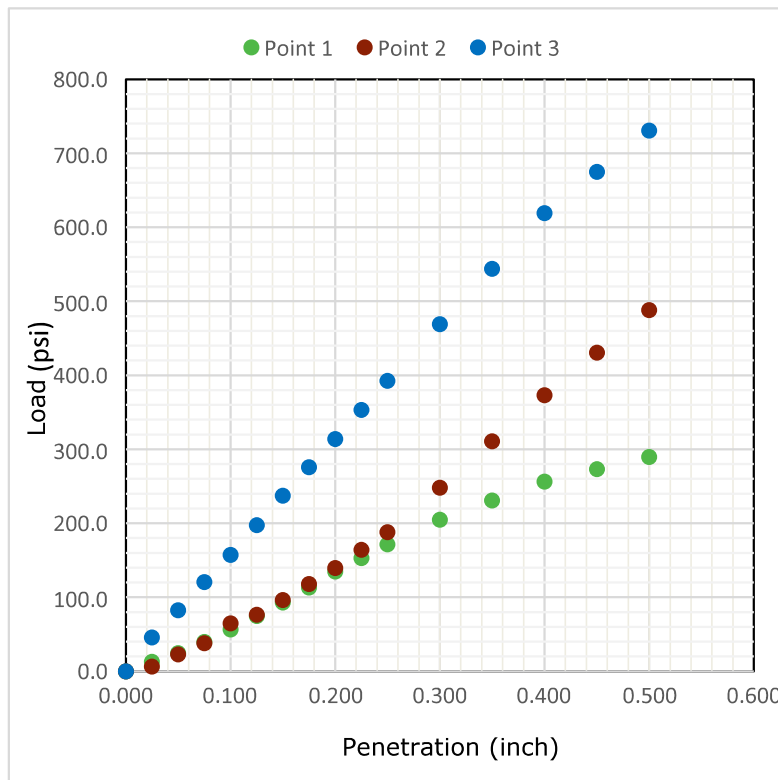
CBR Test Method	3 Point
-----------------	---------

CBR TEST DATA	Point 1	Point 2	Point 3
CBR Value at 0.100 inch	5.6	6.5	15.7
CBR Value at 0.200 inch	9.0	9.3	20.9

Surcharge Weight (lbs)	10	10	10
Soaking Condition	Soaked	Soaked	Soaked
Length of Soak (hours)	96	96	96
Swell (%)	0.000	0.000	0.000

DENSITY DATA	Point 1	Point 2	Point 3
Density Before Soak (pcf)	105.1	111.3	117.2
% Compaction	85.1	90.2	95.0

MOISTURE DATA	Point 1	Point 2	Point 3
Before Compaction	9.8%	9.5%	9.0%
After Compaction	9.8%	9.5%	9.0%
Top 1" After Soaking	12.5%	11.5%	11.6%
Average After Soaking	0.0%		



Comments	
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California Bearing Ratio

ASTM D1883 - 3 Point Method

Sample Number:	
Boring / Depth:	B-4 @ 0'
Sample Location:	B-4 @ 0' - 5'
Material Description:	

Proctor Method:	ASTM D1557 - Method C
Maximum Dry Density (pcf):	129.6
Optimum Moisture:	8.3
Liquid Limit:	N/A
Plasticity Index:	N/A

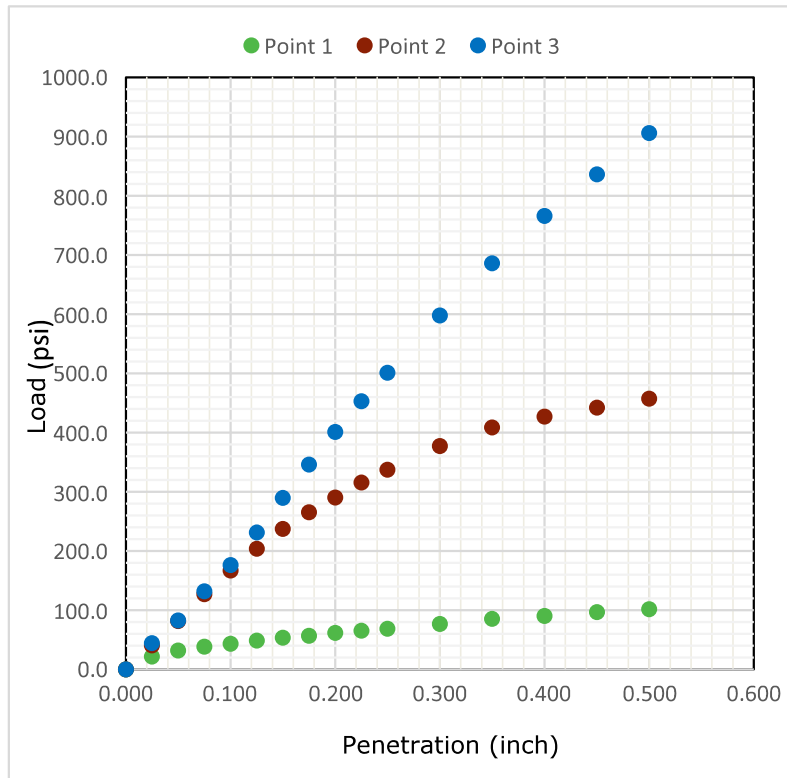
CBR Test Method	3 Point
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CBR TEST DATA	Point 1	Point 2	Point 3
CBR Value at 0.100 inch	4.3	16.7	17.6
CBR Value at 0.200 inch	4.1	19.4	26.7

Surcharge Weight (lbs)	10	10	10
Soaking Condition	Soaked	Soaked	Soaked
Length of Soak (hours)	96	96	96
Swell (%)	0.000	0.000	0.000

DENSITY DATA	Point 1	Point 2	Point 3
Density Before Soak (pcf)	109.9	117.0	123.1
% Compaction	84.8	90.3	95.0

MOISTURE DATA	Point 1	Point 2	Point 3
Before Compaction	8.3%	8.1%	8.7%
After Compaction	8.3%	8.1%	8.7%
Top 1" After Soaking	14.8%	12.7%	10.7%
Average After Soaking	0.0%		



Comments

California Bearing Ratio

ASTM D1883 - 3 Point Method

Sample Number:	
Boring / Depth:	B-5 @ 0'
Sample Location:	B-5 @ 0' - 5'
Material Description:	

Proctor Method:	ASTM D1557 - Method C
Maximum Dry Density (pcf):	125.9
Optimum Moisture:	9.1
Liquid Limit:	N/A
Plasticity Index:	N/A

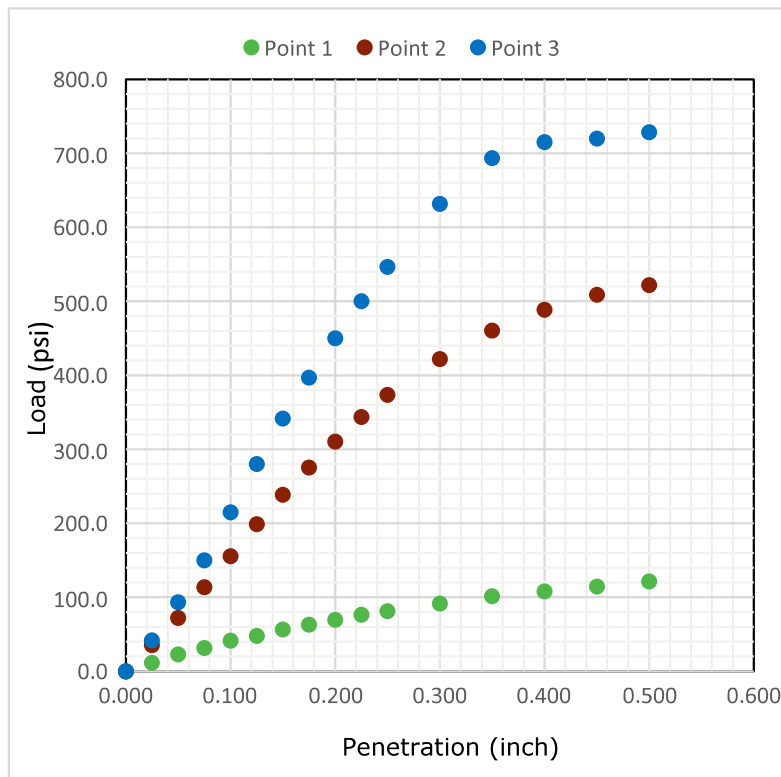
CBR Test Method	3 Point
-----------------	---------

CBR TEST DATA	Point 1	Point 2	Point 3
CBR Value at 0.100 inch	4.1	15.5	21.5
CBR Value at 0.200 inch	4.6	20.7	30.0

Surcharge Weight (lbs)	10	10	10
Soaking Condition	Soaked	Soaked	Soaked
Length of Soak (hours)	96	96	96
Swell (%)	0.000	0.000	0.000

DENSITY DATA	Point 1	Point 2	Point 3
Density Before Soak (pcf)	107.1	113.5	119.8
% Compaction	85.1	90.2	95.1

MOISTURE DATA	Point 1	Point 2	Point 3
Before Compaction	9.2%	9.6%	9.0%
After Compaction	9.2%	9.6%	9.0%
Top 1" After Soaking	11.5%	12.1%	14.4%
Average After Soaking	0.0%		



Comments

California Bearing Ratio

ASTM D1883 - 3 Point Method

Sample Number:	
Boring / Depth:	B-7 @ 0
Sample Location:	
Material Description:	

Proctor Method:	ASTM D1557 - Method C
Maximum Dry Density (pcf):	122.6
Optimum Moisture:	9.6
Liquid Limit:	N/A
Plasticity Index:	N/A

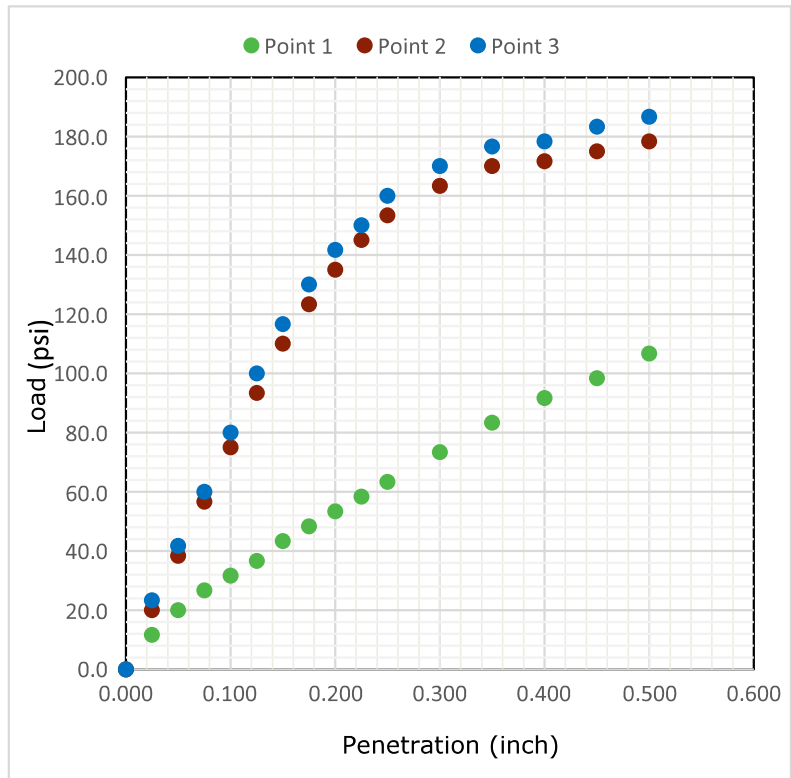
CBR Test Method	3 Point
-----------------	---------

CBR TEST DATA	Point 1	Point 2	Point 3
CBR Value at 0.100 inch	3.2	7.5	8.0
CBR Value at 0.200 inch	3.6	9.0	9.4

Surcharge Weight (lbs)	10	10	10
Soaking Condition	Soaked	Soaked	Soaked
Length of Soak (hours)	96	96	96
Swell (%)	0.000	0.000	0.000

DENSITY DATA	Point 1	Point 2	Point 3
Density Before Soak (pcf)	104.4	110.2	116.3
% Compaction	85.2	89.9	94.9

MOISTURE DATA	Point 1	Point 2	Point 3
Before Compaction	9.8%	9.1%	9.5%
After Compaction	9.8%	9.1%	9.5%
Top 1" After Soaking	14.5%	14.1%	12.7%
Average After Soaking	0.0%		



Comments

California Bearing Ratio

ASTM D1883 - 3 Point Method

Sample Number:	
Boring / Depth:	B-10 @ 0
Sample Location:	
Material Description:	

Proctor Method:	ASTM D1557 - Method C
Maximum Dry Density (pcf):	121.5
Optimum Moisture:	9.5
Liquid Limit:	N/A
Plasticity Index:	N/A

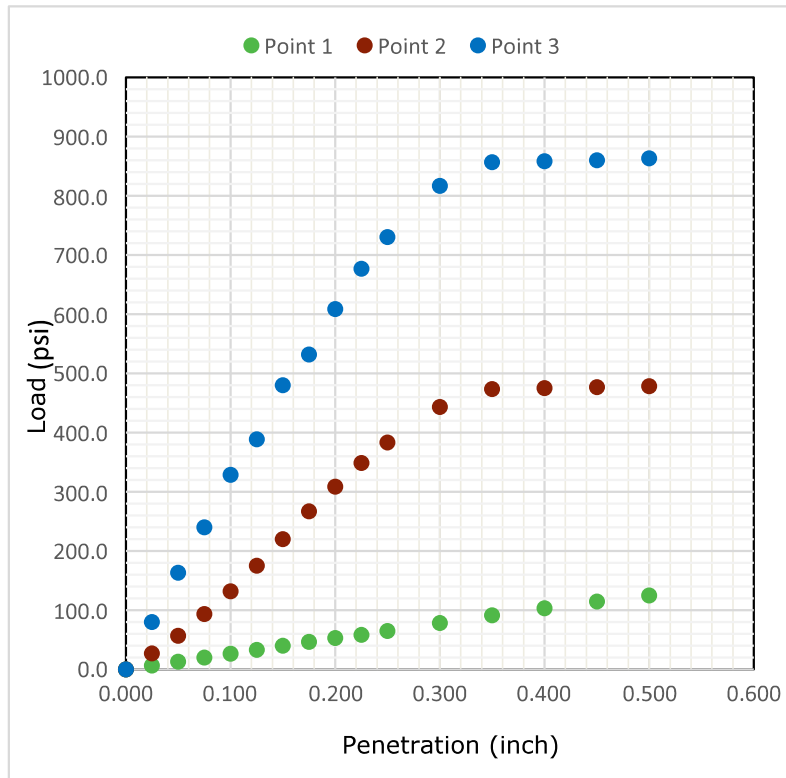
CBR Test Method	3 Point
-----------------	---------

CBR TEST DATA	Point 1	Point 2	Point 3
CBR Value at 0.100 inch	2.6	13.2	32.8
CBR Value at 0.200 inch	3.5	20.6	40.6

Surcharge Weight (lbs)	10	10	10
Soaking Condition	Soaked	Soaked	Soaked
Length of Soak (hours)	96	96	96
Swell (%)	0.000	0.000	0.000

DENSITY DATA	Point 1	Point 2	Point 3
Density Before Soak (pcf)	103.3	109.6	115.3
% Compaction	85.0	90.2	94.9

MOISTURE DATA	Point 1	Point 2	Point 3
Before Compaction	9.4%	9.5%	9.3%
After Compaction	9.4%	9.5%	9.3%
Top 1" After Soaking	13.6%	12.0%	11.7%
Average After Soaking	0.0%		



Comments

California Bearing Ratio

ASTM D1883 - 3 Point Method

Sample Number:	
Boring / Depth:	B-12 @ 0
Sample Location:	
Material Description:	

Proctor Method:	ASTM D1557 - Method C
Maximum Dry Density (pcf):	128.3
Optimum Moisture:	8
Liquid Limit:	N/A
Plasticity Index:	N/A

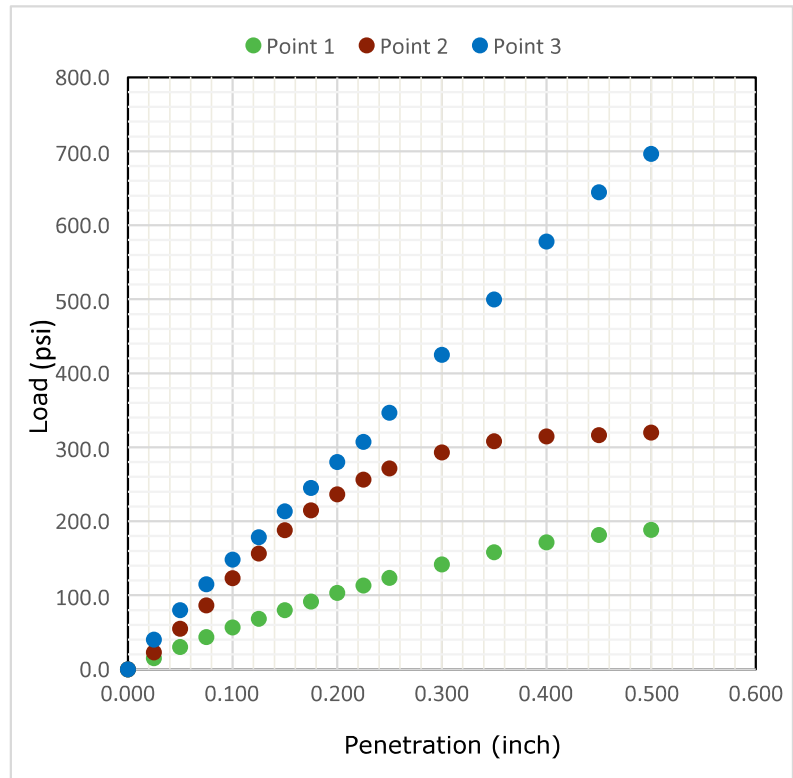
CBR Test Method	3 Point
-----------------	---------

CBR TEST DATA	Point 1	Point 2	Point 3
CBR Value at 0.100 inch	5.7	12.3	14.8
CBR Value at 0.200 inch	6.9	15.8	18.7

Surcharge Weight (lbs)	10	10	10
Soaking Condition	Soaked	Soaked	Soaked
Length of Soak (hours)	96	96	96
Swell (%)	0.022	0.022	0.000

DENSITY DATA	Point 1	Point 2	Point 3
Density Before Soak (pcf)	109.1	115.6	121.7
% Compaction	85.0	90.1	94.9

MOISTURE DATA	Point 1	Point 2	Point 3
Before Compaction	7.9%	7.9%	8.1%
After Compaction	7.9%	7.9%	8.1%
Top 1" After Soaking	12.8%	12.9%	10.8%
Average After Soaking	0.0%		



Comments

California Bearing Ratio

ASTM D1883 - 3 Point Method

Sample Number:	
Boring / Depth:	BESS-1 @ 0
Sample Location:	
Material Description:	N/A

Proctor Method:	ASTM D1557 - Method C
Maximum Dry Density (pcf):	130.8
Optimum Moisture:	7.4
Liquid Limit:	N/A
Plasticity Index:	N/A

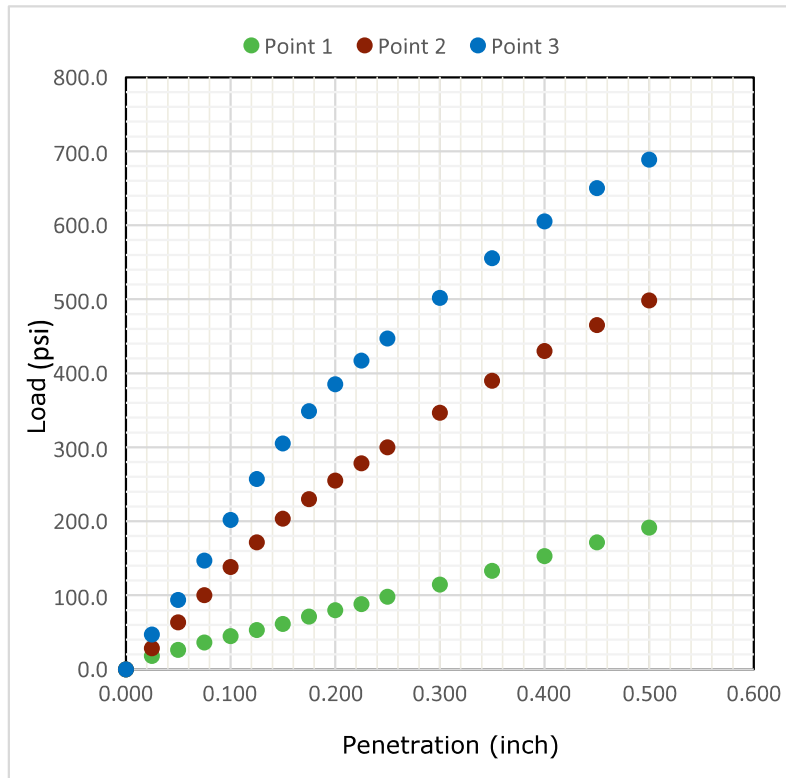
CBR Test Method	3 Point
-----------------	---------

CBR TEST DATA	Point 1	Point 2	Point 3
CBR Value at 0.100 inch	4.5	13.8	20.2
CBR Value at 0.200 inch	5.3	17.0	25.7

Surcharge Weight (lbs)	10	10	10
Soaking Condition	Soaked	Soaked	Soaked
Length of Soak (hours)	96	96	96
Swell (%)	0.022	0.022	0.000

DENSITY DATA	Point 1	Point 2	Point 3
Density Before Soak (pcf)	111.0	117.9	124.0
% Compaction	84.8	90.2	94.8

MOISTURE DATA	Point 1	Point 2	Point 3
Before Compaction	7.4%	7.4%	7.4%
After Compaction	7.4%	7.4%	7.4%
Top 1" After Soaking	12.0%	12.0%	11.5%
Average After Soaking	0.0%		



Comments

California Bearing Ratio

ASTM D1883 - 3 Point Method

Sample Number:	
Boring / Depth:	SUB-1 @ 0
Sample Location:	
Material Description:	

Proctor Method:	ASTM D1557 - Method C
Maximum Dry Density (pcf):	124.4
Optimum Moisture:	8.7
Liquid Limit:	N/A
Plasticity Index:	N/A

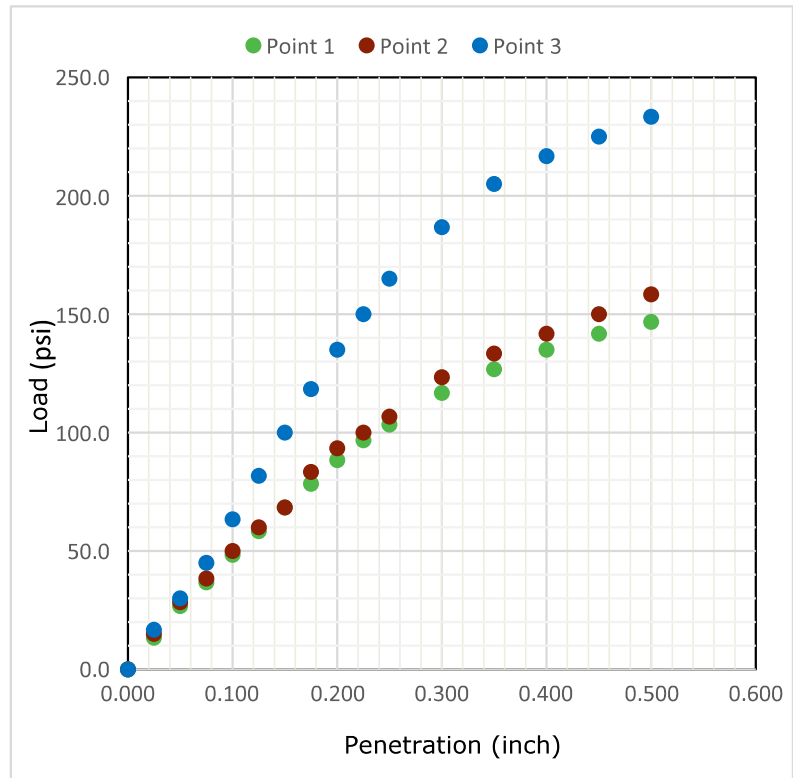
CBR Test Method	3 Point
-----------------	---------

CBR TEST DATA	Point 1	Point 2	Point 3
CBR Value at 0.100 inch	4.8	5.0	6.3
CBR Value at 0.200 inch	5.9	6.2	9.0

Surcharge Weight (lbs)	10	10	10
Soaking Condition	Soaked	Soaked	Soaked
Length of Soak (hours)	96	96	96
Swell (%)	0.022	0.000	0.000

DENSITY DATA	Point 1	Point 2	Point 3
Density Before Soak (pcf)	105.6	112.1	118.1
% Compaction	84.9	90.1	94.9

MOISTURE DATA	Point 1	Point 2	Point 3
Before Compaction	8.6%	8.8%	9.0%
After Compaction	8.6%	8.8%	9.0%
Top 1" After Soaking	14.1%	14.5%	14.6%
Average After Soaking	0.0%		



Comments

Soil Corrosivity Profile

Summary Report

Boring ID	B-1
Sample Depth, (ft)	0
Sample Description	0

Test Method	Test Designation	Test Result
Electrical Resistivity ($\Omega \cdot \text{cm}$)	ASTM G57	750
Oxidation Reduction Potential (RmV)	ASTM G200	145
Acidity (pH)	ASTM G51	8.1
Chloride Ion Content (mg/kg)	AWWA -4500-CL-E	84
Soluble Sulfate Content (mg/kg)	ASTM D516	115
Total Dissolved Salts (mg/kg)	AWWA 2520 B	24
Sulfides (mg/kg)	AWWA 4500-S2- D	0.7

Instrument Identifications			
Oxidation Reduction Potential		Acidity (pH)	
Probe ID	Oakton Testr 50	Meter ID	Oakton pH Testr 30
Meter ID	Oakton Testr 50	Thermometric Type	Digital
Thermometric Type	Digital		

Soil Corrosivity Profile

Summary Report

Boring ID	B-5
Sample Depth, (ft)	0
Sample Description	0

Test Method	Test Designation	Test Result
Electrical Resistivity ($\Omega \cdot \text{cm}$)	ASTM G57	2000
Oxidation Reduction Potential (RmV)	ASTM G200	143
Acidity (pH)	ASTM G51	8.1
Chloride Ion Content (mg/kg)	AWWA -4500-CL-E	152
Soluble Sulfate Content (mg/kg)	ASTM D516	109
Total Dissolved Salts (mg/kg)	AWWA 2520 B	70
Sulfides (mg/kg)	AWWA 4500-S2- D	0.5

Instrument Identifications

Oxidation Reduction Potential		Acidity (pH)	
Probe ID	Oakton Testr 50	Meter ID	Oakton pH Testr 30
Meter ID	Oakton Testr 50	Thermometric Type	Digital
Thermometric Type	Digital		

Soil Corrosivity Profile

Summary Report

Boring ID	B-9
Sample Depth, (ft)	0
Sample Description	0

Test Method	Test Designation	Test Result
Electrical Resistivity ($\Omega \cdot \text{cm}$)	ASTM G57	1900
Oxidation Reduction Potential (RmV)	ASTM G200	153
Acidity (pH)	ASTM G51	8.2
Chloride Ion Content (mg/kg)	AWWA -4500-CL-E	310
Soluble Sulfate Content (mg/kg)	ASTM D516	359
Total Dissolved Salts (mg/kg)	AWWA 2520 B	210
Sulfides (mg/kg)	AWWA 4500-S2- D	1

Instrument Identifications			
Oxidation Reduction Potential		Acidity (pH)	
Probe ID	Oakton Testr 50	Meter ID	Oakton pH Testr 30
Meter ID	Oakton Testr 50	Thermometric Type	Digital
Thermometric Type	Digital		

Soil Corrosivity Profile

Summary Report

Boring ID	B-10
Sample Depth, (ft)	0
Sample Description	0

Test Method	Test Designation	Test Result
Electrical Resistivity ($\Omega \cdot \text{cm}$)	ASTM G57	1800
Oxidation Reduction Potential (RmV)	ASTM G200	139
Acidity (pH)	ASTM G51	8.2
Chloride Ion Content (mg/kg)	AWWA -4500-CL-E	130
Soluble Sulfate Content (mg/kg)	ASTM D516	109
Total Dissolved Salts (mg/kg)	AWWA 2520 B	66
Sulfides (mg/kg)	AWWA 4500-S2- D	0.5

Instrument Identifications			
Oxidation Reduction Potential		Acidity (pH)	
Probe ID	Oakton Testr 50	Meter ID	Oakton pH Testr 30
Meter ID	Oakton Testr 50	Thermometric Type	Digital
Thermometric Type	Digital		

Soil Corrosivity Profile

Summary Report

Boring ID	B-13
Sample Depth, (ft)	0
Sample Description	0

Test Method	Test Designation	Test Result
Electrical Resistivity ($\Omega \cdot \text{cm}$)	ASTM G57	13000
Oxidation Reduction Potential (RmV)	ASTM G200	105
Acidity (pH)	ASTM G51	9.1
Chloride Ion Content (mg/kg)	AWWA -4500-CL-E	151
Soluble Sulfate Content (mg/kg)	ASTM D516	104
Total Dissolved Salts (mg/kg)	AWWA 2520 B	27
Sulfides (mg/kg)	AWWA 4500-S2- D	0.5

Instrument Identifications			
Oxidation Reduction Potential		Acidity (pH)	
Probe ID	Oakton Testr 50	Meter ID	Oakton pH Testr 30
Meter ID	Oakton Testr 50	Thermometric Type	Digital
Thermometric Type	Digital		

Soil Corrosivity Profile

Summary Report

Boring ID	BESS-1
Sample Depth, (ft)	0
Sample Description	0

Test Method	Test Designation	Test Result
Electrical Resistivity ($\Omega \cdot \text{cm}$)	ASTM G57	10000
Oxidation Reduction Potential (RmV)	ASTM G200	149
Acidity (pH)	ASTM G51	7.7
Chloride Ion Content (mg/kg)	AWWA -4500-CL-E	157
Soluble Sulfate Content (mg/kg)	ASTM D516	94
Total Dissolved Salts (mg/kg)	AWWA 2520 B	100
Sulfides (mg/kg)	AWWA 4500-S2- D	0.3

Instrument Identifications			
Oxidation Reduction Potential		Acidity (pH)	
Probe ID	Oakton Testr 50	Meter ID	Oakton pH Testr 30
Meter ID	Oakton Testr 50	Thermometric Type	Digital
Thermometric Type	Digital		

Soil Corrosivity Profile

Summary Report

Boring ID	OM-1
Sample Depth, (ft)	0
Sample Description	0

Test Method	Test Designation	Test Result
Electrical Resistivity ($\Omega \cdot \text{cm}$)	ASTM G57	10000
Oxidation Reduction Potential (RmV)	ASTM G200	243
Acidity (pH)	ASTM G51	8.1
Chloride Ion Content (mg/kg)	AWWA -4500-CL-E	250
Soluble Sulfate Content (mg/kg)	ASTM D516	144
Total Dissolved Salts (mg/kg)	AWWA 2520 B	87
Sulfides (mg/kg)	AWWA 4500-S2- D	1.8

Instrument Identifications			
Oxidation Reduction Potential		Acidity (pH)	
Probe ID	Oakton Testr 50	Meter ID	Oakton pH Testr 30
Meter ID	Oakton Testr 50	Thermometric Type	Digital
Thermometric Type	Digital		

Soil Corrosivity Profile

Summary Report

Boring ID	SUB-1
Sample Depth, (ft)	0
Sample Description	0

Test Method	Test Designation	Test Result
Electrical Resistivity ($\Omega \cdot \text{cm}$)	ASTM G57	3300
Oxidation Reduction Potential (RmV)	ASTM G200	147
Acidity (pH)	ASTM G51	8.5
Chloride Ion Content (mg/kg)	AWWA -4500-CL-E	184
Soluble Sulfate Content (mg/kg)	ASTM D516	371
Total Dissolved Salts (mg/kg)	AWWA 2520 B	57
Sulfides (mg/kg)	AWWA 4500-S2- D	1.1

Instrument Identifications

Oxidation Reduction Potential		Acidity (pH)	
Probe ID	Oakton Testr 50	Meter ID	Oakton pH Testr 30
Meter ID	Oakton Testr 50	Thermometric Type	Digital
Thermometric Type	Digital		



February 25, 2026

Terracon
1355 E Cooley Dr Ste C
Colton, CA 92324
Attn: Adib Attiyah

Thermal Resistivity Report
Savira Solar – Riverside County, CA (Project No. CB255153)

The following is the report of thermal dryout characterization tests conducted on four (4) bulk samples of native soil from the referenced project sent to our laboratory.

Thermal Resistivity Tests: The samples were tested at 85% of the modified Proctor dry density ***provided by Terracon*** and at higher of the ‘as received’ or ‘optimum’ moisture content. In addition, sample BESS-2 and SUB-1 were tested at 95% of the modified Proctor dry density. The tests were conducted in accordance with the **IEEE standard 442-2017**. The results are tabulated below and the thermal dry out curves are presented in **Figures 1 to 4**.

Sample ID, Description, Thermal Resistivity, Moisture Content and Density

Sample ID	Depth (ft)	Effort (%)	Description (Terracon)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft³)
				Wet	Dry		
B-02	0 - 5	85	Silty Sand (SM)	79	173	9	106
B-13	0 - 5	85	Silty Sand (SM)	86	186	8	105
BESS-2	0 - 5	85	Silty Sand (SM)	82	182	8	105
BESS-2	0 - 5	95	Silty Sand (SM)	74	138	8	118
SUB-1	0 - 5	85	Silty Sand (SM)	80	180	9	106
SUB-1	0 - 5	95	Silty Sand (SM)	72	136	9	118



Comments: The thermal characteristic depicted in the dryout curves apply for the soils at their respective test dry density.

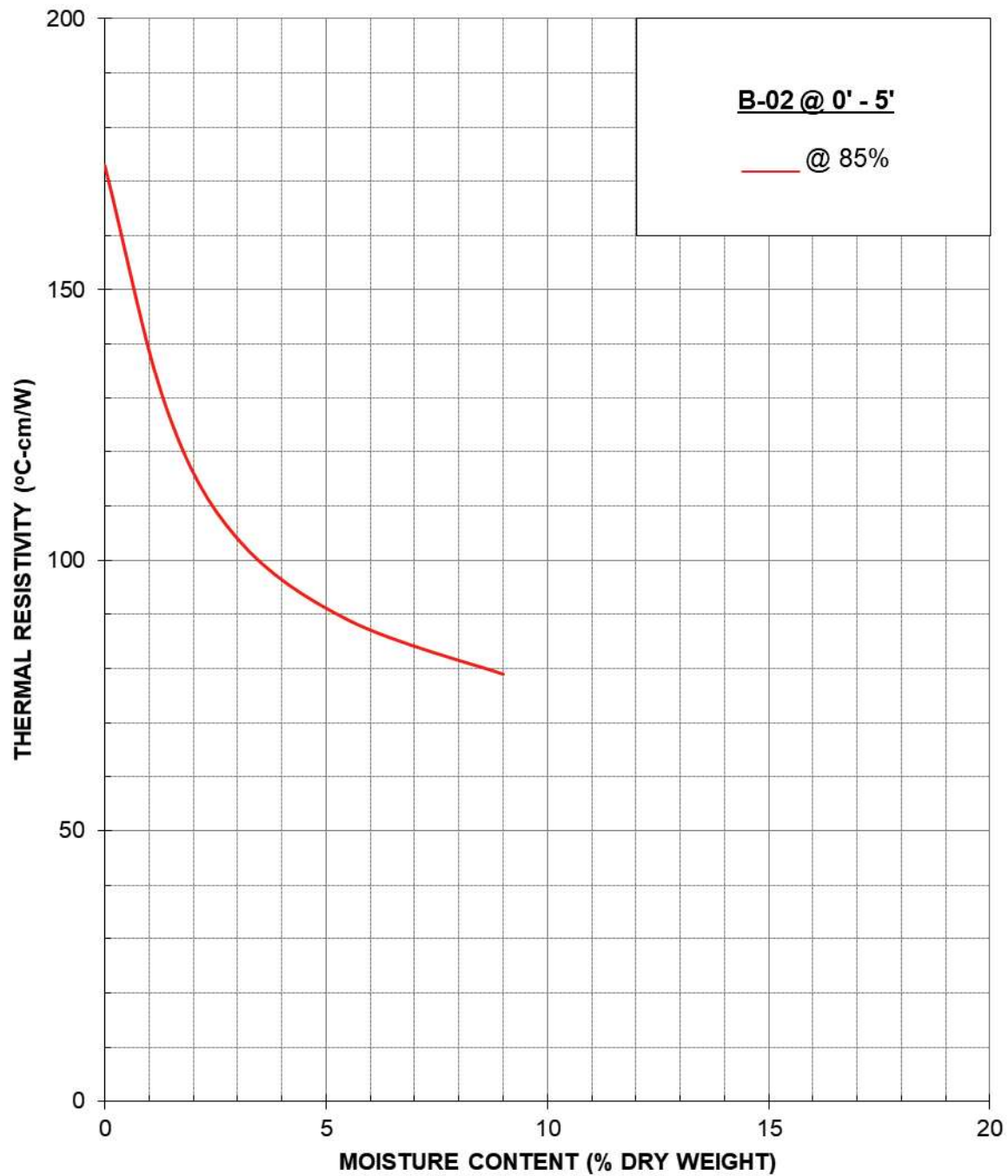
Please contact us if you have any questions or if we can be of further assistance.

Geotherm USA, LLC

A handwritten signature in black ink, appearing to read "Nimesh Patel", written over a faint, illegible background.

Nimesh Patel

THERMAL DRYOUT CURVE



Terracon (Project No. CB255153)

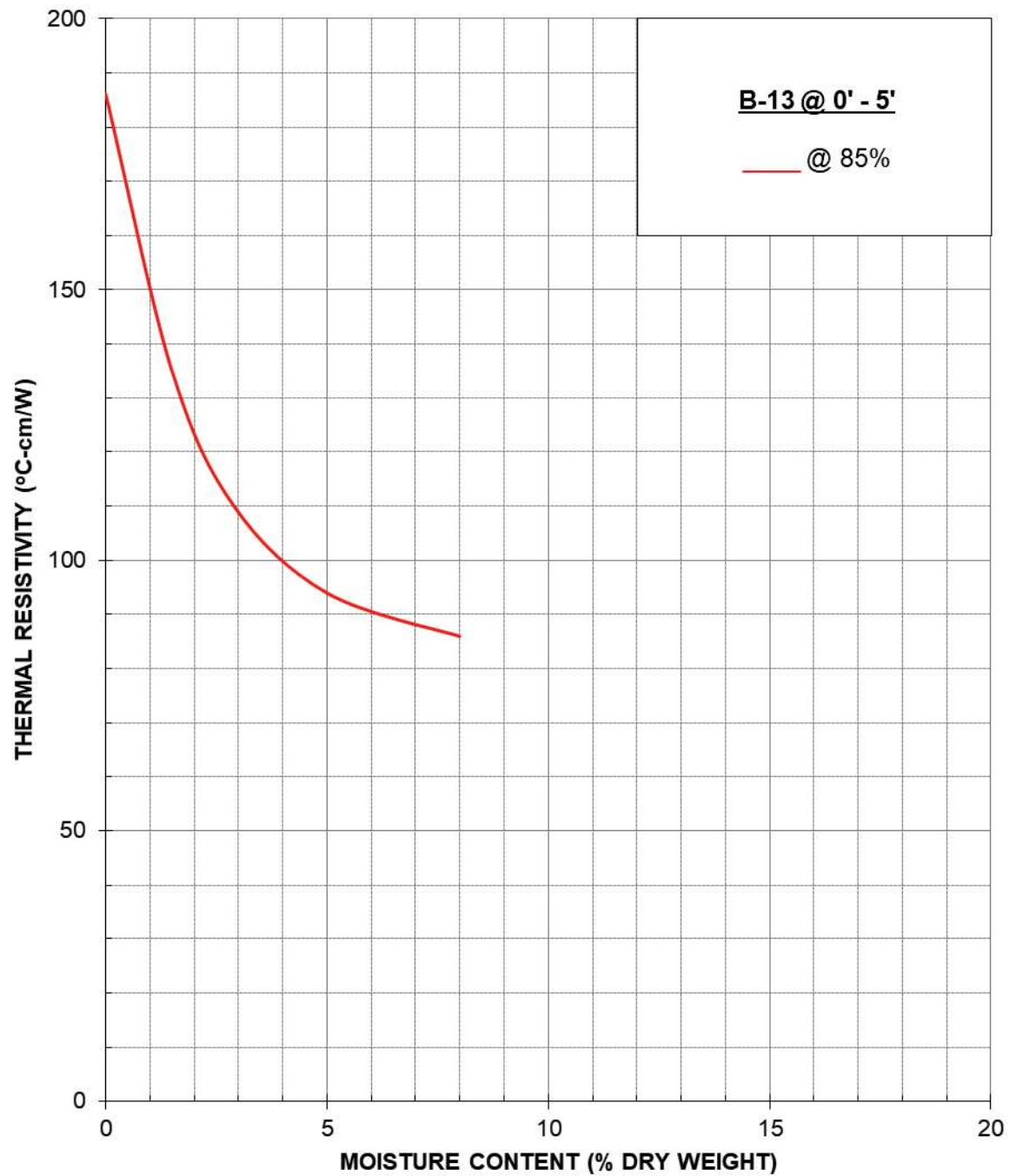
Savira Solar – Riverside County, CA

Thermal Resistivity Report

February 2026

Figure 1

THERMAL DRYOUT CURVE



Terracon (Project No. CB255153)

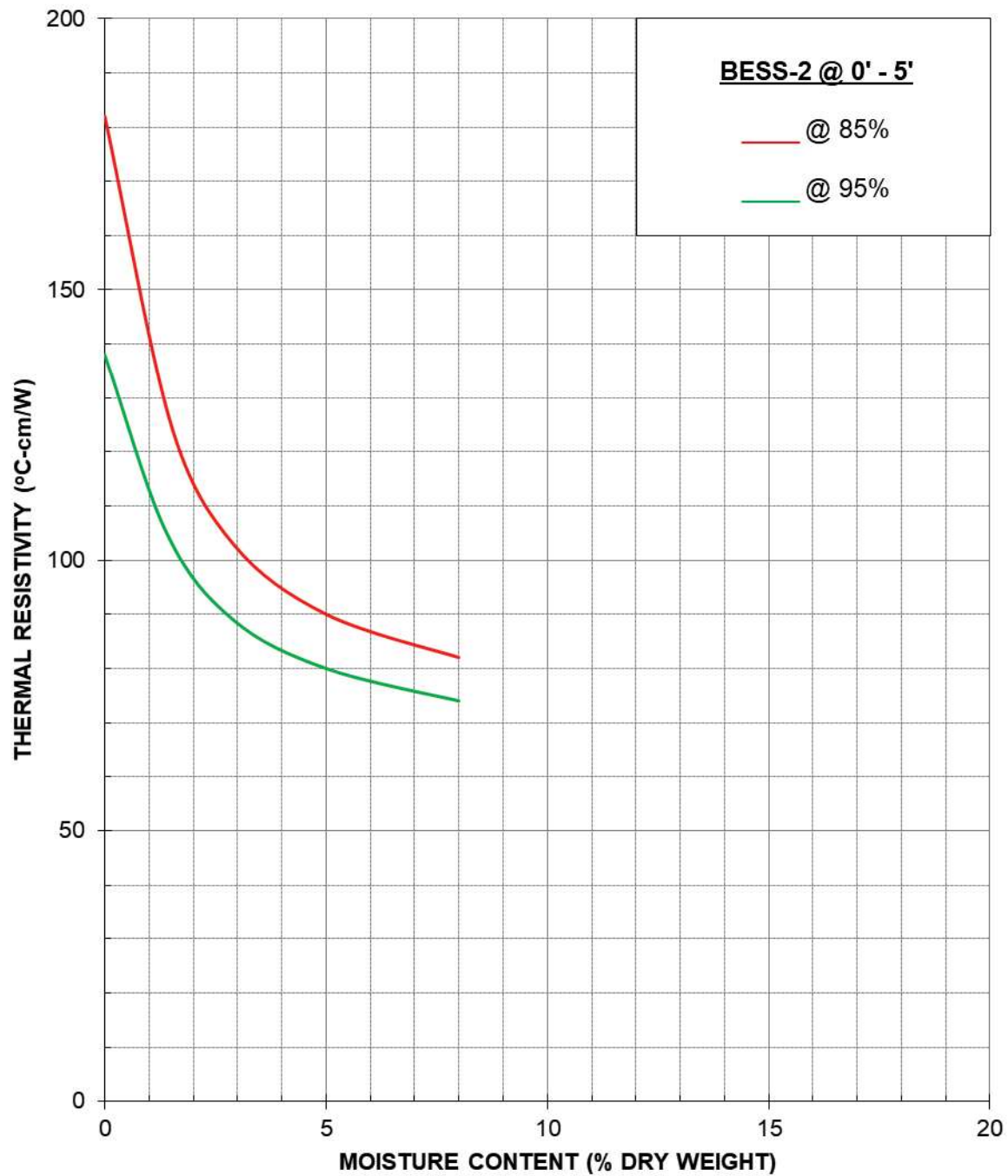
Savira Solar – Riverside County, CA

Thermal Resistivity Report

February 2026

Figure 2

THERMAL DRYOUT CURVES



Terracon (Project No. CB255153)

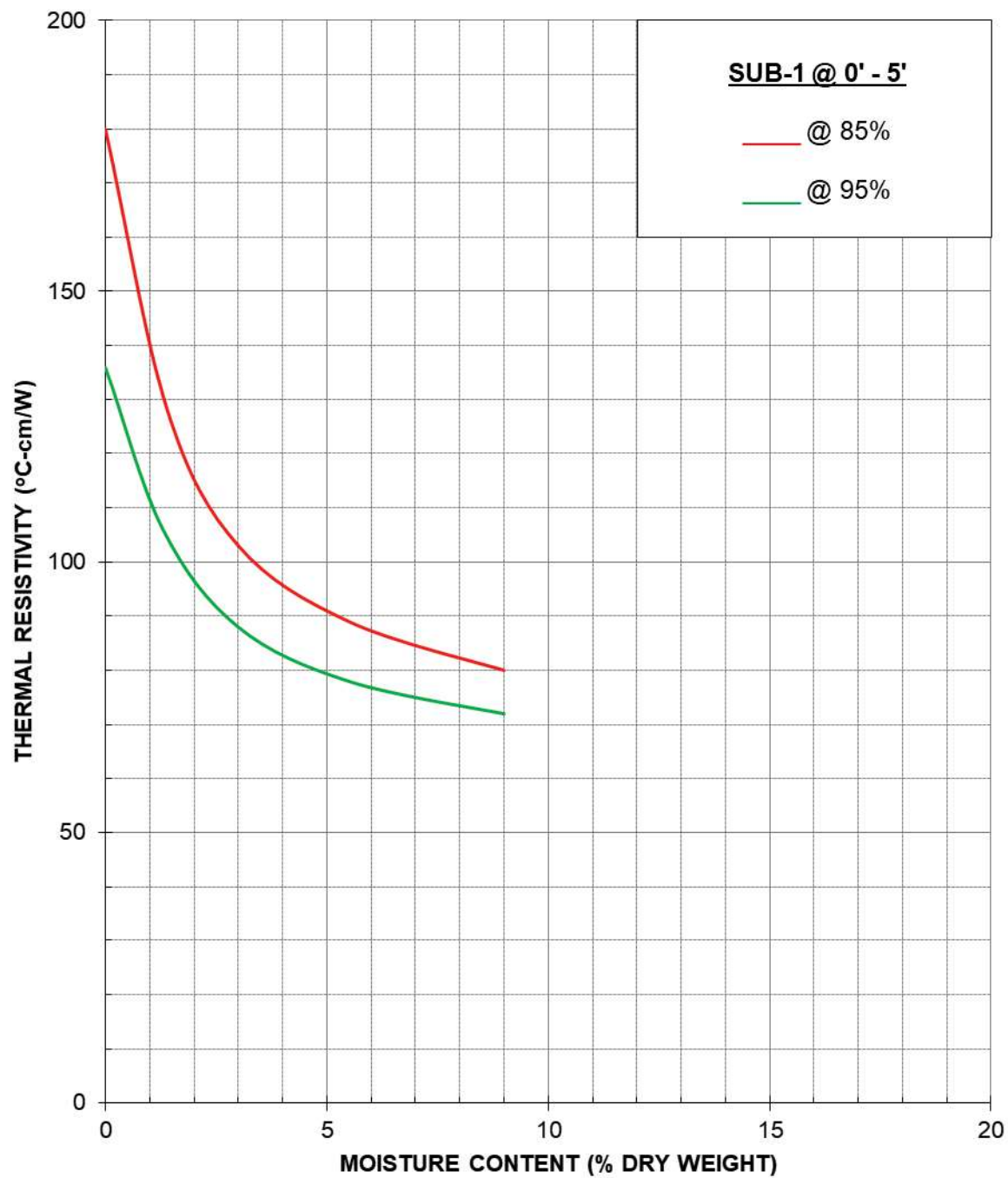
Savira Solar – Riverside County, CA

Thermal Resistivity Report

February 2026

Figure 3

THERMAL DRYOUT CURVES



Terracon (Project No. CB255153)

Savira Solar – Riverside County, CA

Thermal Resistivity Report

February 2026

Figure 4

Field Soil Electrical Resistivity Test Results

Contents:

Electrical Resistivity Test Procedures

Electrical Resistivity Results (12 pages)

*all contents are 1 page unless otherwise noted

Field Electrical Resistivity Test Procedures

Field measurements of soil electrical resistivity were performed by Terracon between January 12 to January 14, 2026. Field measurements of soil electrical resistivity were performed in general accordance with ASTM Test Method G 57, and IEEE Standard 81, using the Wenner Four-Electrode. The Wenner arrangement (equal electrode spacing) was used with the following “a” spacings:

- 2, 4, 6, 8, 10, and 20 feet (or to the maximum spacing permitted by site constraints) at 6 (six) locations within the solar array area
- 2, 4, 6, 8, 10, 25, 50, 75, 100, and 200 feet (or to the maximum spacing permitted by site constraints) at 4 (four) locations within the solar array area, one (1) location within the BESS area, and one (1) location within the substation area

The “a” spacing is generally considered to be the depth of influence of the test. The testing was performed in both a north-south and an east-west orientation at each location.



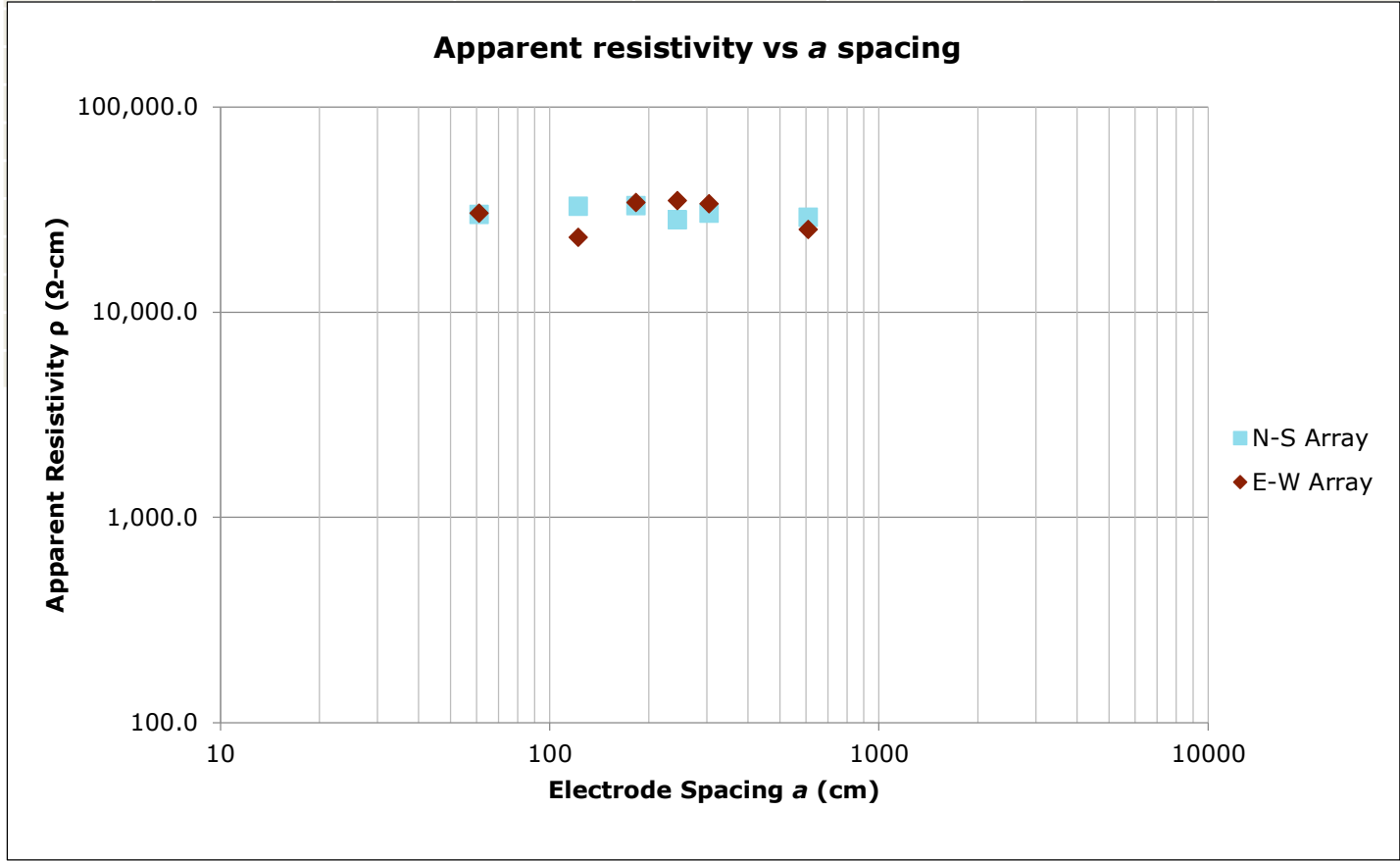
Array Loc.	FER-1 (33.7131, -115.2591)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 12, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)

Notes & Conflicts Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data.

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	77	29,970	78	30,390
4	122	2	5	43	32,880	30	23,170
6	183	4	10	29	33,070	30	34,290
8	244	4	10	18	28,180	23	34,980
10	305	6	15	16	30,370	18	33,740
20	610	6	15	7.6	29,080	6.6	25,270





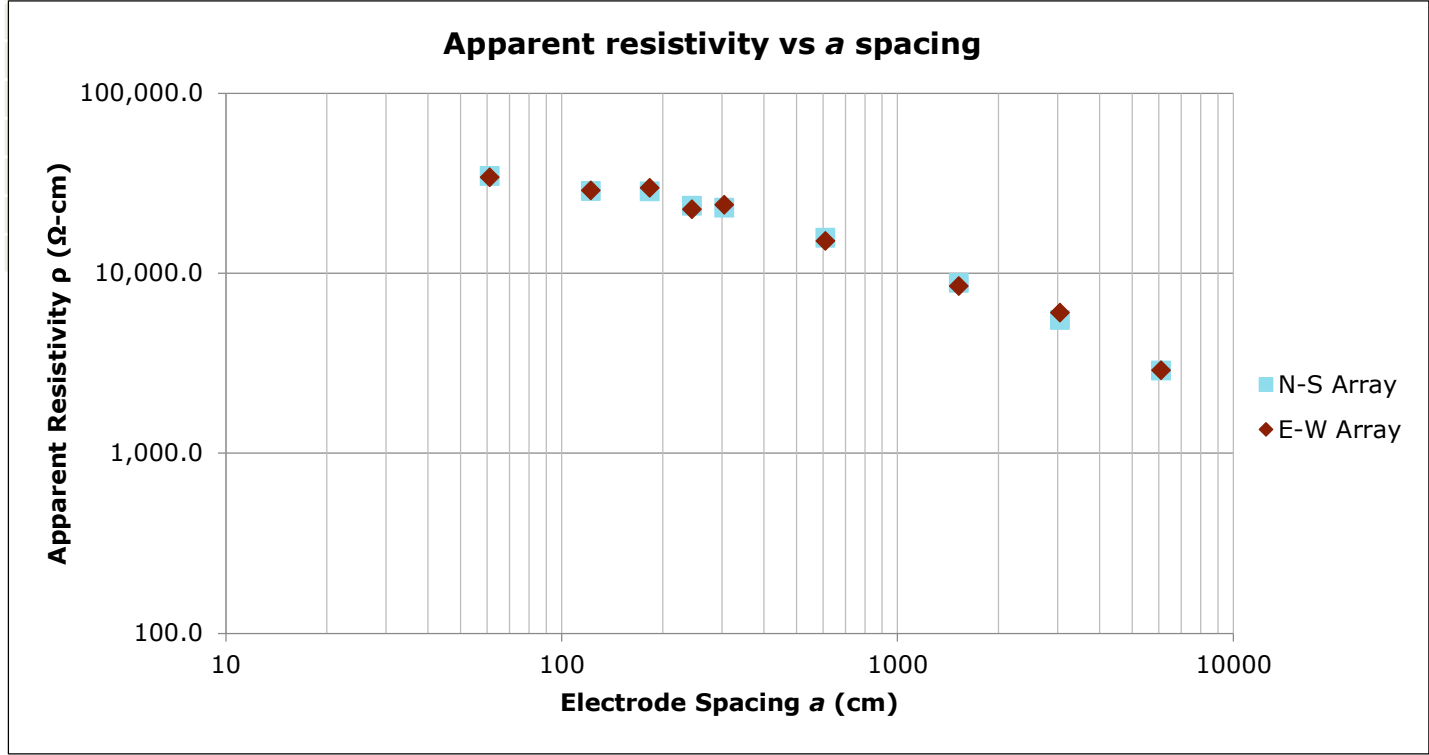
Array Loc.	FER-2 (33.7113, -115.2591)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 12, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)

Notes & Conflicts Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data.

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		NW-SE Test		NE-SW Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	90	34,720	88	34,120
4	122	2	5	37	28,630	38	28,900
6	183	4	10	25	28,480	26	29,850
8	244	4	10	15	23,660	15	22,620
10	305	6	15	12	23,110	12	24,040
20	610	6	15	4.1	15,710	3.9	15,110
50	1524	8	20	0.92	8,850	0.88	8,470
100	3,048	10	25	0.29	5,500	0.31	6,030
200	6,096	10	25	0.075	2,880	0.075	2,890



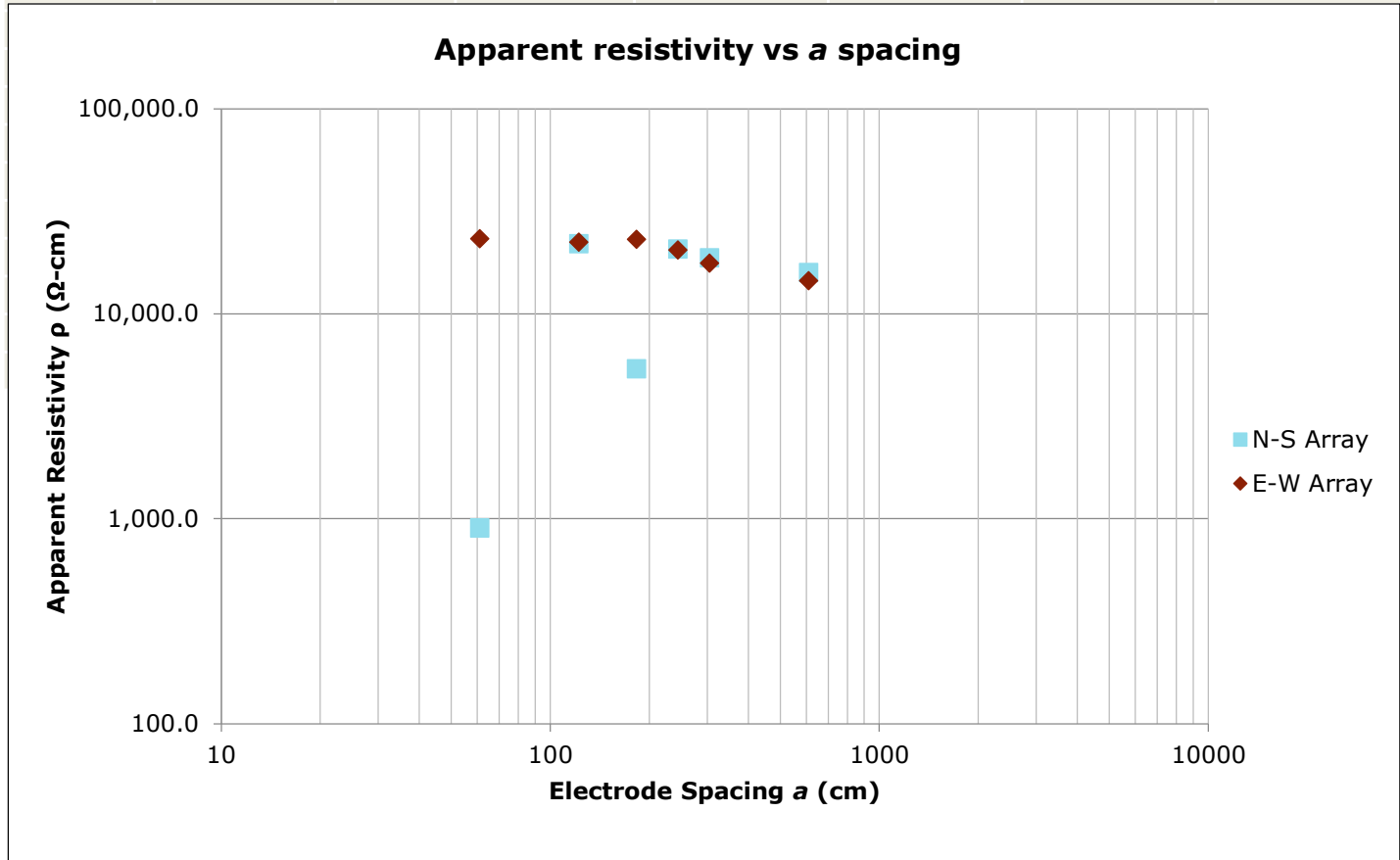


Array Loc.	FER-3 (33.7095, -115.2591)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 12, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data. Interference from unknown sources was observed in the highlighted cells. Highlighted readings are considered irregular.		

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	2.3	900	60	23,290
4	122	2	5	29	21,980	29	22,380
6	183	4	10	4.7	5,400	20	23,060
8	244	4	10	13	20,730	13	20,450
10	305	6	15	10	18,760	9.2	17,660
20	610	6	15	4.1	15,870	3.8	14,480





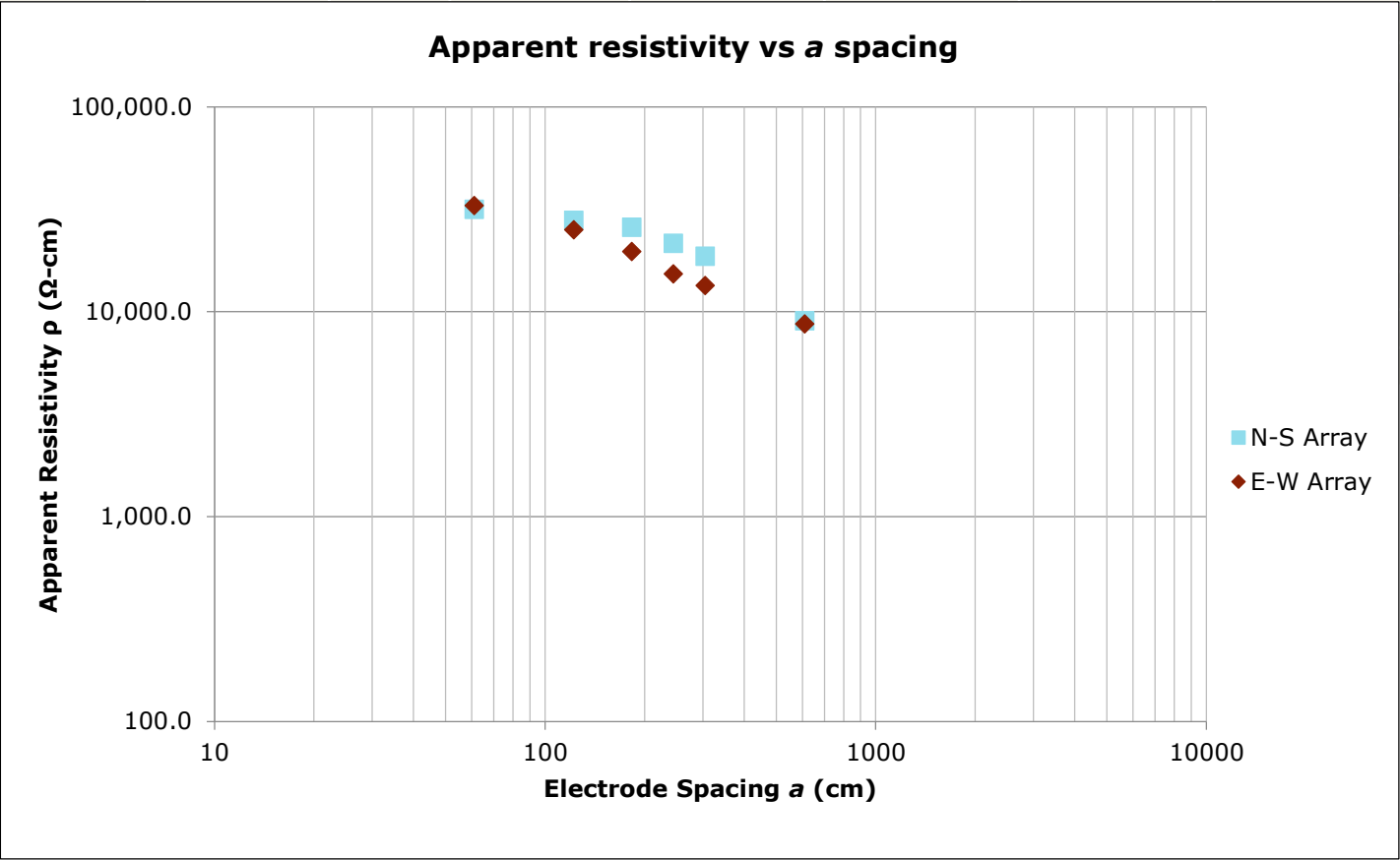
Array Loc.	FER-4 (33.7034, -115.2583)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 12, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)

Notes & Conflicts Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data.

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	82	31,650	85	32,940
4	122	2	5	36	27,940	33	25,120
6	183	4	10	22	25,840	17	19,650
8	244	4	10	14	21,570	10	15,290
10	305	6	15	10	18,670	7.0	13,430
20	610	6	15	2.4	9,020	2.3	8,720



FIELD ELECTRICAL RESISTIVITY TEST DATA

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Terracon Project No. CB255153



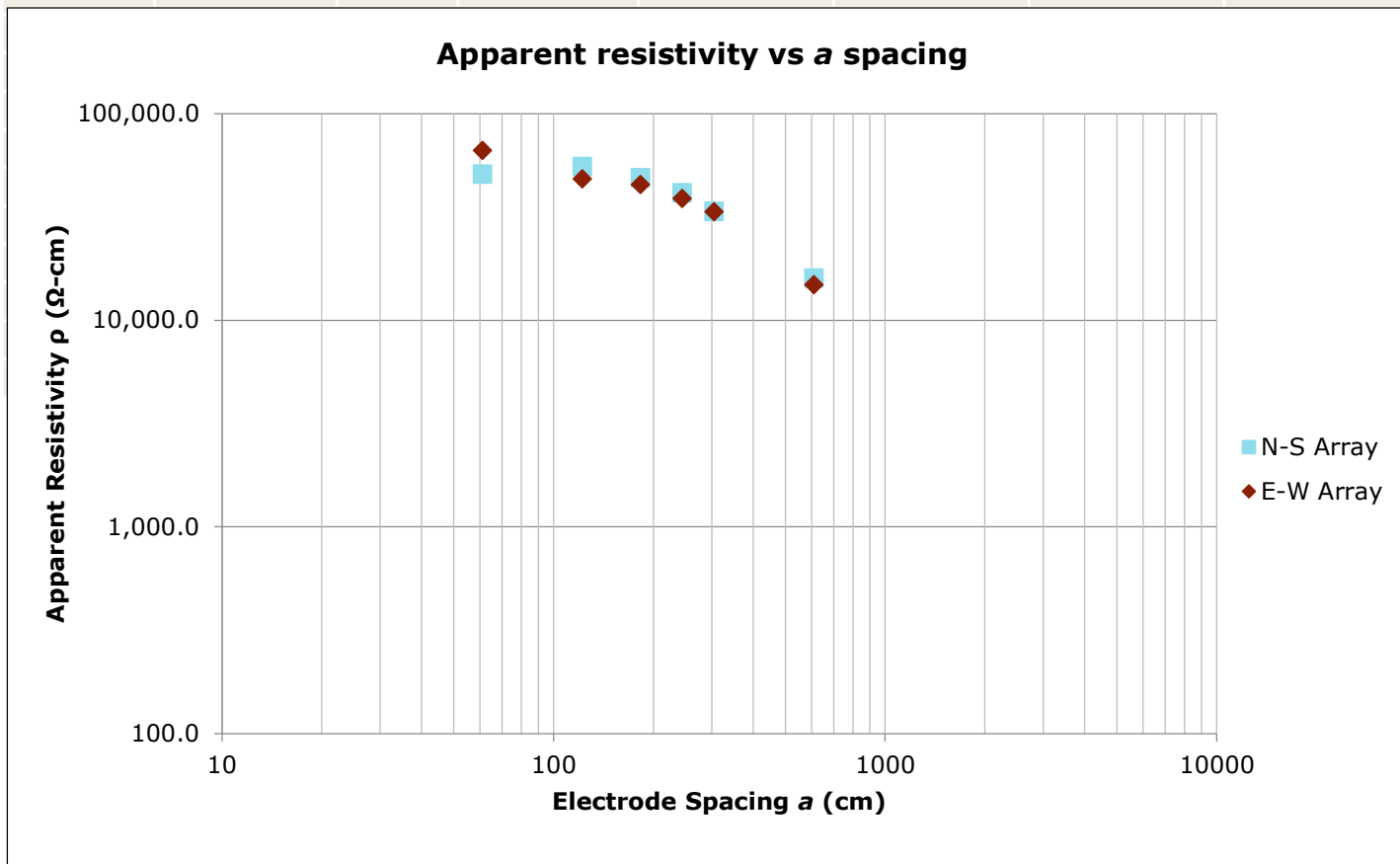
Array Loc.	FER-5 (33.7021, -115.2639)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 13, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)

Notes & Conflicts Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data.

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	131	50,950	171	66,460
4	122	2	5	72	55,580	63	48,430
6	183	4	10	42	48,870	39	45,370
8	244	4	10	27	41,410	25	38,900
10	305	6	15	17	33,660	17	33,520
20	610	6	15	4.2	16,000	3.9	14,880





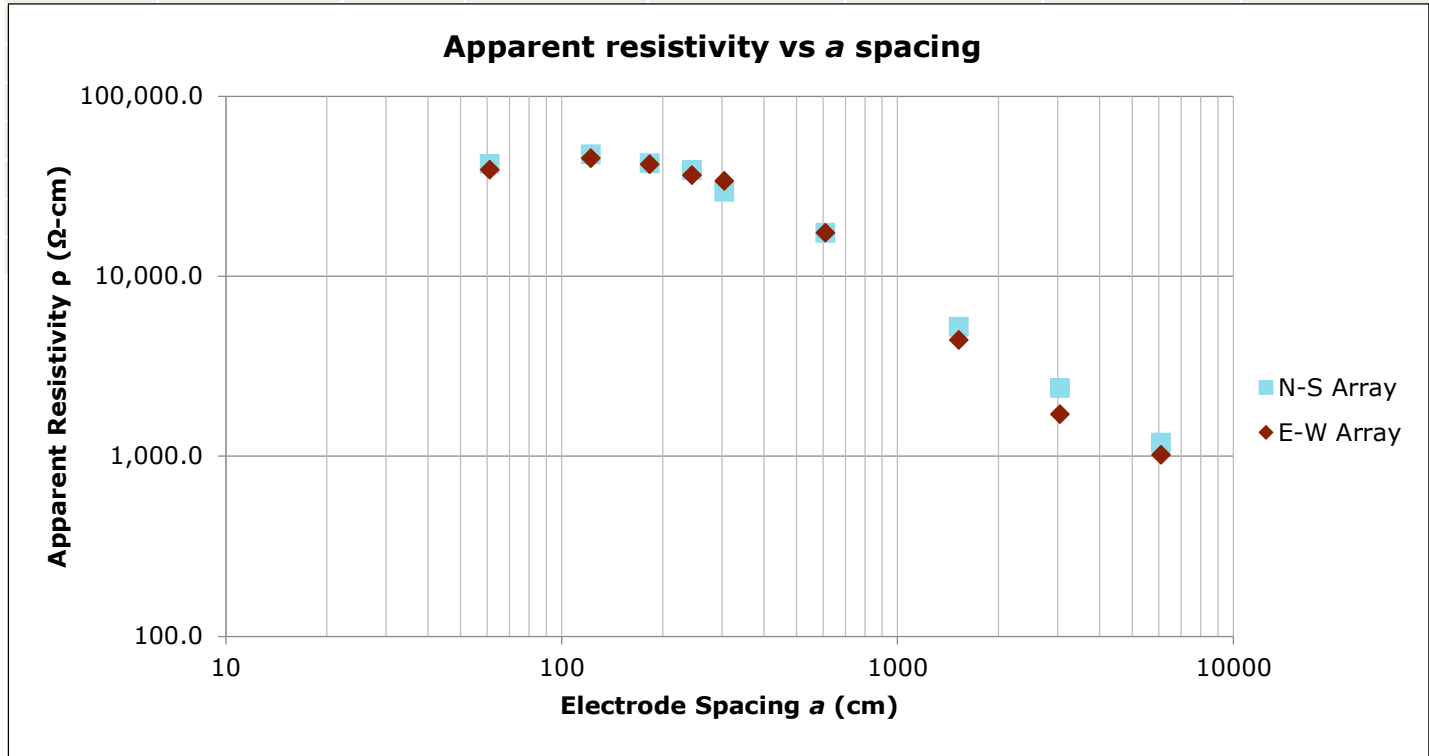
Array Loc.	FER-6 (33.6988, -115.2702)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 14, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)

Notes & Conflicts Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data.

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	109	42,110	101	39,080
4	122	2	5	62	47,500	59	45,290
6	183	4	10	37	42,460	36	41,850
8	244	4	10	25	38,920	24	36,430
10	305	6	15	15	29,460	18	33,810
20	610	6	15	4.5	17,410	4.5	17,430
50	1524	8	20	0.55	5,240	0.46	4,420
100	3,048	10	25	0.13	2,400	0.09	1,710
200	6,096	10	25	0.031	1,190	0.027	1,020





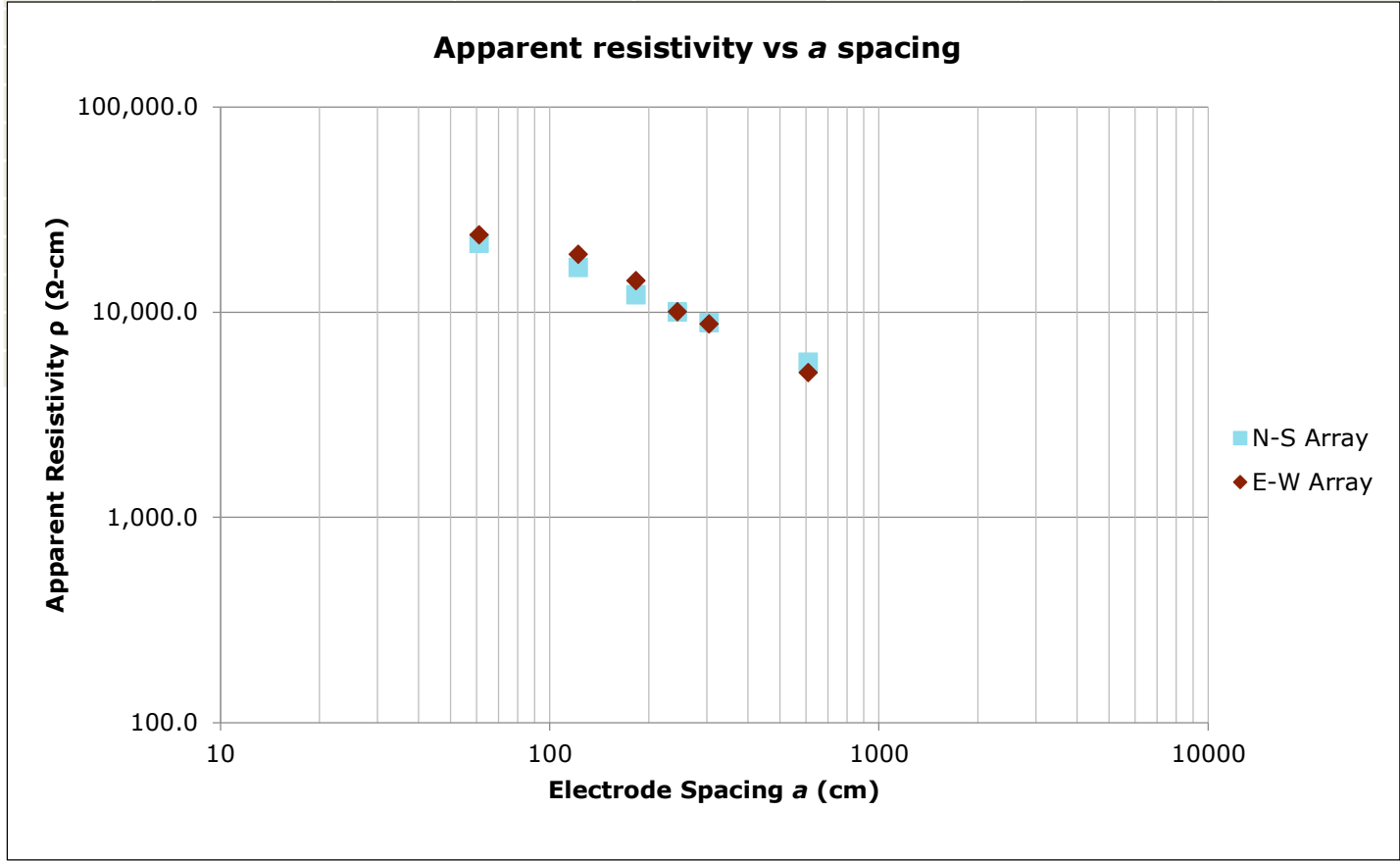
Array Loc.	FER-7 (33.6987, -115.2613)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 14, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)

Notes & Conflicts Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data.

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	56	21,700	62	23,870
4	122	2	5	21	16,510	25	19,170
6	183	4	10	11	12,170	12	14,260
8	244	4	10	6.5	10,030	6.5	10,050
10	305	6	15	4.6	8,880	4.6	8,770
20	610	6	15	1.5	5,710	1.3	5,070



FIELD ELECTRICAL RESISTIVITY TEST DATA

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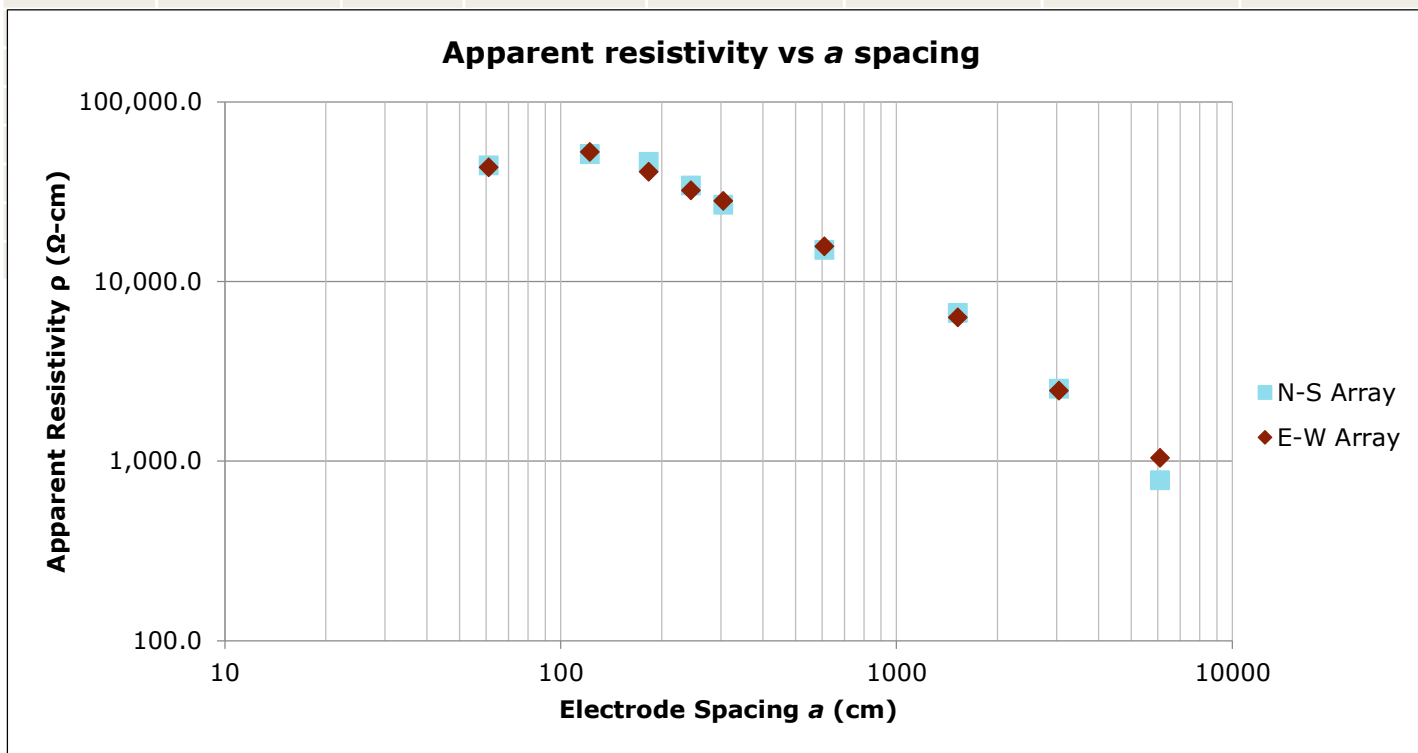


Array Loc.	FER-8 (33.6953, -115.2700)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 14, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)

Notes & Conflicts Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data.

Apparent resistivity ρ is calculated as :
$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		NW-SE Test		NE-SW Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	114	44,360	111	43,150
4	122	2	5	66	51,020	69	52,690
6	183	4	10	40	46,410	35	40,820
8	244	4	10	22	34,260	21	32,100
10	305	6	15	14	26,770	15	28,060
20	610	6	15	3.9	14,970	4.1	15,690
50	1524	8	20	0.70	6,690	0.66	6,310
100	3,048	10	25	0.13	2,530	0.13	2,460
200	6,096	10	25	0.020	780	0.027	1,040



FIELD ELECTRICAL RESISTIVITY TEST DATA

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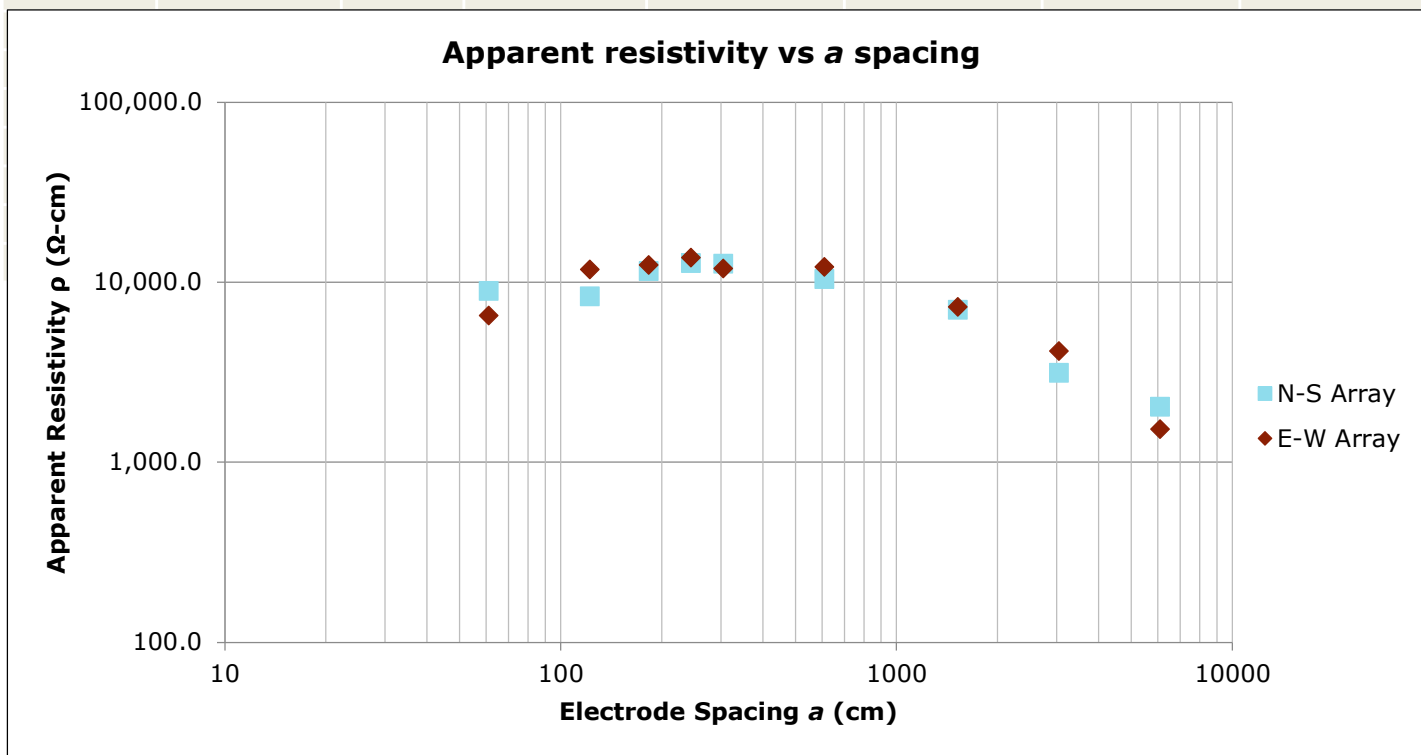
Array Loc.	FER-9 (33.6952, -115.2613)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 14, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)

Notes & Conflicts Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data.

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	23	8,940	17	6,540
4	122	2	5	11	8,330	15	11,790
6	183	4	10	10	11,530	11	12,480
8	244	4	10	8.3	12,750	8.9	13,680
10	305	6	15	6.6	12,650	6.2	11,920
20	610	6	15	2.7	10,390	3.2	12,170
50	1524	8	20	0.73	7,030	0.76	7,300
100	3,048	10	25	0.16	3,140	0.22	4,140
200	6,096	10	25	0.053	2,030	0.040	1,530





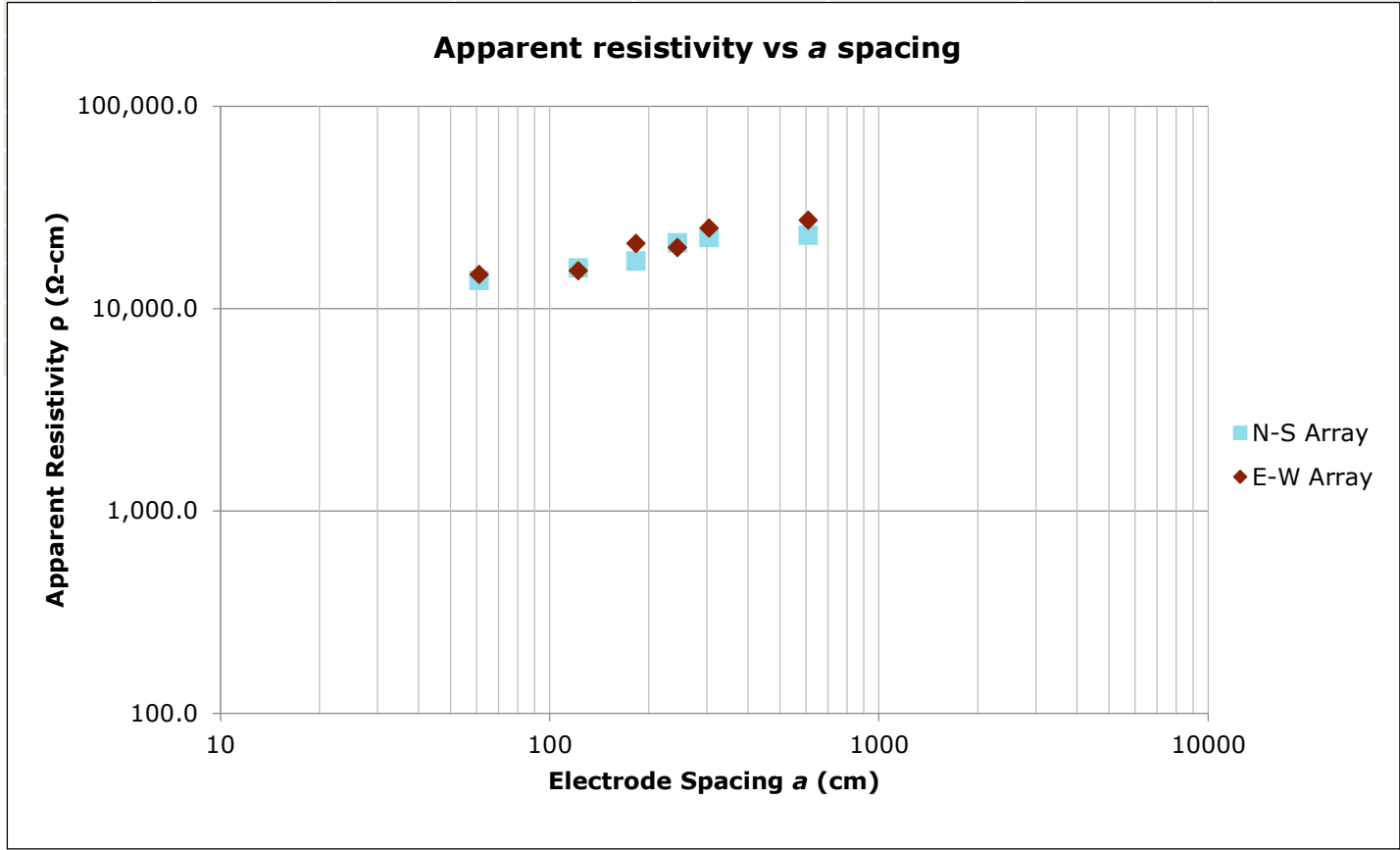
Array Loc.	FER-10 (33.6925, -115.2677)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 14, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)

Notes & Conflicts Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data.

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		NW-SE Test		NE-SW Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	35	13,750	38	14,730
4	122	2	5	21	15,870	20	15,380
6	183	4	10	15	17,150	18	20,980
8	244	4	10	14	21,160	13	20,000
10	305	6	15	12	22,480	13	24,980
20	610	6	15	6.0	23,020	7.1	27,360



FIELD ELECTRICAL RESISTIVITY TEST DATA

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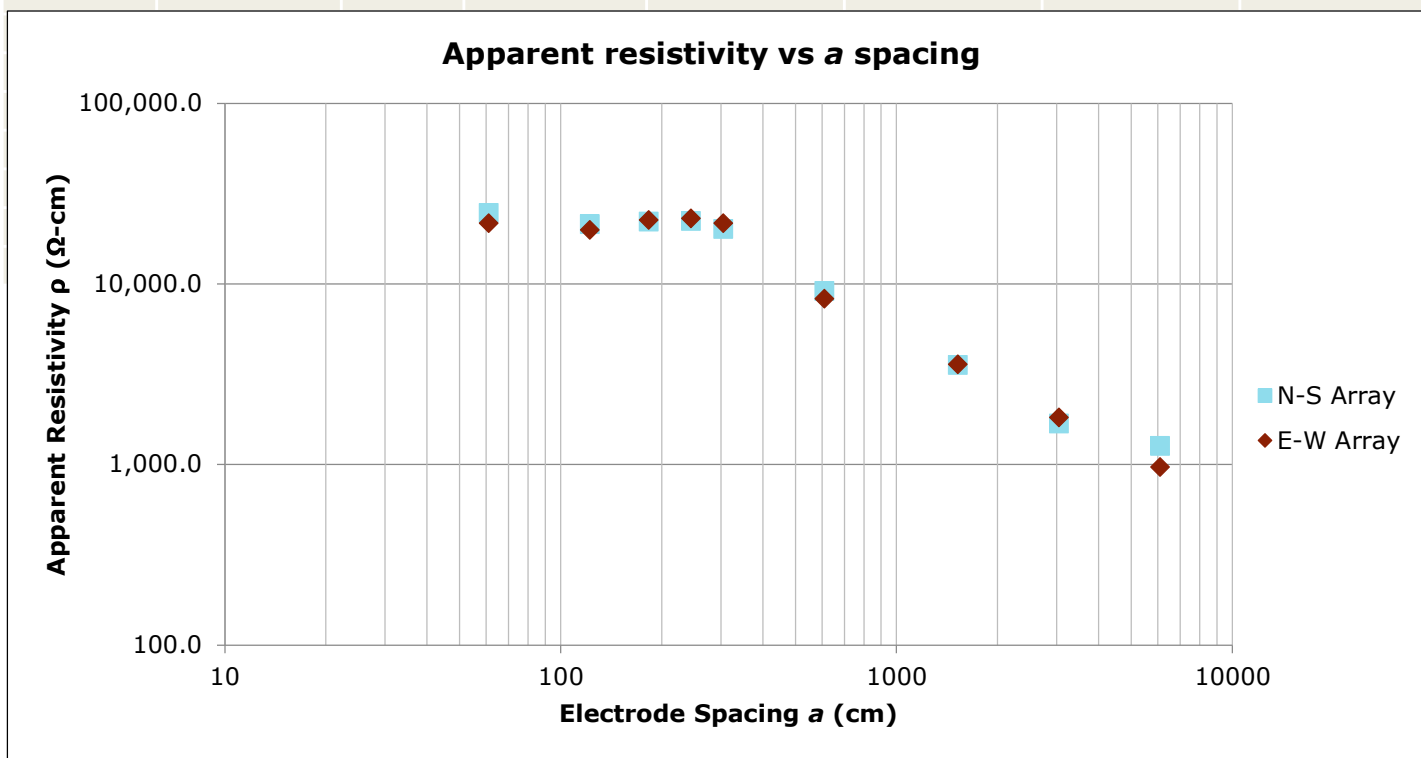


Array Loc.	SUB-FER-1 (33.7015, -115.2598)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 13, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data. Interference from unknown sources was observed in the highlighted cells. Highlighted readings are considered irregular.		

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	64	24,700	56	21,740
4	122	2	5	28	21,480	26	19,960
6	183	4	10	19	22,160	20	22,650
8	244	4	10	15	22,330	15	23,050
10	305	6	15	10	20,150	11	21,750
20	610	6	15	2.4	9,150	2.2	8,280
50	1524	8	20	0.37	3,560	0.37	3,590
100	3,048	10	25	0.088	1,690	0.095	1,820
200	6,096	10	25	0.033	1,270	0.025	970





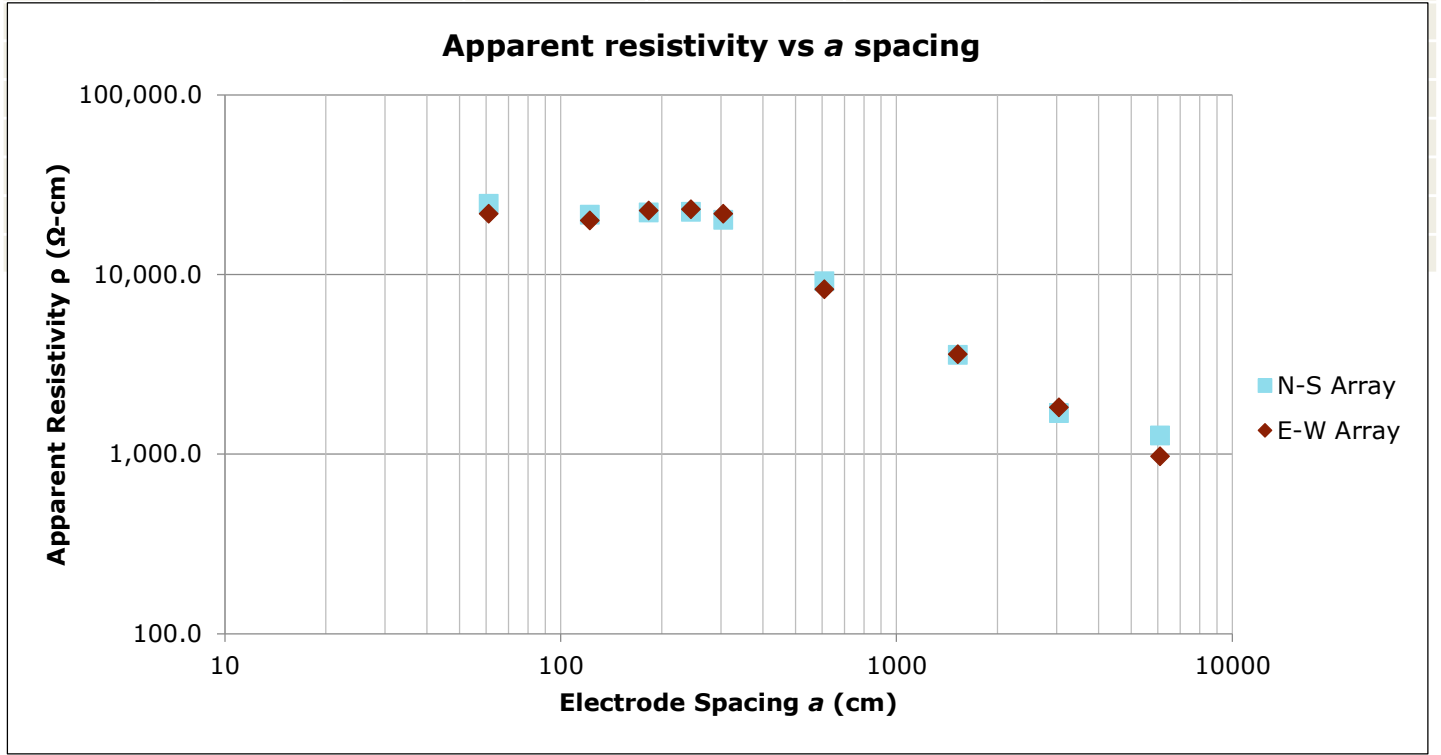
Array Loc.	BEES-FER-1 (33.7015, -115.2614)		
Instrument	Mini-Sting	Weather	Sunny
Serial #	SS0603179	Ground Cond.	Exposed Soil
Calib. Due	July 25, 2026	Tested By	AL/RN
Test Date	January 13, 2026	Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)

Notes & Conflicts Electrode depths were increased for shorter spacings to achieve more conductivity in order to obtain higher quality data.

Apparent resistivity ρ is calculated as :

$$\rho = \frac{4\pi aR}{1 + \frac{2a}{\sqrt{a^2 + 4b^2}} - \frac{a}{\sqrt{a^2 + b^2}}}$$

Electrode Spacing a		Electrode Depth b		N-S Test		E-W Test	
(feet)	(centimeters)	(inches)	(centimeters)	Measured Resistance R	Apparent Resistivity ρ	Measured Resistance R	Apparent Resistivity ρ
				Ω	(Ω -cm)	Ω	(Ω -cm)
2	61	2	5	64	24,700	56	21,740
4	122	2	5	28	21,480	26	19,960
6	183	4	10	19	22,160	20	22,650
8	244	4	10	15	22,330	15	23,050
10	305	6	15	10	20,150	11	21,750
20	610	6	15	2.4	9,150	2.2	8,280
50	1524	8	20	0.37	3,560	0.37	3,590
100	3,048	10	25	0.088	1,690	0.095	1,820
200	6,096	10	25	0.033	1,270	0.025	970



Supporting Information

Contents:

General Notes
Unified Soil Classification System
Test Pit Photography Log

Note: All attachments are one page unless noted above.

General Notes

Sampling			Water Level		Field Tests	
	Auger Cuttings		Modified California Ring Sampler		Rock Core	N Standard Penetration Test Resistance (Blows/Ft.)
	Dynamic Cone Penetrometer		Modified Dames & Moore Ring Sampler		Dual Sampler SPT	(HP) Hand Penetrometer
	Grab Sample		GeoProbe Macro Core or Large Bore		No Recovery	(T) Torvane
	Ring Sampler		Shelby Tube		Standard Penetration Test	(DCP) Dynamic Cone Penetrometer
	Split Spoon		Texas Cone Penetrometer		Vane Shear	UC Unconfined Compressive Strength
			 Water Initially Encountered  Water Level After a Specified Period of Time  Water Level After a Specified Period of Time  Cave In Encountered		(PID) Photo-Ionization Detector	
			Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.		(OVA) Organic Vapor Analyzer	

Descriptive Soil Classification

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

Location And Elevation Notes

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Strength Terms

Relative Density of Coarse-Grained Soils (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		Consistency of Fine-Grained Soils (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Relative Density	Standard Penetration or N-Value (Blows/Ft.)	Consistency	Unconfined Compressive Strength Qu (tsf)	Standard Penetration or N-Value (Blows/Ft.)
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	5 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	9 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	16 - 30
		Hard	> 4.00	> 30

Relevance of Exploration and Laboratory Test Results

Exploration/field results and/or laboratory test data contained within this document are intended for application to the project as described in this document. Use of such exploration/field results and/or laboratory test data should not be used independently of this document.

Unified Soil Classification System

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests ^A				Soil Classification		
				Group Symbol	Group Name ^B	
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	Gravels: More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels: Less than 5% fines ^C	$Cu \geq 4$ and $1 \leq Cc \leq 3$ ^E	GW	Well-graded gravel ^F	
			$Cu < 4$ and/or $[Cc < 1 \text{ or } Cc > 3.0]$ ^E	GP	Poorly graded gravel ^F	
		Gravels with Fines: More than 12% fines ^C	Fines classify as ML or MH	GM	Silty gravel ^{F, G, H}	
			Fines classify as CL or CH	GC	Clayey gravel ^{F, G, H}	
	Sands: 50% or more of coarse fraction passes No. 4 sieve	Clean Sands: Less than 5% fines ^D	$Cu \geq 6$ and $1 \leq Cc \leq 3$ ^E	SW	Well-graded sand ^I	
			$Cu < 6$ and/or $[Cc < 1 \text{ or } Cc > 3.0]$ ^E	SP	Poorly graded sand ^I	
		Sands with Fines: More than 12% fines ^D	Fines classify as ML or MH	SM	Silty sand ^{G, H, I}	
			Fines classify as CL or CH	SC	Clayey sand ^{G, H, I}	
Fine-Grained Soils: 50% or more passes the No. 200 sieve	Silts and Clays: Liquid limit less than 50	Inorganic:	$PI > 7$ and plots above "A" line ^J	CL	Lean clay ^{K, L, M}	
			$PI < 4$ or plots below "A" line ^J	ML	Silt ^{K, L, M}	
		Organic:	$\frac{LL \text{ oven dried}}{LL \text{ not dried}} < 0.75$	OL	Organic clay ^{K, L, M, N} Organic silt ^{K, L, M, O}	
	Silts and Clays: Liquid limit 50 or more	Inorganic:	PI plots on or above "A" line	CH	Fat clay ^{K, L, M}	
			PI plots below "A" line	MH	Elastic silt ^{K, L, M}	
			Organic:	$\frac{LL \text{ oven dried}}{LL \text{ not dried}} < 0.75$	OH	Organic clay ^{K, L, M, P} Organic silt ^{K, L, M, Q}
Highly organic soils:	Primarily organic matter, dark in color, and organic odor			PT	Peat	

^A Based on the material passing the 3-inch (75-mm) sieve.

^B If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

^C Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

^D Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

^E $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$

^F If soil contains $\geq 15\%$ sand, add "with sand" to group name.

^G If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

^H If fines are organic, add "with organic fines" to group name.

^I If soil contains $\geq 15\%$ gravel, add "with gravel" to group name.

^J If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

^K If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

^L If soil contains $\geq 30\%$ plus No. 200 predominantly sand, add "sandy" to group name.

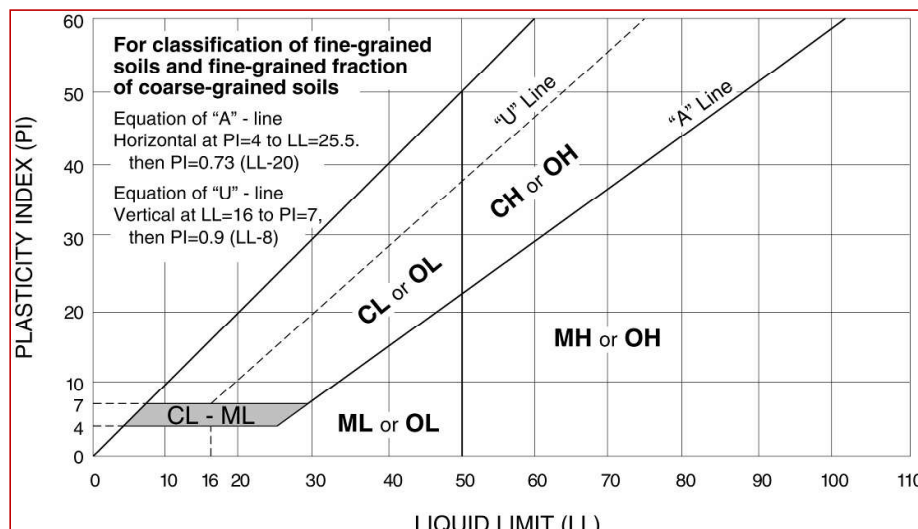
^M If soil contains $\geq 30\%$ plus No. 200, predominantly gravel, add "gravelly" to group name.

^N $PI \geq 4$ and plots on or above "A" line.

^O $PI < 4$ or plots below "A" line.

^P PI plots on or above "A" line.

^Q PI plots below "A" line.



Photography Log



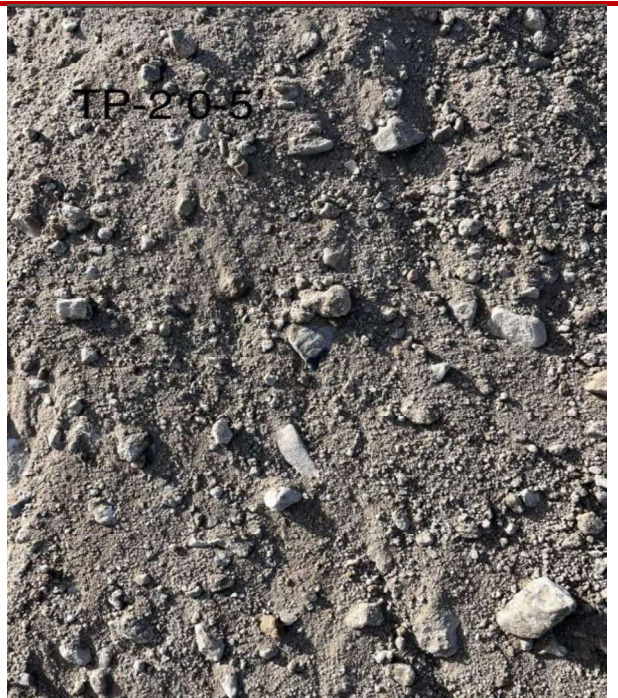
TP-1



TP-1; Depth 0-6'



TP-1



TP-2; Depth 0-5'

Preliminary Geotechnical Engineering Report

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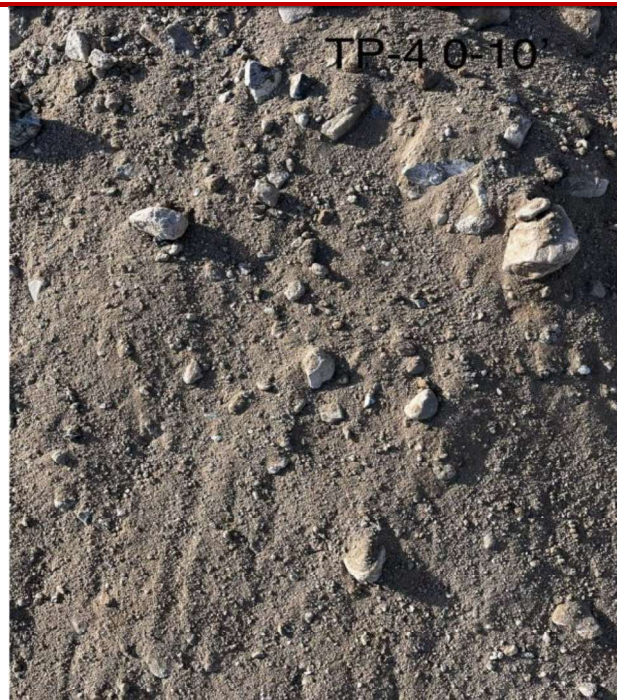
TP-3



TP-3; Depth 0-10'



TP-4



TP-4; Depth 0-10'

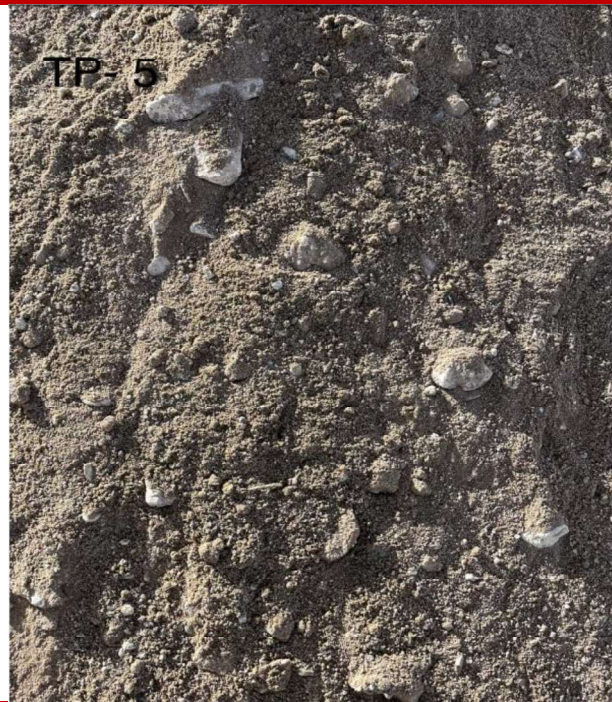
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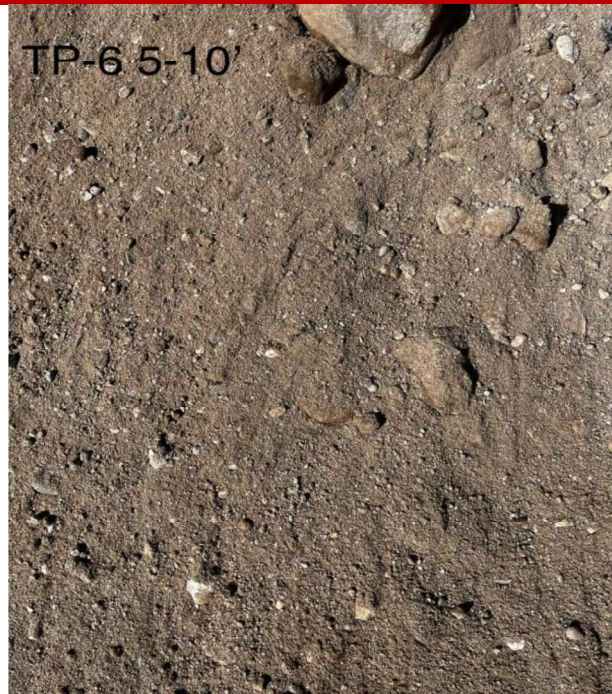
TP-5



TP-5; Depth 0-10'



TP-6

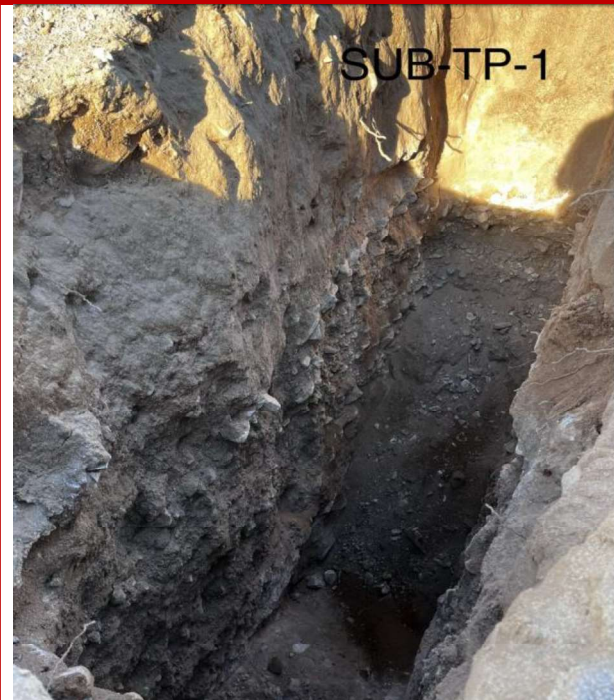


TP-6; Depth 5-10'

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Sub-TP-1



Sub-TP-1; Depth 0-10'



BESS-TP-1



BESS-TP-1; Depth 0-10'