Appendix E
(Available on City website)

Geotechnical Engineering Report
February 2022

Geotechnical Engineering Report

Desert Peak 230-34.5kV Collector Substation, BESS, and Transmission
Palm Springs, Riverside County, California

February 15, 2022
Terracon Project No. 60215222

Prepared for:
NextEra Energy Resources LLC
Juno Beach, Florida

Prepared by:
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February 15, 2022

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Re: Geotechnical Engineering Report
Desert Peak 230-34.5kV Collector Substation, BESS, and Transmission
Palm Springs, Riverside County, California
Terracon Project No. 60215222

Dear Mr. Spranzo:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. P60215222 dated September 9, 2021 and revised on September 20, 2021. This report provides a description of subsurface exploration and laboratory testing. Based on field and laboratory test results, this report provides geotechnical engineering recommendations concerning earthwork and the design and construction of the proposed substation, Battery Energy Storage System (BESS), and overhead transmission line point of connection.

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 Consultants, Inc.

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REPORT TOPICS

INTRODUCTION 1
SITE CONDITIONS 1
PROJECT DESCRIPTION 2
GEOTECHNICAL CHARACTERIZATION 3
SEISMIC CONSIDERATIONS 6
LIQUEFACTION 7
CORROSIVITY 9
PILE LOAD TEST PROCEDURES 9
GEOTECHNICAL OVERVIEW 11
EARTHWORK 12
FOUNDATIONS 17
ACCESS ROADWAYS 22
GENERAL COMMENTS 24

Note: This report was originally delivered in a web-based format. Orange 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 *GeoReport* logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

SITE LOCATION AND EXPLORATION PLANS

- Site Location Plan 34
- Exploration Plans 34-38

EXPLORATION RESULTS

- Boring logs 40-76
- Field Electrical Resistivity Test Results 77-83
- Atterberg Limits 84
- Grain Size Analyses 85-88
- Direct Shear 89
- Moisture Density Relationship 90-94
- Corrosivity 95-96
- Laboratory Thermal Resistivity 97-103
- Pile Embedment and Drive Times 104
- Pile Load Test Summary 105-107
- Lateral Pile Load Test Data 108-119
- Axial Tension Pile Load Test Data 120-131
- Axial Compression Pile Load Test Data 132-143

SUPPORTING INFORMATION

- General Notes 145
- Unified Soil Classification System 146
- Liquefaction Analyses 147-154
- LPILE Analyses 155-164
- SHAFT Analyses 165-168
- Fault Hazard Study Report 169-185

Geotechnical Engineering Report

Desert Peak 230-34.5kV Collector Substation, BESS, and Transmission
Palm Springs, Riverside County, California
Terracon Project No. 60215222
February 15, 2022

INTRODUCTION

This report presents the results of our geotechnical engineering services performed for the proposed Substation, Battery Energy Storage System, and Transmission Line to be located near the intersection of Dillon Road and Diablo Road near Palm Springs, Riverside County, California. The purpose of these services is to provide information and geotechnical engineering recommendations relative to subsurface conditions and construction of the proposed development.

The geotechnical engineering Scope of Services for our current scope of work included the following:

- Eighteen (18) borings to depths of 5 to 51½ feet below ground surface (bgs)
- Twelve (12) test pits to depths of 6 to 11 feet within onsite stockpiles
- Seven (7) in-situ electrical resistivity tests
- Five (5) standard proctor tests on samples of combined soils from 0 to 5 feet bgs
- Five (5) corrosion analysis tests
- Ten (10) laboratory thermal resistivity tests from five (5) locations
- Moisture Content, Passing #200 Sieve, Grain Size Analysis, Atterberg Limits, and Direct Shear laboratory testing
- Installation of 24 test piles at 6 locations
- Axial tension and lateral pile load testing on 12 test piles
- Axial compression testing on 12 test piles
- Removal of 24 test piles

Maps showing the site and boring, test pit, electrical resistivity and pile load test locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs and as separate graphs in the **Exploration Results** section.

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	Based on the provided information, the proposed project will occupy a square shaped parcel located near the intersection of Dillon Rd and Diablo Rd near Palm Springs and Desert Hot Springs, Riverside County, California. The coordinates of the approximate center of the parcel are as follows: 33.92863°N, 116.57527°W.
Existing Improvements	The majority the parcel is undeveloped, with portions being utilized by five (5) large wind turbine generators (WTG). Numerous small WTGs are located in the south east portion of the project site. It is our understanding these will be demolished and removed and are nonoperational. The eastern portion of the site is currently a graded aggregate surfaced parking or laydown area. Several transmission lines also traverse the site.
Current Ground Cover	The site is covered with exposed soils with sparse desert vegetation. Numerous stock piles were encountered at the site, primarily in the eastern portion of the site. Test pits were performed to assess stockpile material.
Existing Topography (from Google Earth)	The site is relatively flat.

PROJECT DESCRIPTION

Item	Description
Provided Documents	Geotechnical Specification for NextEra Energy Resources prepared by Electrical Consultants, Inc. for Desert Peak Project - Desert Peak 230-34.5kv Collector Substation, Battery Energy Storage System & Transmission.
Proposed Project	It is our understanding that the Client intends to develop a 230-34.5kV Substation, Battery Energy Storage System (BESS), and overhead transmission line point of connection. The proposed project will occupy approximately 60 acres.
Proposed Structure	Based on the Geotechnical Specification for this project, BESS facilities will include electrical self-contained structures supported with either gravel pad foundation or driven steel piles. Steel piles are anticipated to be W6x9 wide flange steel, or similar. Substation facilities will include electrical structures supported with either spread footing, slab on grade, or drilled shaft foundations. Transmission towers will include steel poles supported with either drilled shaft or direct embed foundations.

Item	Description
Anticipated Maximum Loads (Provided by the client)	Substation: ■ Deep foundation overturning loads are anticipated to exceed moments and ground line shear forces of 500 foot-kips and 10 kips respectively. ■ Slab foundation axial loads are anticipated to exceed 600 kips. The maximum loads should be provided prior to mobilization. BESS Facility: ■ Driven steel piles are anticipated to exceed shear and axial loading of 4.5 kips and 7.5 kips respectively, at the top of pile. Transmission Line Point of Connection: ■ Drilled shaft overturning loads are anticipated to reach moments of 15,000 foot-kips and direct embed foundation loads are anticipated to reach moments of 1,500 foot-kips.
Grading	We anticipate that the final grades of the substation, BESS, and the overhead transmission line will generally follow the existing site grades with minimal grading.
Access Roadways	Based on previous projects performed for NextEra, we anticipate low-volume, aggregate-surfaced and native soil access roads. It is assumed substation access roads or heavy haul vehicle areas will have a maximum vehicle load of 75,000 lbs.

GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface soil and groundwater conditions based upon our review of the data and our understanding of the geologic setting and planned construction.

The geotechnical characterization forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. As noted in **General Comments**, the characterization is based upon widely spaced exploration points across the site, and variations are likely.

Subsurface Conditions

Based on the results of the borings performed during this exploration, the subsurface materials encountered generally consisted of medium dense to very dense sand with varying amounts of silt and gravel to the maximum depth of exploration of 51½ feet bgs. Undocumented fill soils were encountered in select borings on site.

Based on visits to the site, a total of nine (9) stockpiles were encountered. Based on our discussions with the design team, six (6) of the stockpiles of soil/concrete and cobble materials located on site were sampled and assessed to check potential viability in reuse of this material as engineered fill for the grading of the site. It should be noted that sampling of the pits was limited and deleterious or unsuitable may be encountered in these test pits during construction. A representative of the

geotechnical engineer should be present to observe the processing and sample the material that is proposed to be reused as fill on-site. A map showing the locations of the various stockpiles is included in the **Site Location** and **Exploration Plan** section of this report. The six stockpiles varied in size and material as described below:

- Stockpile 1: Approximately 150 ft x 100 ft wide and 1 ft to 3 ft tall consisting of sand with varying amounts of silt, gravel, and cobbles and gravel with varying amounts of sand and silt
- Stockpile 3: Approximately 180 ft x 100 ft wide and 3 ft to 10 ft tall consisting of sand with varying amounts of silt, gravel, and cobbles
- Stockpile 5: Approximately 40 ft x 40 ft wide and 6 ft to 8 ft tall consisting of sand with varying amounts of silt, gravel, and cobbles and gravel with varying amounts of sand and silt
- Stockpile 6: Approximately 150 ft x 75 ft wide and 2 ft to 4 ft tall consisting of sand with varying amounts of silt, gravel, and cobbles and gravel with varying amounts of sand and silt
- Stockpile 7: Approximately 100 ft x 100 ft wide and 2 ft to 4 ft tall consisting of sand with varying amounts of silt, gravel, and cobbles and gravel with varying amounts of sand, clay, and silt
- Stockpile 9: Approximately 50 ft x 50 ft wide and 4 ft to 6 ft tall consisting of sand with varying amounts of silt, gravel, and cobbles

Conditions encountered at each boring and test pit location, including approximate depths of undocumented or stockpiled fill materials, are indicated on the individual boring logs shown in the **Exploration Results** section and are attached to this report. Stratification boundaries on the boring logs represent the approximate location of changes in native soil types; in situ, the transition between materials may be gradual.

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 limits test results indicate that the on-site sand soils are generally non-plastic. A direct shear test performed on indicates a peak friction angle of approximately 45° with a corresponding cohesion value of 108 psf. Maximum density/optimum moisture content tests (Standard Proctor ASTM D 698) indicate the soils tested have a maximum dry density of approximately 127.2 pcf to 132.3 pcf and optimum water contents of about 8.0% to 10.2%.

Thermal Resistivity Testing

Terracon subcontracted Geotherm USA to perform laboratory thermal resistivity testing. Two (2) soil samples were collected at five (5) locations at the project site (for a total of 10 tests) from a

depth of 0 to 5 feet bgs and sent to Geotherm USA. At each location, one (1) sample was tested at 85% of the maximum dry density and one (1) sample was tested at 95% of the maximum dry density as measured in accordance with ASTM D698 (Standard Proctor). The results of this testing are included in the **Exploration Results** section of this report.

Electrical Resistivity Testing

Terracon performed field measurements of soil electrical resistivity for the support of grounding design. Soil resistivity data was obtained at locations provided by NextEra and are shown in the **Exploration Plan**. The testing was performed in general accordance with ASTM G57 - Wenner Four Electrode Method. We performed one line in the north-south direction with electrode "a" spacings of 0.5, 1,1.5, 2, 3, 5, 7, 10, 15, 20, 30, 45, 70, 100, 140, 250, 400, and 550 feet at two (2) locations onsite, one line in the northeast-southwest direction with electrode "a" spacings of 0.5, 1, 1.5, 2, 3, 5, 7, 10, 15, 20, 30, 45, 75, 100, 150, 350, and 450 feet at one (1) location onsite, and two mutually perpendicular lines with electrode "a" spacings of 0.5, 1, 1.5, 2, 3, 5, 7, 10, and 10.5 feet at four (4) locations onsite. The electrical resistivity test results are presented in **Exploration Results**.

Groundwater Conditions

Groundwater was not observed in the borings while drilling or for the short time borings remained open upon completion. Boring specific groundwater observations can be found on the logs in the **Exploration Results** section of this report. These observations represent groundwater conditions at the time of the 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 structures may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

According to data collected from the Water Data Library for the State of California, located at the intersection of 16th Avenue and Carol Drive in State Well Number 03S04E12B002S, historic groundwater levels between January 1, 2012 and January 1, 2021 were recorded at greater than 100 feet bgs.[1]

[1] *Groundwater elevation was obtained from the Water Data Library for the State of California Well ID 03S04E12B002S https://wdl.water.ca.gov/WaterDataLibrary/GroundwaterBrowseData.aspx?LocalWellNumber=&StationId=47714&StateWellNumber=03S04E12B002S&SelectedCounties=&SiteCode=339320N1165142W001&SelectedGWBasins=*

SEISMIC CONSIDERATIONS

The seismic design requirements for buildings and other structures are based on Seismic Design Category. Site Classification is required to determine the Seismic Design Category for a structure. The Site Classification is based on the upper 100 feet of the site profile defined by a weighted average value of either shear wave velocity, standard penetration resistance, or undrained shear strength in accordance with Section 20.4 of ASCE 7.

Description	Substation
2019 California Building Code Site Classification (CBC) [1]	C [2]
Site Latitude (°N)	33.9310
Site Longitude (°W)	116.5716
S_s Spectral Acceleration for a 0.2-Second Period	2.432
S_1 Spectral Acceleration for a 1-Second Period	0.984
F_a Site Coefficient for a 0.2-Second Period	1.200
F_v Site Coefficient for a 1-Second Period	1.400

1. Seismic site classification in general accordance with the *2019 California Building Code*.
2. The 2019 California Building Code (CBC) requires a site soil profile determination extending to a depth of 100 feet for seismic site classification. The current scope does not include the required 100-foot soil profile determination. Borings were extended to a maximum depth of 51½ feet, and this seismic site class definition considers that similar or denser soils continue below the maximum depth of the subsurface exploration. Additional exploration to deeper depths would be required to confirm the conditions below the current depth of exploration.

Typically, a site-specific ground motion study will generate less conservative coefficients and acceleration values which may reduce construction costs. We recommend consulting with a structural engineer to evaluate the need for such study and its potential impact on construction costs. Terracon should be contacted if a site-specific ground motion study is desired.

Faulting and Estimated Ground Motions

The site is located in the 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 fault, which is considered to have the most significant effect at the site from a design standpoint, has a maximum credible earthquake magnitude of 7.73 and primary contributing fault segment located approximately 2.50 kilometers from the site.

Based on the USGS Design Maps Summary Report, using the American Society of Civil Engineers (ASCE 7-16) standard, the modified peak ground acceleration (PGA_M) at the project

site is expected to be 1.242g. Based on the USGS Unified Hazard Tool, the project site has a mean magnitude of 7.62.

LIQUEFACTION

Liquefaction is a mode of ground failure that results from the generation of high pore water pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. The California Geological Survey (CGS) has designated certain areas 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 a relatively shallow water table.

The project site is not mapped for liquefaction hazard by the CGS. However, based on the County of Riverside GIS map, the project site is located within a moderate liquefaction hazard zone.

Subsurface soils encountered at the project site generally consisted of medium dense to very dense sand soils with varying amounts of silt to an approximate depth of 51½ feet bgs Groundwater was not encountered at the time of drilling. Historical high groundwater in the project vicinity was found to be greater than 100 feet below the ground surface.

A liquefaction analysis for the site was performed in general accordance with the DMG Special Publication 117. The liquefaction study utilized the software “LiquefyPro” by CivilTech Software. This analysis was based on the data from the soil borings. A Peak Ground Acceleration (PGA) of 1.242g and the mean magnitude of 7.62 for the project site were used. Settlement analysis used the Tokimatsu, M-correction method and the fines percentage were corrected for liquefaction using the Modify Stark/Olson method.

Based on calculation results, seismically induced settlement of unsaturated sands is estimated to range from 1.65 to 1.8 inches. Differential seismic settlement is anticipated to range from 0.8 to 1.2 inches. The detailed liquefaction potential analysis results are attached to this report in **Supporting Documents** section of the **Appendix**.

Geologic Hazards

- Slope stability - The site is relatively flat and there are no slopes near the site; furthermore, it is our understanding that the site will be graded and the existing stockpiles onsite will be removed; therefore, it is not necessary to perform a slope stability analysis.
- Rock fall hazards - The site is relatively flat and there are no slopes near the site; furthermore, it is our understanding that the site will be graded and the existing stockpiles onsite will be removed; therefore, hazards from rock fall are negligible.

- Landslide hazards - The site is relatively flat and there are no slopes near the site; furthermore, it is our understanding that the site will be graded and the existing stockpiles onsite will be removed; therefore, landslide hazards are negligible.
- Surface fault rupture – A portion of the site is located within an Alquist-Priolo Special Study Zone; therefore the possibility of surface fault ruptures is possible. However, it is our understanding that these proposed project structures are non-human occupancy. We anticipate that this project is not regulated by the A-P Act. § 2621.5 (b)). A fault hazard evaluation is attached in the appendix of this report.
- Fissures - A portion of the site is located within an Alquist-Priolo Special Study Zone; therefore, it is possible that fissures could occur at the site. However, it is our understanding that these proposed project structures are non-human occupancy. We anticipate that this project is not regulated by the A-P Act. § 2621.5 (b)).
- Liquefaction potential - The site is located within a moderate liquefaction zone as identified by the County of Riverside GIS website. Liquefaction potential is addressed above, but due to the anticipated depth of groundwater greater than 100 feet bgs, liquefaction hazard is considered low. Recommendations to mitigate the dry seismic settlement are included in this report.
- Collapsible and/or expansive soils – collapsible soils were not observed to be present, however sloughing should be anticipated.
- Debris flow - The site is relatively flat, there are no slopes near the site vicinity; furthermore, it is our understanding that the site will be graded and the existing stockpiles onsite will be removed; therefore, the possibility of debris flow is considered negligible.
- Ground shaking potential - A portion of the site is located within an Alquist-Priolo Special Study Zone; therefore, the site could be subjected to strong ground shaking that may result from earthquakes on local to distant sources during the life span of the project. Faulting and ground motion parameters are addressed above and in the attached desktop fault evaluation.
- Seismic Settlement - Calculation of dynamic dry settlement was performed in accordance with the DMG Special Publication 117. The study utilized the software “LiquefyPro” by CivilTech Software and calculated dynamic dry settlement. Seismic settlement is addressed above. Seismically induced settlement of unsaturated sands is estimated to range from 1.65 to 1.8 inches. Differential seismic settlement is anticipated to range from 0.8 to 1.2 inches. Recommendations to mitigate the dry seismic settlement are included in this report.

CORROSIVITY

Results of laboratory soluble sulfate, sulfides, soluble chloride, red-ox potential, electrical resistivity, total salts, and pH testing are included in the **Exploration Results** section of this report. 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.

Results of soluble sulfate testing indicate samples of the on-site soils tested possess negligible 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 S0 provisions of the ACI Design Manual, Section 318, Chapter 19.

PILE LOAD TEST PROCEDURES

Test Pile Installation

Terracon subcontracted Sunstall, Inc. to install W-section steel piles for the pile load tests. Gayk HRE equipment with a hydraulic attachment was utilized for installation. A total of twenty-four (24) piles were installed under Terracon supervision at six (6) test locations (4 per location). The test locations are indicated in the **Site Location** and **Exploration Plan** section. At each location, W6x9 piles were installed at varying depths. The approximate GPS coordinates of the center piles of each group are documented on the pile load testing plots.

The piles were driven to embedment depths ranging from approximately 5 to 8 feet below existing ground surface. All piles were driven within an approximate period of time ranging between 18 and 77 seconds. The time required to drive the pile per incremental foot of embedment, was recorded during installation. The table provided in the appendix includes the incremental driving time (in seconds) per foot of pile embedment.

Test Pile Details

Terracon provided the steel piles to the job site. The piles were driven to facilitate performing tension (pull-out) and lateral tests, with at least 36-inches of the pile being above the ground surface. The bare steel sections have the following properties[2]:

Parameter	W6x9
Depth	5.900 in
Flange Width, b_f	3.940 in

[2] American Institute of Steel Construction (AISC), *"Steel Construction Manual – Fourteenth Edition"* February 2012.

Parameter	W6x9
Flange Thickness, t_f	0.215 in
Web Thickness, t_w	0.170 in
Moment of Inertia, I_x	16.40 in^4
Section Area, A	2.68 in^2
Young's Modulus, E_s	29,000 ksi
Yield Stress, F_y	50 ksi
Hot Dip Galvanization	None

Pile Load Testing

The pile load testing was performed in general accordance with ASTM D3689 Test Methods for Deep Foundations under Static Axial Tensile Load, D1143 Standard Test Method for Deep Foundations Under Static Axial Compressive Load, and D3966 Test Methods for Deep Foundations under Lateral Load.

The vertical uplift and lateral tests were performed in tension. A 5-ton hydraulic jack was used to apply tension test loads using chains and clevises all rated for at least a 5-ton safe working capacity. The loads were measured with an ED Junior electronic load cell.

Terracon's proprietary steel tri-pod system was used to develop the vertical tension reaction. A locking "E"- plate clamp was used to grip the top of the web for the tension tests. Deflections and loads were measured using a pair of calibrated Mitutoyo ID-C150EXB digital deflection gauges and from the electronic readout device from the load cell. These readings were recorded manually on test data sheets by a field engineer. Terracon set up a steel reference beam to attach the deflection gauges with magnetic bases. The ends of the reference beam were supported on standard 3 x 6-inch bricks, seated firmly into the ground surface. For the vertical test, magnetic bases were also attached to the sides of the test pile to provide a suitable surface for the defection gauges to rest against.

For compression testing, a track mounted excavator was used as a reaction for compressive loads applied to the piles. A Rice Lake Model 482 Load Scale was used to measure loads in the compression test. Deflections were measured using a pair of calibrated Mitutuyo ID-C150EXB digital deflection gauges. These readings were recorded manually on test data sheets by a field engineer. Terracon set up a steel reference beam to attach the deflection gauges with magnetic bases. The ends of the reference beam were supported on standard 3 x 6-inch bricks, seated firmly into the ground surface. Magnetic bases were also attached to the sides of the test pile to provide a suitable surface for the defection gauges to rest against.

For lateral loading, Terracon connected two adjacent piles for each test. The piles were spaced at an approximate horizontal distance of 10 feet from each other. A chain was used to connect the reaction members and a flange clamp was set on the pile to apply horizontal loading at

approximately 30 inches above grade. One reference beam was positioned near the outside edge of each pile flange. Two digital dial gauges were positioned horizontally on each pile near the ground surface.

For both axial and lateral tests, the deflections were measured at each load increment until pile movements were negligible. The final deflection measurements recorded during the pile load tests are presented on the data reports included in **Exploration Results**.

The performance criteria for the piles at this project included an acceptable upward deflection of less than ¾-inch, an acceptable downward deflection of ¾-inch, and an allowable lateral deflection of less than 1-inch near ground surface, when the lateral test load was applied at 30 inches above grade.

GEOTECHNICAL OVERVIEW

The site appears suitable for the proposed construction based upon geotechnical conditions encountered in the test borings, provided that the findings and recommendations presented in this report are incorporated into project design and construction.

It is our understanding that the proposed BESS yard will be supported on either gravel pad foundations or driven steel piles. Substation facilities will include electrical structures supported on either mat foundations or drilled shaft foundations. Transmission towers will include steel poles supported with either drilled shaft or direct embed foundations. Ancillary equipment associated with the BESS and substation structures may be supported on mat foundations.

In addition to the numerous stockpiles that were observed on-site and documented earlier in the report, our explorations indicate the site has approximately 2 to 5 feet of fill material in certain areas onsite. We recommend that all fill soils be removed and the excavation thoroughly cleaned prior to backfill placement and/or construction.

Self contained BESS structures supported on a gravel pad, should consist of Class 2 aggregate base extending minimum of 12 inches below bottom of the self contained BESS structure or 12 inches below surrounding grade, whichever is deeper. Engineered fill should extend a minimum of 1 foot below the bottom of the aggregate base pad or 3 feet below existing grade whichever is deeper.

Shallow mat foundations should be supported on engineered fill extending to a minimum of 1 foot beneath the bottom of foundations, 3 feet below existing grades, or the depth of undocumented fill, whichever is greater. Onsite soils are acceptable to be reused as engineered fill beneath foundations. Overexcavation and recompaction is not necessary for the driven pile and drilled shaft 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 test borings, laboratory testing, 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 are for the design and construction of foundations and are contingent upon following the recommendations outlined in this section. All grading for the substation and BESS yard, except for those supported on driven piles or drilled shaft foundations, should incorporate the limits of the proposed structure plus a minimum lateral distance of two feet beyond the edges.

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 bearing soils, and other geotechnical conditions exposed during the construction of the project.

Site Preparation

Strip and remove existing vegetation, debris, and other deleterious materials from proposed shallow foundation 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.

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.

Subgrade Preparation

Strip and remove existing vegetation, debris, and other deleterious materials from proposed foundation areas and from material obtained from stockpiled soils on-site.

The proposed mat or gravel pad foundations should be supported on engineered fill. The over-excavation should then be backfilled up to the footing or mat base elevation with engineered fill placed in lifts of 8 inches or less in loose thickness and should be moisture conditioned and compacted following the recommendations in this report. The lateral extent of the overexcavation

should extend a minimum of 1 foot beyond the edge of the foundation. The following table presents the recommended subgrade preparation for the various structures planned for the project:

Foundation Type	Bearing Materials
Concrete Mat	Engineered fill extending 1 foot beneath the bottom of the foundations, 3 feet below existing grades, or the depth of undocumented fill, whichever is greater.
Gravel Pad	Class 2 aggregate base extending minimum of 12 inches below bottom of the self contained BESS structure or 12 inches below surrounding grade, whichever is deeper. Engineered fill should extend a minimum of 1 foot below the bottom of the aggregate base pad or 3 feet below existing grade whichever is deeper.
Drilled Shaft/Driven Piles	Undisturbed Native Soils

Subsequent to the surface clearing and grubbing efforts, the exposed subgrade soils which will support engineered fill areas constructed at grade, should be prepared to a minimum depth of 10 inches. Subgrade preparation should generally include scarification, moisture conditioning, and compaction. The moisture content and compaction of subgrade soils should be maintained until 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

It is anticipated that excavations for the proposed construction can be accomplished with conventional earthmoving equipment. However, due to the presence of cohesionless sandy soils, sloughing or caving should be anticipated. Furthermore, excavations penetrating the cemented and very dense soils may require the use of specialized heavy-duty equipment, together with drilling 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.

It may be necessary for the contractor to retain a geotechnical engineer to monitor the soils exposed in all excavations and provide engineering services for slopes. This will provide an opportunity to monitor the soils encountered and to modify the excavation slopes as necessary. It also offers an opportunity to verify the stability of the excavation slopes during construction.

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 Materials and Placement

Based on visits to the site, a total of nine (9) stockpiles were encountered. Based on our discussions with the design team, six (6) of the stockpiles of soil/concrete and cobble materials located on site were sampled and assessed to check potential viability in reuse of this material as engineered fill for the grading of the site. Descriptions of the sampled stockpiles were provided earlier in this report. It is our opinion that the majority of these stockpiles can be reused as on-site engineered fill provided deleterious materials and oversize fractions are removed. Concrete debris and oversize cobbles should be removed or processed to meet the specifications of this section for use as engineered fill in structural areas.

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 native soils and materials, approved stockpile materials, or approved imported materials may be used as fill material for the following:

- general site grading
- foundation areas
- foundation backfill

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

Gradation	Percent Finer by Weight (ASTM C 136)
6”	100
3”	90-100
No. 4 Sieve	50-100
No. 200 Sieve	10-30

- Liquid Limit ..... 30 (max)
- Plasticity Index ..... 15 (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
On-site soils and low volume change imported fill:			
Beneath foundations:	90%	-2%	+3%
Miscellaneous backfill:	90%	-2%	+3%
Utility Trenches*:	85%	-2%	+3%
Bottom of excavation receiving fill:	90%	-2%	+3%
Aggregate base (beneath roadways):	95%	-2%	+3%

* Upper 12 inches should be compacted to 95% within structural areas. Compaction requirements should be verified with electrical engineer based on thermal resistivity.

Grading and Drainage

Positive drainage should be provided during construction and maintained throughout the life of the development. Infiltration of water into utility trenches or foundation excavations should be prevented during construction. Backfill against foundations and in utility line trenches should be well compacted and free of all construction debris to reduce the possibility of moisture infiltration.

Utility Trenches

It is anticipated 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. A nonexpansive 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 one foot above the top of the pipe to the final ground surface, provided the material is free of organic matter and deleterious substances.

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. If 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.

Construction Considerations

At the time of our geotechnical exploration of the site, in general, moisture contents of the surface and subsurface native soils ranged from 0.9 to 11.2 percent. Based on these moisture contents, some moisture conditioning of the soils will likely be needed during construction of the project.

Upon completion of filling and grading, care should be taken to maintain the subgrade moisture content prior to construction. Construction traffic over the completed subgrade 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. If the subgrade should become desiccated, saturated, or disturbed, the affected material should be removed, or these materials should be scarified, moisture conditioned, and recompacted prior to construction.

The exposed subgrade and each lift of compacted fill should be tested, evaluated, and reworked, as necessary, until approved by the geotechnical engineer's representative prior to placement of additional lifts. We recommend that each lift of fill be tested for density and moisture content at a frequency of one test for every 2,500 square feet of compacted fill in the structural areas. We recommend one density and moisture content test for every 50 linear feet of compacted utility trench backfill. This testing frequency criteria may be adjusted during construction as allowed by the engineer of record.

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.

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.

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.

FOUNDATIONS

It is our understanding that the proposed BESS yard will be supported on either gravel pad foundations or driven steel piles. Substation facilities will include electrical structures supported on either spread footings, slab on grade, or drilled shaft foundations. Transmission towers will include steel poles supported with either drilled shaft or direct embed foundations. Recommendations for foundations 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.

Mat and Gravel Pad Foundation Design Recommendations

DESCRIPTION	RECOMENDATION
Foundation Type	Mat foundations
Bearing Material[3]	A minimum 3 feet of engineered fill beneath the bottom of the foundations, 5 feet below existing grades, or the depth of undocumented fill, whichever is greater.
Allowable Bearing Pressure[1,7]	3,000 psf for mat foundation (Up to 10 feet wide) 2,500 psf for mat foundation (Up to 14 feet wide) 2,000 psf for mat foundation (Up to 20 feet wide)
Foundation Type	Self-Contained BESS structure directly supported on Gravel Pad
Bearing Material[3]	A minimum 12 inches Class II aggregate base supported on 1 foot of engineered fill beneath the bottom of the pad, 3 feet below existing site grades, or the depth of undocumented fill, whichever is greater.
Allowable Bearing Pressure[1,7]	2,500 psf for pad contact pressure (Up to 5 feet wide) 2,000 psf for pad contact pressure (Up to 10 feet wide) 1,500 psf for pad contact pressure (Up to 20 feet wide)
Minimum Foundation Width	2 feet

DESCRIPTION	RECOMENDATION
Maximum Foundation Width	20 feet[7]
Ultimate Coefficient of Sliding Friction [4]	0.40
Ultimate Passive Resistance [5] **(equivalent fluid pressures)**	400 psf/ft
Max lateral bearing pressure[8]	150 psf/ft
Minimum Embedment Depth Below Finished Grade for foundations or gravel pads	12 inches
Estimated Total Settlement from Structural Loads [2]	1 inch
Estimated Differential Settlement[2,6]	½ inch

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.
2. Unsuitable or loose/soft, dry, and low-density soils should be removed and replaced per the recommendations presented in the **Earthwork**.
3. Use of passive earth pressures require the sides of the excavation for the spread footing foundation to be nearly vertical and the concrete placed neat against these vertical faces or that the footing forms be removed and compacted structural fill be placed against the vertical footing face.
4. 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.
5. For sloping ground, maintain depth below the lowest adjacent exterior grade within 5 horizontal feet of the structure. The designer should select an appropriate factor of safety during design. For at grade gravel pad supported self contained equipment no passive resistance should be utilized
6. Differential settlements are as measured over a span of 40 feet.
7. Maximum width is based on settlement analysis with allowable settlement of 1 inch. Higher bearing pressures or settlement values can be provided if settlement is allowed to exceed 1 inch.
8. This value can be utilized for fence post footings.

Settlement calculations were performed utilizing Westergaard and Hough's methods[5] to estimate the static settlement for various foundation widths with an allowable settlement of 1 inch and 2 inch respectively.

Since there are several factors that will control the design of mat foundations besides vertical load, Terracon should be consulted when the final foundation depth and width are determined to assist the structural designer in the evaluation of anticipated settlement.

For structural design of mat foundations, a modulus of subgrade reaction (Kv_1) of 200 pounds per cubic inch (pci) may be used. Other details including treatment of loose foundation soils, superstructure reinforcement and observation of foundation excavations as outlined in the

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

Earthwork section of this report are applicable for the design and construction of a mat foundation at the site.

The subgrade modulus (K_v) for the mat is affected by the size of the mat foundation and would vary according the following equation:

$$K_v = k_{v1} [(B+1)/2B)]^2$$

Where: K_v is the modulus for the size footing being analyzed
B is the width of the mat foundation.

Shallow Foundation Design Considerations

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 the foundation concrete below grade may be neglected in dead load computations.

Foundations should be reinforced as necessary to reduce the potential for distress caused by differential foundation movement. The use of joints at openings or other discontinuities in masonry walls is recommended.

Foundation excavations should be observed by the geotechnical engineer. If the soil conditions encountered differ significantly from those presented in this report, supplemental recommendations will be required.

Drilled Shaft Design Recommendations

The proposed substation and transmission tower components such as end towers and bus supports can be supported on drilled shafts. Total required embedment of the drilled shafts should be determined by the structural engineer based on structural loading and parameters provided in this report. The allowable axial uplift and compression capacities were evaluated utilizing SHAFT design software. The allowable capacities are based on a minimum factor of safety of 2.5.

Recommended geotechnical parameters for lateral load analyses of drilled shaft foundations have been developed for use in the L-PILE computer program. Based on our review of the subsurface conditions within the outline of the substation and the Standard Penetration Test (SPT) results, engineering properties have been estimated for the soils conditions as shown in the table below. Lateral and axial capacity of soils within the upper 2 feet should be neglected. We recommend that Terracon review the final drilled shaft design to verify that sufficient embedment is achieved.

Lateral Load Analyses Estimated Engineering Properties of Soils			
Top Depth Bottom Depth	Effective Unit Weight (pcf)	L-PILE/ GROUP Soil Type	Friction Angle (°)
SUBSTATION			
2 12	115	Sand	31
12 45	115	Sand	37
45 47	115	Sand	43

Lateral Load Analyses Estimated Engineering Properties of Soils			
Top Depth Bottom Depth	Effective Unit Weight (pcf)	L-PILE/ GROUP Soil Type	Cohesion (psf)/ Friction Angle (degrees)
Transmission Towers			
2 5	115	Sand	33
5 15	115	Sand	36
15 30	115	Sand	39
30 52	115	Sand	45

The depth below ground surface indicated in the tables is referenced from the existing ground surface at the site at the time of the field exploration. If fill is placed to raise the site grades, the depths shown in the table above must be increased by the thickness of fill placed. Terracon should be notified if grades were to be raised as down drag forces may be generated. The required depths of shaft embedment should also be determined for design lateral loads and overturning moments to determine the most critical design condition.

Lateral load design parameters are valid within the elastic range of the soil. The coefficients of subgrade reaction are ultimate values; therefore, appropriate factors of safety should be applied in the shaft design or deflection limits should be applied to the design.

It should be noted that the load capacities provided herein are based on the stresses induced in the supporting soils. The structural capacity of the shafts should be checked to assure that they can safely accommodate the combined stresses induced by axial and lateral forces. Furthermore,

the response of the drilled shaft foundations to lateral loads is dependent upon the soil/structure interaction as well as the shaft's actual diameter, length, stiffness and "fixity" (fixed or free-head condition).

Drilled Shaft Construction Considerations

Drilling to design depths should be possible with conventional single flight power augers. For drilled shaft depths above the depth of groundwater, temporary steel casing will likely be required to properly drill and clean shafts prior to concrete placement.

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 a slump in the range of 6 to 8 inches is recommended.

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.

Production Array Driven Pile Analyses

The L-PILE analyses considered pile tests performed during the current exploration. The analyses considered the recent test piles with their top at the load application height of 30 inches and the embedded pile depths of 5.0 to 8.0 feet based on field installation. Subsurface conditions were modeled as "Sand (Reese)". Unit weight values were based on the subsurface conditions encountered on-site. The results of pile tests were reviewed and select pile tests were selected for LPILE modeling to determine the in-situ engineering characteristics at the site.

The L-PILE analyses were performed by applying the maximum field test load at the point of load application. The p-Multiplier was then adjusted (by trial and error method) such that the applied load resulted with a deflection value that matched the in-situ test results.

Since no lateral deflections were measured below the ground surface during the testing, we have assumed in our analyses that the soil-structure interaction is simulated by a long slender pile and that the pile behaves in a flexural manner as depicted on the LPILE Lateral Deflection versus

Depth curves generated for each test pile. Actual lateral deflections of the test and production piles below the ground surface may vary from the results depicted from our analyses.

Depth (feet bgs)	L-Pile Soil Type[1]	Effective Unit Weight (pcf)	Friction Angle, degrees	p-multiplier
0-8	Sand (Reese)	115	38	3.5

[1] Note: LPILE Version 2018-10.006 was used in the analysis

Based on the axial tension results and significantly lower test results in several 5 and 6 feet deep embedded piles, a minimum embedment depth of 7 feet below existing native site grades should be utilized for the design for piles to resist significant tensile loads. The allowable axial capacity of the straight-sided pile for the site can be determined by the following equation:

Allowable Axial Resistance	
Tension (Embedded between 5 to 7 ft)	F_{ST} ***(lbs) = 5 x P x h²***
Tension (Embedded a minimum of 7 ft)	F_{ST} ***(lbs) = 30 x P x h²***
Compression	F_{SC} ***(lbs) = 140 x P x h²***

Where:
F_s = Ultimate Axial Skin Resistance (lbs)
P = Pile perimeter = 2 * Flange Width + 2 * Depth (ft)
h = depth of embedment of pile (ft)

The allowable axial skin resistance parameters utilize a minimum factor of safety of 1.5. Due to the negligible tip area of the W-section steel piles, end bearing may be neglected. The above skin resistance values are applicable for piles that are driven a minimum of 5 feet embedment using equipment similar to a GAYK Model HRE 1000 hydraulic hammer. If a smaller or larger drive hammer is used, we recommend Terracon be consulted to determine the minimum drive time based on the proposed equipment to be used for driving of the piles.

ACCESS ROADWAYS

Compacted Native Soils Access Road Design Recommendations

Based upon the soil conditions encountered in the test borings, the use of on-site soils for construction of on-site roads is considered acceptable. Without the use of asphalt concrete or other hardened material to surface the roadways, there is an increased potential for erosion and deep rutting of the roadway to occur, however, post construction traffic is anticipated to only consist of pickup trucks for operations and maintenance personnel. Therefore, construction of the un-surfaced native roadways should consist of a minimum of 10-inches of compacted on-site soils.

It is our understanding that proposed compacted native roadway grades will match adjacent existing grades so that the existing natural drainage patterns are generally unchanged. The un-surfaced roads are expected to function with periodic maintenance.

Aggregate Surface Roadway Design Recommendations

Aggregate surface roadway design was conducted in general accordance with the Army Corps of Engineers (ACOE) Technical Manual TM-5-822, Design of Aggregate Surface Roads and Airfields (1990). The design was based on Category III, traffic containing as much as 15% trucks, but with not more than 1% of the total traffic composed of trucks having three or more axles (Group 3 vehicles), and Road Class G (Under 70 vehicles per day). Based on the Category and Road Class, a Design Index of 1 was utilized, along with a correlated CBR of 10. Terracon should be contacted if significant changes in traffic loads or in the characteristics described are anticipated.

As a minimum, the aggregate surface course should have a minimum thickness of 5 inches and should be constructed over a minimum of 10 inches of scarified, moisture conditioned, and compacted native soils to 90% of the maximum dry density using ASTM D 1557. The recommended thicknesses should be measured after full compaction. The width of the roadway should extend a minimum distance of 1 foot on each side of the desired surface width.

It is our understanding that aggregate surfaced roads and parking areas will be utilized during the construction of this project. Aggregate materials should conform to the specifications of Class II aggregate base in accordance with the requirements and specifications of the State of California Department of Transportation (CalTrans), or other approved local governing specifications.

Positive drainage should be provided during construction and maintained throughout the life of the roadways. Proposed roadway design should maintain the integrity of the road and eliminate ponding.

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. Natural 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 or collaboration through this system 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. The findings and recommendations presented in this report were prepared in a manner consistent with the standards of care and skill ordinarily exercised by members of its profession completing similar studies and practicing under similar conditions in the geographic vicinity and at the time these services have been performed. 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 impact 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. 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

Number of Borings	Depth (feet)	Location
4 borings	13½ to 46½	Substation Area
1 boring	51½	Transmission Tower Area
8 borings	12½ to 46	BESS Areas
5 borings	5	Thermal Resistivity Locations

Boring Layout and Elevations: A handheld GPS device was utilized to locate exploration and test locations within an accuracy of 20+/- feet.

Subsurface Exploration Procedures: We advanced the borings with a track-mounted drill rig using hollow stem augers. Four samples were obtained in the upper 10 feet of the borings and at intervals of 5 feet thereafter. A standard 2-inch outer diameter split-barrel sampling spoon is 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 is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. A 3-inch O.D. split-barrel sampling spoon with 2.5-inch I.D. ring lined sampler was also used for sampling. Ring-lined, split-barrel sampling procedures are similar to standard split spoon sampling procedure; however, blow counts are typically recorded for 6-inch intervals for a total of 18 inches of penetration. We observed and recorded groundwater levels during drilling and sampling.

For safety purposes, all borings were backfilled with auger cuttings after their completion. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. Our field engineer prepared field boring logs as part of the excavation operations. These field logs include visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final 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.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil and rock strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- 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-µm (No. 200) Sieve in Soils by Washing
- ASTM D3080 Standard Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions
- ASTM D698 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort
- Corrosivity testing included pH, chlorides, sulfates, and electrical lab resistivity

The laboratory testing program often included examination of soil samples by an engineer. Based on the material's texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System.

SITE LOCATION AND EXPLORATION PLANS

SITE LOCATION

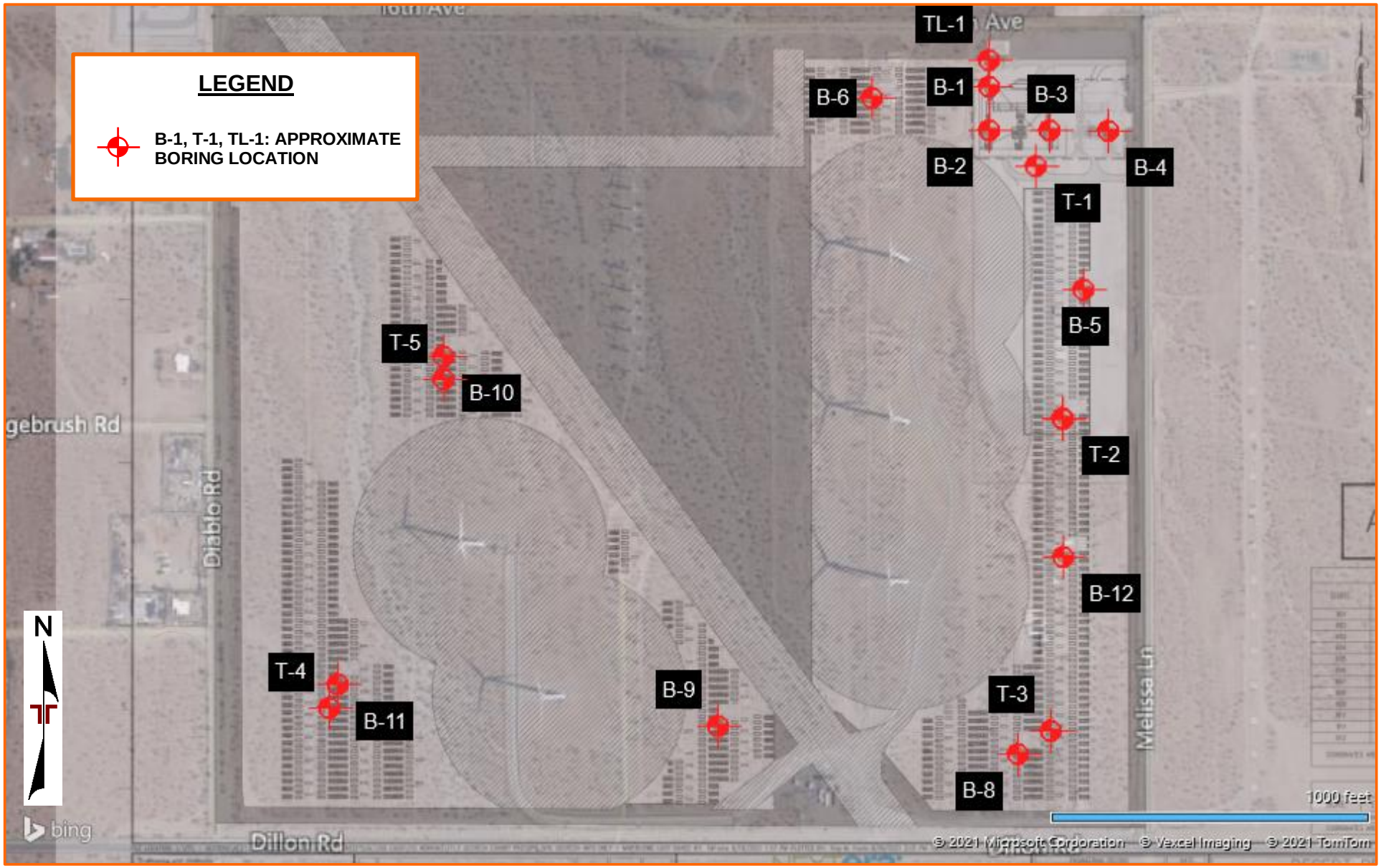
Desert Peak 230-34.5kV Collector Substation, BESS, and Transmission ■ Desert Hot Springs, CA
February 15, 2022 ■ Terracon Project No. 60215222

Terracon GeoReport

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

EXPLORATION PLAN – BORING LOCATIONS

Desert Peak 230-34.5kV Collector Substation, BESS, and Transmission ■ Desert Hot Springs, CA
February 15, 2022 ■ Terracon Project No. 60215222



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AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN – ELECTRICAL RESISTIVITY TEST LOCATIONS

Desert Peak 230-34.5kV Collector Substation, BESS, and Transmission ■ Desert Hot Springs, CA
February 15, 2022 ■ Terracon Project No. 60215222

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

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN – PILE LOAD TEST LOCATIONS

Desert Peak 230-34.5kV Collector Substation, BESS, and Transmission ■ Desert Hot Springs, CA
February 15, 2022 ■ Terracon Project No. 60215222

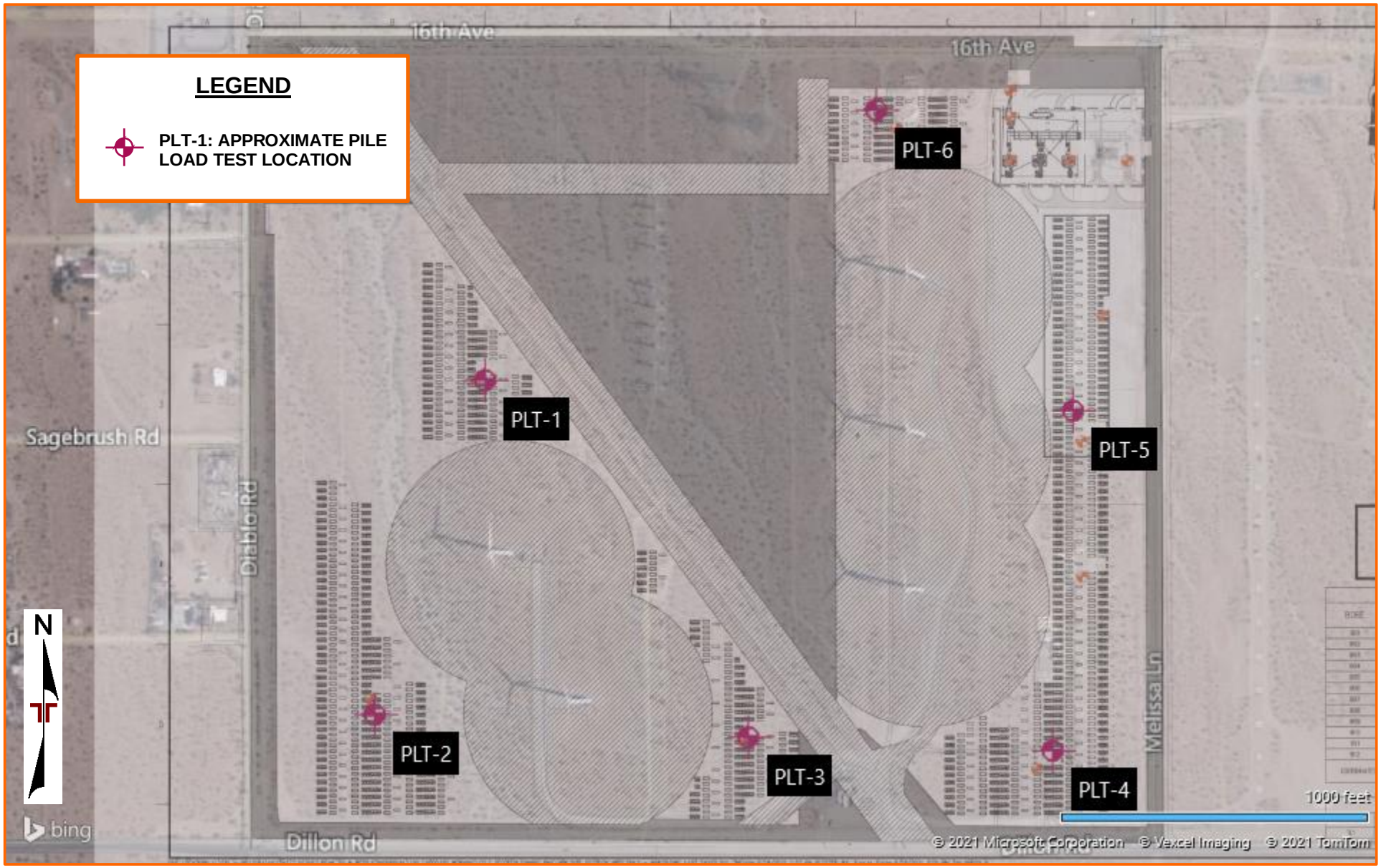


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN – STOCKPILE AND TEST PIT LOCATIONS

Desert Peak 230-34.5kV Collector Substation, BESS, and Transmission ■ Desert Hot Springs, CA
February 15, 2022 ■ Terracon Project No. 60215222

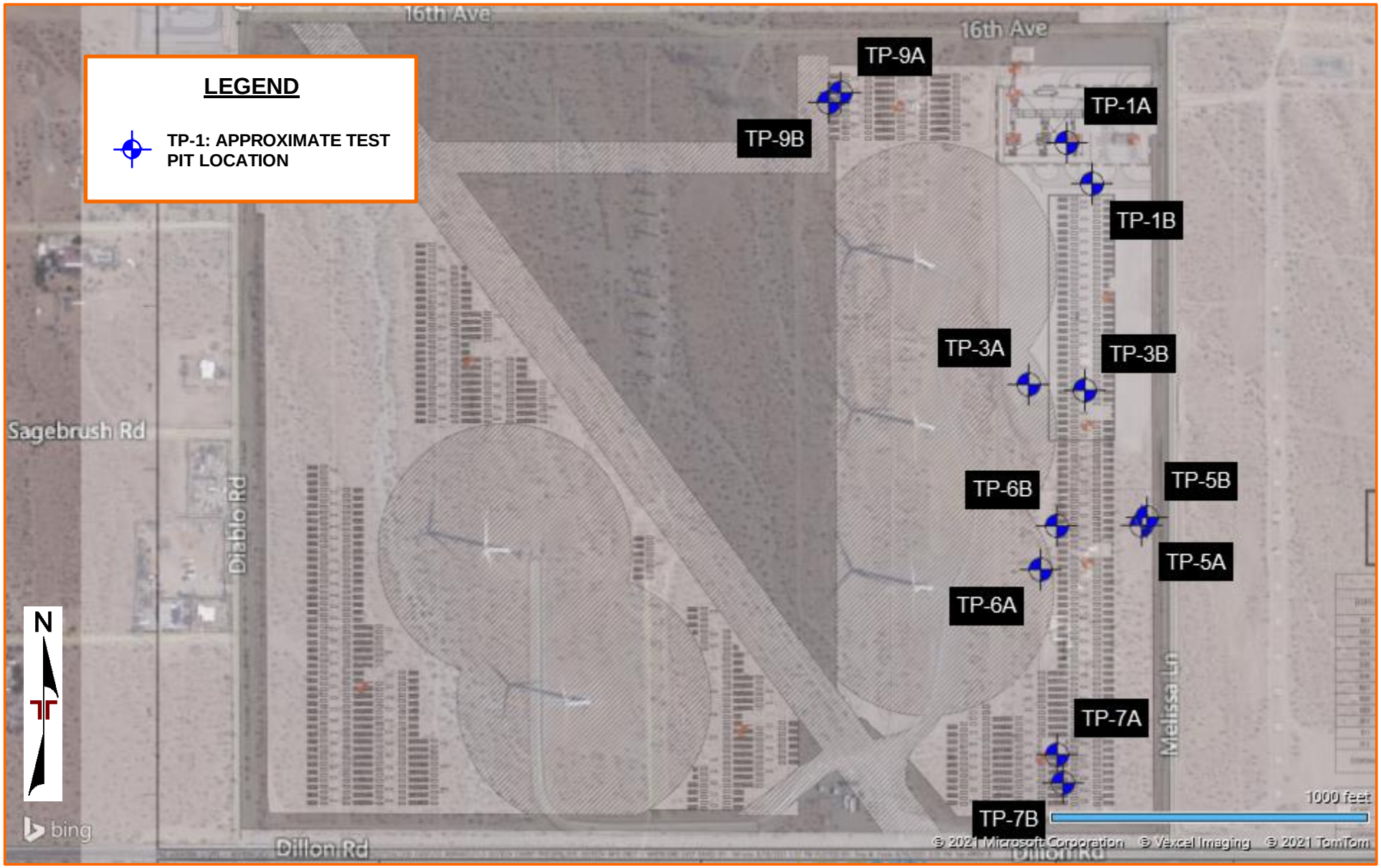


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION RESULTS

BORING LOG NO. B-01

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9314° Longitude: -116.5722°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, brown							NP	9
	medium dense				18-25-33	2.0	120		
	dense	5			7-16-16 N=32				
	light brown to brown, medium dense				14-20-19	1.9	114		
		10			4-5-8 N=13				
	dense	15			30-30-32	5.6	123		
	20.0 **SILTY SAND (SM)**, trace clay, light brown to brown, dense	20			4-16-34 N=50				19
	very dense	25			50/5"				
	31.5	30			12-20-25 N=45				
	Boring Terminated at 31.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-02

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9310° Longitude: -116.5722°

DEPTH	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, brown							
		medium dense			9-18-18	6.1	119		
5					10-18-30	11.2			
		light brown to brown			7-7-9 N=16			NP	8
10					14-20-25	2.1	108		
		very dense			25-30-23 N=53				
15									
20					13-34-45	4.9	112		
		SILTY SAND (SM), brown, dense							
25					12-25-38 N=63				
		POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, brown to light brown, very dense							
30					50/5"				

20.0

25.0

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-02

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

GRAPHIC LOG	LOCATION / DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	See Exploration Plan Latitude: 33.9310° Longitude: -116.5722°								
	POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, brown to light brown, very dense *(continued)*	35			18-32-33 N=65				
		40			20-50/3"	4.8	115		
		45			22-36-50/5"				
	46.4 ***Boring Terminated at 46.42 Feet***								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-03

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9310° Longitude: -116.5716°

DEPTH	GRAPHIC LOG		WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - SILTY SAND (SM), trace gravel, brown							
2.5		**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, brown to light brown, dense			21-35-50/5"	3.4	123		
5.0		**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, brown to light brown, dense			10-14-17 N=31				
		medium dense			15-25-33	2.7	122		
10.0		**POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, brown to light brown, medium dense			8-12-14 N=26				
13.5		***Auger Refusal at 13.5 Feet***							

Stratification lines are approximate. In-situ, the transition may be gradual.
Offset second borehole refusal at 13.5' ; heavuy auger chatter and lots of gravel and big rocks coming up at 13'

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021
Drill Rig: track CME-75 | Driller: 2R Drilling
Project No.: 60215222

BORING LOG NO. B-04

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9310° Longitude: -116.5710°

DEPTH	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							NP	9
				11-24-28	2.1	123		
5				14-21-35	5.0	130		
				10-20-25 N=45				
10				18-35-43	1.6	114		
15				12-16-21 N=37				
20				50/5"	2.7	100		
25				12-25-28 N=53				
30				28-50/5"	1.4	120		

POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), brown

medium dense

brown to light brown

dense

very dense

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-04

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9310° Longitude: -116.5710°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), brown *(continued)*	35			15-35-42 N=77				
		40			50/5"	1.7	109		
		45			24-38-40 N=78				
	46.5 ***Boring Terminated at 46.5 Feet***								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-05

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9296° Longitude: -116.5712°

DEPTH	GRAPHIC LOG	DESCRIPTION	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), brown							
		very dense			50/4"				
5		brown to light brown, medium dense			10-12-12 N=24			NP	7
		very dense			50/6"	2.0	117		
10		dense			15-17-21 N=38				
15		very dense			35-50/4"	2.3	117		
20					17-34-46 N=80				
25					50/5"	2.5			
30					50/6"				
30.5		***Boring Terminated at 30.49 Feet***							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-06

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9313° Longitude: -116.5734°

DEPTH	GRAPHIC LOG	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0							
	SILTY SAND (SM), trace gravel, light brown to brown						
	very dense		50/6"	0.9			
5	dense		26-47-44	2.4			
	very dense		18-27-25 N=52				
10.0							
10	**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, light brown, very dense		29-50/5"	1.9	117		
15	dense		16-21-21 N=42				9
20	very dense		14-41-50/4"	2.5	118		
25			42-50/4"				
30			50/4"				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-11-2021 | Boring Completed: 10-11-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-06

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.9313° Longitude: -116.5734° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, light brown, very dense *(continued)* 35.0								
	SILTY SAND (SM), trace gravel, light brown, very dense	35			32-50/3"				
		40			50/3"				
	45.9	45			31-50/5"				
	Boring Terminated at 45.92 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-11-2021 | Boring Completed: 10-11-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-07

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9285° Longitude: -116.5715°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - SILTY SAND (SM), with gravel, brown								
	dense				15-25-35	1.3			
	5.0	5							
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), trace gravel, light brown to brown, dense				15-16-15 N=31				
	medium dense				10-12-12	3.1			
	very dense	10			50/6"				
	12.5								
	Auger Refusal at 12.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.
refusal at 12.5; no offset

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-08

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9256° Longitude: -116.5719°

DEPTH	GRAPHIC LOG	DESCRIPTION	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0		**POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, light brown						NP	6
		medium dense			7-5-18				
5		dense			14-25-34				
		medium dense			7-14-12 N=26				
10.0									
10		**SILTY SAND (SM)**, trace gravel, brown, dense			14-25-39	1.0	126		
15					25-25-17 N=42				
20.0									
20		**POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, light brown, very dense			20-50/5"	2.4	109		
25		dense			20-29-15 N=44				
30		very dense			50/3"	1.4			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-13-2021 | Boring Completed: 10-13-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-08

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.9256° Longitude: -116.5719° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), light brown, very dense *(continued)*	35			32-50/5"				
		40			50/3"	1.2			
	45.9	45			42-50/5"				
	Boring Terminated at 45.92 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-13-2021 | Boring Completed: 10-13-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-09

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9259° Longitude: -116.5750°

DEPTH	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), light brown							
	medium dense			14-23-18				
5				11-10-14 N=24			NP	7
	very dense			18-50/6"	1.2			
10	dense			12-15-22 N=37				
15	very dense			40-50/4"	1.1			
20	dense			6-17-27 N=44				6
25	very dense			50/5"				
30				50/4"				
30.3	***Boring Terminated at 30.33 Feet***							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-13-2021 | Boring Completed: 10-13-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-10

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9290° Longitude: -116.5779°

DEPTH	GRAPHIC LOG	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), with gravel, brown to light brown						
	medium dense		14-17-21				
5.0							
5	**POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, light brown, dense		15-23-38	0.9			
			10-14-19 N=33				
10	very dense		25-50/6"	1.0			
15			18-20-32/0"				
20			34-50/5"				
25			18-40-48 N=88				
30.0							
30	**SILTY SAND (SM)**, trace gravel, brown, very dense		50/6"	2.6	112		

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-13-2021 | Boring Completed: 10-13-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-10

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9290° Longitude: -116.5779°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), trace gravel, brown, very dense *(continued)*	35			24-50/6"				
	40.0	40			50/5"	1.2			
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), light brown, very dense								
	45.5	45			50/6"				
	Boring Terminated at 45.49 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-13-2021 | Boring Completed: 10-13-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-11

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9262° Longitude: -116.5790°

DEPTH	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), light brown							
	medium dense			10-20-24	1.2			
5				8-10-12 N=22				
				5-24-30	0.9			
10	dense			11-14-18 N=32				
15	very dense			30-50/5"				
20				12-30-32 N=62				
25				50/5"				
30				30-50/6"				
31.0	***Boring Terminated at 30.99 Feet***							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-13-2021 | Boring Completed: 10-13-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-12

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9273° Longitude: -116.5714°

DEPTH	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - SILTY SAND (SM), trace gravel and mica, brown							
	medium dense			6-8-14	3.9	120		
5.0								
5	**SILTY SAND (SM)**, trace gravel and mica, brown, medium dense			10-12-17	3.4	117		
				3-7-8 N=15				
10.0								
10	**POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, light brown to brown, dense			12-36-50/6"	2.7	120		
15				12-22-22 N=44				7
20	very dense			40-50/4"	1.9			
25				18-35-40 N=75				
30				50/1"				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. B-12

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.9273° Longitude: -116.5714° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	POORLY GRADED SAND WITH SILT (SP-SM), trace gravel, light brown to brown, dense *(continued)*	35			50/5"				
		40			50/5"	0.4	114		
	45.5	45			50/6"				
	Boring Terminated at 45.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. T-01

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.9307° Longitude: -116.5717° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), trace gravel, brown medium dense 5.0				8-15-20	3.2	121		
	Boring Terminated at 5 Feet	5							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. T-02

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

GRAPHIC LOG	LOCATION / DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	LOCATION See Exploration Plan Latitude: 33.9285° Longitude: -116.5715°								
	SILTY SAND (SM), with gravel, brown dense				15-25-35	3.4	125		
	5.0 ***Boring Terminated at 5 Feet***	5							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-12-2021 | Boring Completed: 10-12-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. T-03

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

GRAPHIC LOG	LOCATION / DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	LOCATION See Exploration Plan Latitude: 33.9258° Longitude: -116.5716°								
	FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), light brown medium dense				10-17-22	1.4			
	5.0 ***Boring Terminated at 5 Feet***	5							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-13-2021 | Boring Completed: 10-13-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. T-04

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

GRAPHIC LOG	LOCATION / DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	LOCATION See Exploration Plan Latitude: 33.9260° Longitude: -116.5791°								
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), light brown medium dense				14-18-20	1.0			
	5.0 ***Boring Terminated at 5 Feet***	5							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-13-2021 | Boring Completed: 10-13-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. T-05

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9288° Longitude: -116.5779°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), light brown medium dense				6-11-14	1.1			
	5.0	5							
	Boring Terminated at 5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-13-2021 | Boring Completed: 10-13-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. TL-01

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9316° Longitude: -116.5722°

DEPTH	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
							NP	18
				14-18-21	1.4	115		
5				7-12-18 N=30				
				21-29-37	1.2			
10				14-19-19 N=38				6
15				26-50/5"				
20				50/2"				
25				50/4"				
30				29-47-41 N=88				

SILTY SAND (SM), trace gravel, light brown

medium dense

5.0

POORLY GRADED GRAVEL WITH SILT (SP-SM), trace gravel, light brown, dense

very dense

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-11-2021 | Boring Completed: 10-11-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

BORING LOG NO. TL-01

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 33.9316° Longitude: -116.5722° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	POORLY GRADED GRAVEL WITH SILT (SP-SM), trace gravel, light brown, dense *(continued)*	35			34-37-50/4"				
		40			39-50/4"				
		45			50/5"				11
	51.3	50			20-43-50/4"				
	Boring Terminated at 51.33 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-11-2021 | Boring Completed: 10-11-2021

Drill Rig: track CME-75 | Driller: 2R Drilling

Project No.: 60215222

TEST PIT LOG NO. TP-1A

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9309° Longitude: -116.5717°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), brown								7
	4.0 **FILL - SILTY SAND**, with cobbles, light brown	5							
	9.0 ***Test Pit Terminated at 9 Feet***								

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-03-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

TEST PIT LOG NO. TP-1B

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9306° Longitude: -116.5714°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), pale tan	5							9
	6.0 **FILL - POORLY GRADED GRAVEL (GP)**, pale tan								
	7.3 **FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, with cobbles, pale tan								
	10.0 ***Test Pit Terminated at 10 Feet***	10							

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-03-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

TEST PIT LOG NO. TP-3A

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9289° Longitude: -116.5721°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), light brown								6
	with cobbles	5							
	11.0	10							
	Test Pit Terminated at 11 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-01-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

TEST PIT LOG NO. TP-3B

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9288° Longitude: -116.5715°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - SILTY SAND WITH GRAVEL (SM), red brown with cobbles	5							13
	6.0 ***Test Pit Terminated at 6 Feet***								

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-03-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

TEST PIT LOG NO. TP-5A

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9276° Longitude: -116.5709°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - POORLY GRADED SAND WITH GRAVEL (SP), with cobbles, tan/brown								
	4.0 **FILL - SILTY SAND WITH GRAVEL (SM)**, with cobbles, tan/brown	5							
	5.5 **FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, brown								
	6.8 **FILL - POORLY GRADED GRAVEL (GP)**, with cobbles, tan/brown								
	7.3 **FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, brown								
	10.0 ***Test Pit Terminated at 10 Feet***	10							

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-03-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

TEST PIT LOG NO. TP-5B

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9277° Longitude: -116.5709°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - SILTY SAND WITH GRAVEL (SM), with cobbles, tan/brown								19
	4.0								
	FILL - SANDY SILT WITH GRAVEL (ML), with cobbles, brown	5							
	8.8								
	9.3 **FILL - POORLY GRADED GRAVEL WITH SAND (GP)**, with cobbles, brown								
	10.5 **SANDY SILT (ML)**, brown	10							
	Test Pit Terminated at 10.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-01-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

TEST PIT LOG NO. TP-6A

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9273° Longitude: -116.5720°

GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), rusty brown								11
	4.0									
	5.0	**FILL - SILTY SAND WITH GRAVEL (SM)**, with cobbles, rusty brown	5							
		POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), brown								
	10.5		10							
		Test Pit Terminated at 10.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-01-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

TEST PIT LOG NO. TP-6B

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9276° Longitude: -116.5718°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), with cobbles, tan/brown								12
	4.0 **FILL - POORLY GRADED GRAVEL WITH SAND (GP)** 5.0	5							
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), brown 9.0								
	Test Pit Terminated at 9 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-01-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

TEST PIT LOG NO. TP-7A

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9257° Longitude: -116.5718°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), with cobbles, tan								8
	4.0 **FILL - SILTY SAND WITH GRAVEL (SM)**, with cobbles, brown	5							
	5.5 **FILL - POORLY GRADED GRAVEL WITH CLAY AND SAND (GP)**, with cobbles, brown								
	6.5 **POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, dark brown								
	10.0 ***Test Pit Terminated at 10 Feet***	10							

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-01-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

TEST PIT LOG NO. TP-7B

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9254° Longitude: -116.5717°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), with cobbles, dark brown								5
	4.5								
	5.3 **FILL - POORLY GRADED GRAVEL WITH CLAY AND SAND (GP)**, with cobbles, dark brown	5							
	POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), brown								
	9.0								
	Test Pit Terminated at 9 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-01-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

TEST PIT LOG NO. TP-9A

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9313° Longitude: -116.5742°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), with cobbles	5							9
	9.5								
	Test Pit Terminated at 9.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Test Pit Started: 11-03-2021 | Test Pit Completed: 11-03-2021

Excavator: Excavator | Operator: Lourenco

Project No.: 60215222

BORING LOG NO. TP-9B

PROJECT: Desert Peak Solar

CLIENT: NextEra Energy Inc
Austin, TX

SITE: I-10 and Highway 62
Desert Hot Springs, CA

LOCATION See Exploration Plan

Latitude: 33.9285° Longitude: -116.5715°

GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - SILTY SAND (SM), trace cobbles, tan to dark tan								17
	4.0								
	FILL - POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), with cobbles, tan to dark tan	5							
	8.0								
	Boring Terminated at 8 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Advancement Method:

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

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:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

Boring Started: 10-13-2021 | Boring Completed: 10-13-2021

Drill Rig: Excavator | Driller: Lourenco

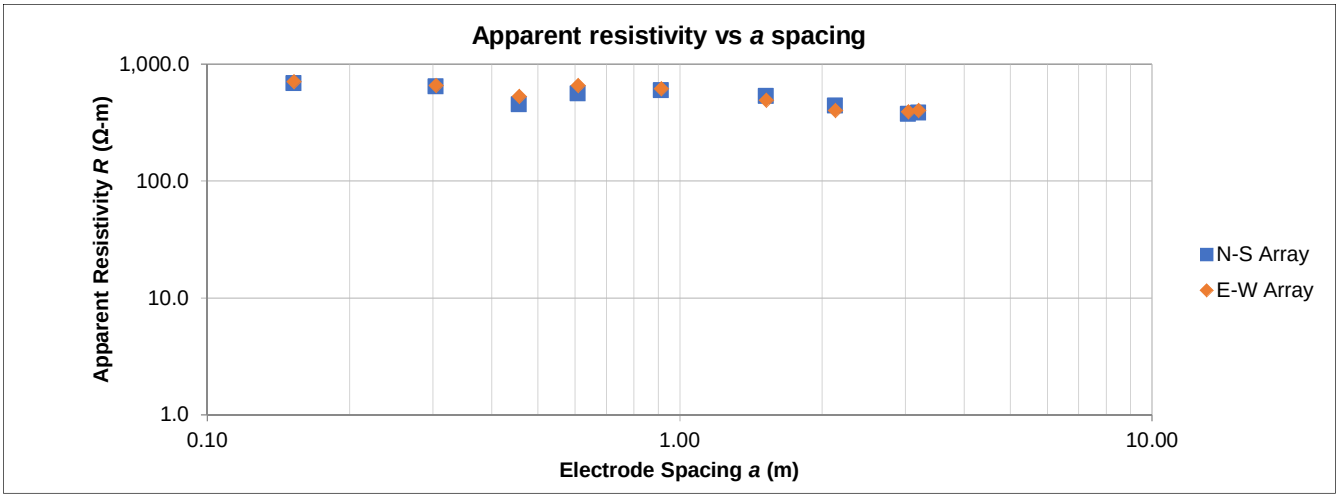
Project No.: 60215222

FIELD ELECTRICAL RESISTIVITY TEST DATA
Desert Peak ■ Palm Springs, Riverside County, CA
February 15, 2022 ■ Terracon Project No. 60215222

Array Loc.	ER-1		
Instrument	Minisiting R1	**Weather**	82, sunny, and windy
Serial #	S2107129	**Ground Cond.**	Medium dense sand
Test Date	October 11, 2021	**Tested By**	AS & JV
		Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test				E-W Test			
(feet)	(meters)	(inches)	(meters)	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ
				(amps)	%	Ω	(Ω-m)	(amps)	%	Ω	(Ω-m)
0.5	0.15	2	0.05	+5	0.1	611.00	680	+10	0.1	633.90	710
1	0.31	2	0.05	+10	0.0	319.00	640	+10	0.0	328.60	660
1.5	0.46	2	0.05	+5	0.0	151.80	450	+10	0.0	182.20	530
2	0.61	2	0.05	+10	0.0	145.20	560	+10	0.0	169.30	660
3	0.92	3	0.08	+10	0.0	100.70	590	+5	0.0	106.60	620
5	1.53	4	0.10	+2	0.4	54.90	530	+5	0.0	50.80	490
7	2.14	6	0.15	+2	0.0	32.45	440	+2	0.1	29.87	400
10	3.05	6	0.15	+5	0.0	19.31	370	+1	0.6	20.51	390
10.5	3.20	12	0.30	+2	0.2	18.45	380	+5	0.2	19.63	400

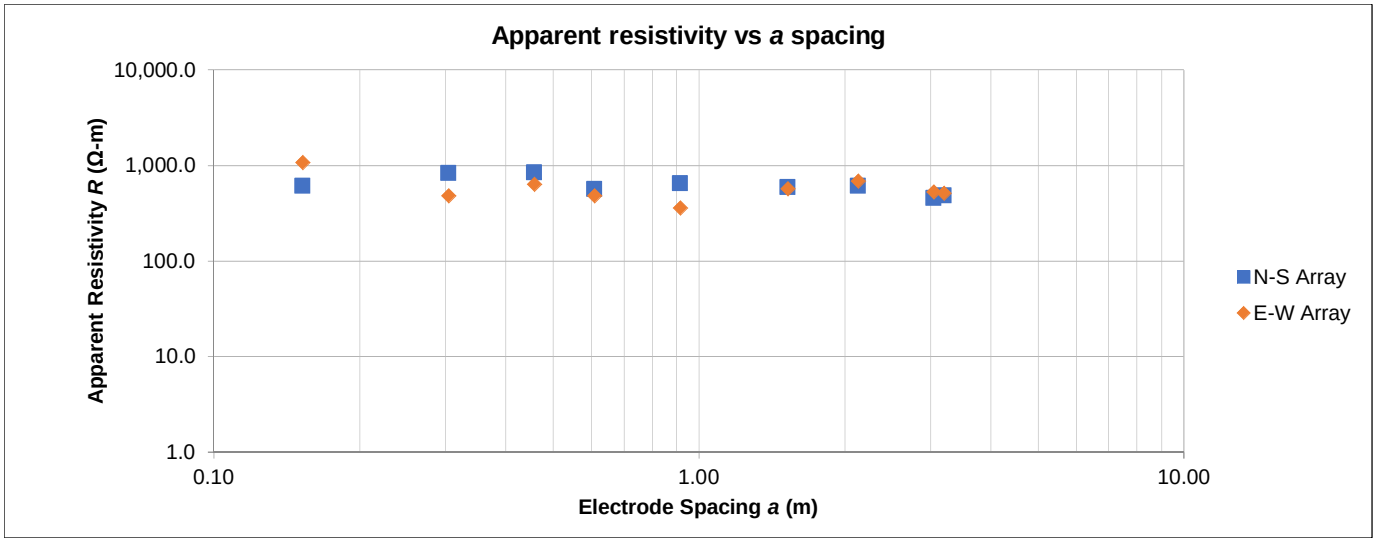


FIELD ELECTRICAL RESISTIVITY TEST DATA
Desert Peak ■ Palm Springs, Riverside County, CA
February 15, 2022 ■ Terracon Project No. 60215222

Array Loc.	ER-2		
Instrument	Minisiting R1	**Weather**	82, sunny, and windy
Serial #	S2107129	**Ground Cond.**	Medium dense sand
Test Date	October 11, 2021	**Tested By**	AS & JV
		Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test				E-W Test			
(feet)	(meters)	(inches)	(meters)	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ
				(amps)	%	Ω	(Ω-m)	(amps)	%	Ω	(Ω-m)
0.5	0.15	2	0.05	+5	0.0	546.00	610	+2	0.1	958.00	1070
1	0.31	2	0.05	+2	1.0	407.80	820	+2	0.0	239.80	480
1.5	0.46	2	0.05	+2	0.1	284.90	840	+2	0.0	213.70	630
2	0.61	2	0.05	+2	0.0	145.00	560	+2	0.0	123.50	480
3	0.92	3	0.08	+5	0.0	109.20	640	+5	0.1	61.51	360
5	1.53	4	0.10	+5	0.0	60.71	590	+10	0.0	58.88	570
7	2.14	6	0.15	+2	0.4	45.44	610	+10	0.0	50.29	680
10	3.05	6	0.15	+5	0.4	23.20	450	+2	0.0	27.74	530
10.5	3.20	12	0.30	+2	0.0	23.67	480	+5	0.0	25.11	510

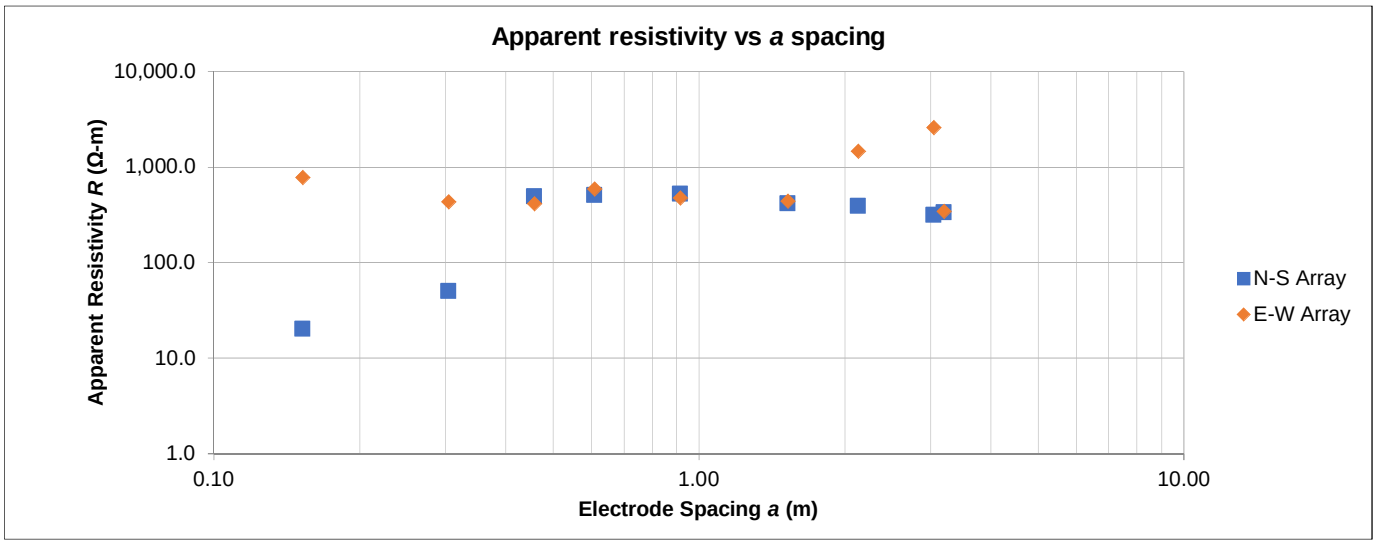


FIELD ELECTRICAL RESISTIVITY TEST DATA
Desert Peak ■ Palm Springs, Riverside County, CA
February 15, 2022 ■ Terracon Project No. 60215222

Array Loc.	ER-3		
Instrument	Minisiting R1	**Weather**	82, sunny, and windy
Serial #	S2107129	**Ground Cond.**	Medium dense sand
Test Date	October 11, 2021	**Tested By**	AS & JV
		Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	Multiple attempts were made to gather consistent data at this location. Potential interference from surrounding utilities associated with the switchyard equipment 250 SE, the transmission line 200 feet NE, and the wind turbine 500 feet NW may have affected these results.		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test				E-W Test			
(feet)	(meters)	(inches)	(meters)	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ
				(amps)	%	Ω	(Ω-m)	(amps)	%	Ω	(Ω-m)
0.5	0.15	2	0.05	+20	0.0	16.82	20	+10	0.0	687.50	770
1	0.31	2	0.05	+20	0.4	24.72	50	+10	0.0	213.60	430
1.5	0.46	2	0.05	+10	0.0	167.60	490	+10	0.0	140.40	410
2	0.61	2	0.05	+5	0.0	128.40	500	+10	0.1	152.50	590
3	0.92	3	0.08	+5	0.0	89.38	520	+5	0.0	80.57	470
5	1.53	4	0.10	+5	0.0	42.43	410	+10	0.0	45.88	440
7	2.14	6	0.15	+10	0.0	29.07	390	+5	0.9	108.20	1460
10	3.05	6	0.15	+2	0.6	16.32	310	+5	0.4	134.30	2580
10.5	3.20	12	0.30	+2	0.1	15.92	330	+5	0.1	16.68	340

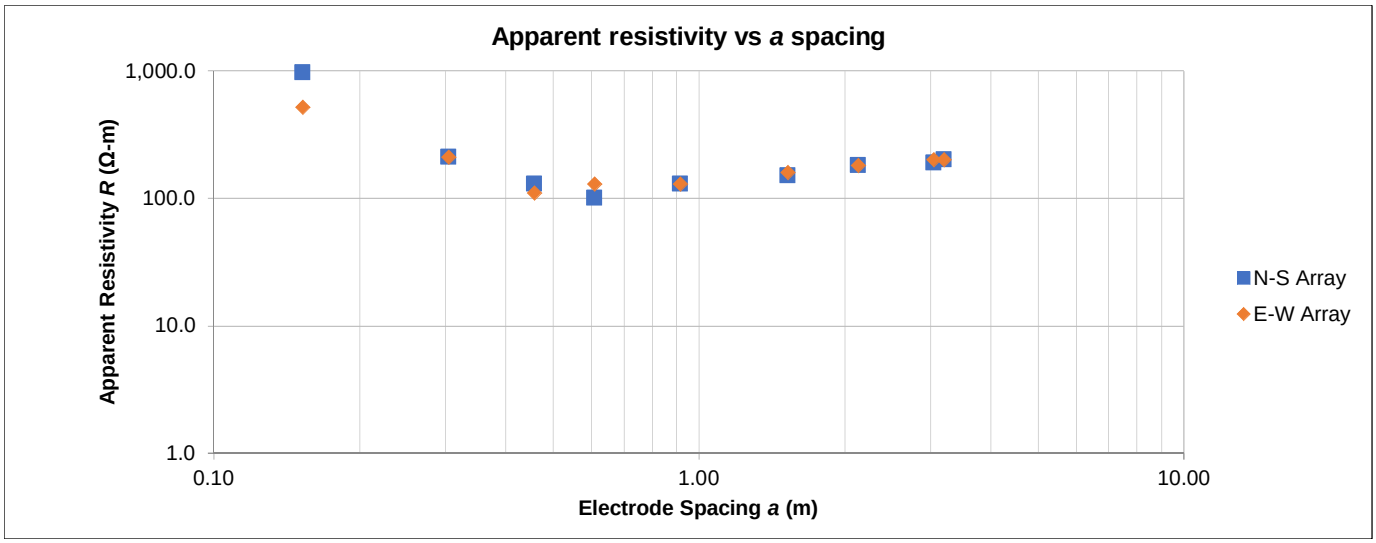


FIELD ELECTRICAL RESISTIVITY TEST DATA
Desert Peak ■ Palm Springs, Riverside County, CA
February 15, 2022 ■ Terracon Project No. 60215222

Array Loc.	ER-4		
Instrument	Minisiting R1	**Weather**	82, sunny, and windy
Serial #	S2107129	**Ground Cond.**	Medium dense sand
Test Date	October 11, 2021	**Tested By**	AS & JV
		Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts			

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test				E-W Test			
(feet)	(meters)	(inches)	(meters)	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ
				(amps)	%	Ω	(Ω-m)	(amps)	%	Ω	(Ω-m)
0.5	0.15	2	0.05	+5	0.1	872.80	970	+5	0.0	462.80	520
1	0.31	2	0.05	+10	0.1	107.20	210	+10	0.1	106.10	210
1.5	0.46	2	0.05	+20	0.0	43.51	130	+10	0.1	37.32	110
2	0.61	2	0.05	+10	0.0	25.59	100	+10	0.0	33.56	130
3	0.92	3	0.08	+10	0.0	22.57	130	+5	0.1	21.75	130
5	1.53	4	0.10	+20	0.0	15.80	150	+20	0.0	16.47	160
7	2.14	6	0.15	+10	0.1	13.06	180	+20	0.0	13.29	180
10	3.05	6	0.15	+50	0.0	9.88	190	+10	0.0	10.35	200
10.5	3.20	12	0.30	+50	0.0	9.72	200	+10	0.0	9.99	200



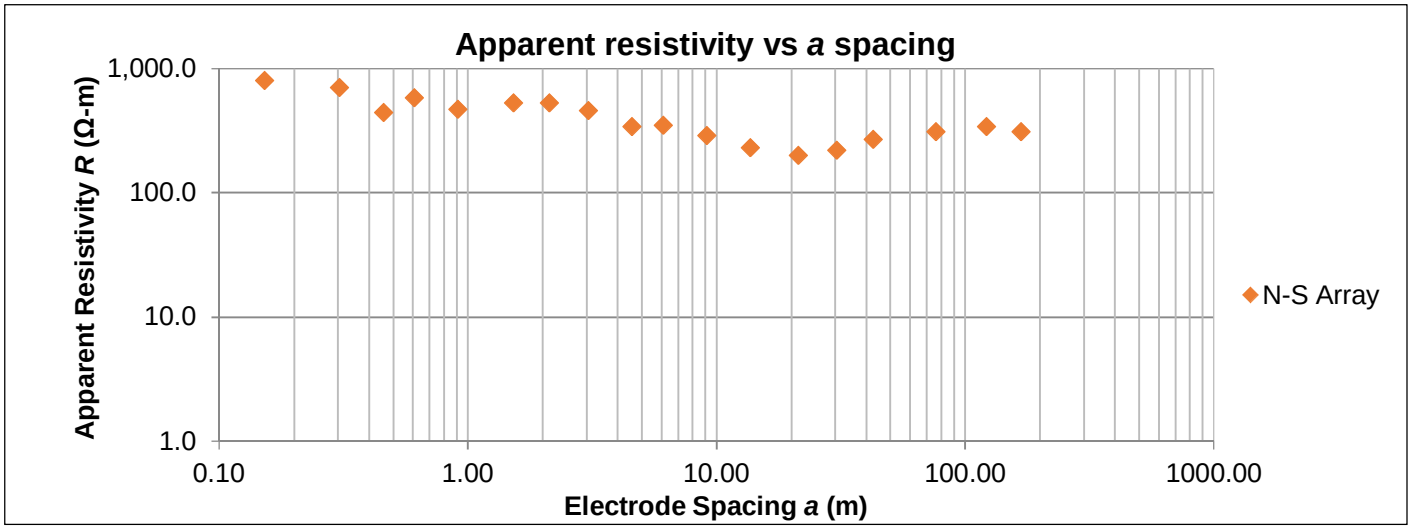
FIELD ELECTRICAL RESISTIVITY TEST DATA

Desert Peak ■ Palm Springs, Riverside County, CA
February 15, 2022 ■ Terracon Project No. 60215222

Array Loc.	ER-5		
Instrument	Minisiting R1	**Weather**	82, cloudy, and windy
Serial #	S2107129	**Ground Cond.**	Medium dense sand
Test Date	October 12, 2021	**Tested By**	AS & JV
		Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012
Notes & Conflicts	N/S ARRAY ONLY		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test			
(feet)	(meters)	(inches)	(meters)	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ
				(amps)	%	Ω	(Ω-m)
0.5	0.15	2	0.05	+5	0.1	712.50	800
1	0.31	2	0.05	+5	0.4	350.60	700
1.5	0.46	2	0.05	+5	0.1	151.20	440
2	0.61	2	0.05	+10	0.1	149.70	580
3	0.92	3	0.08	+10	0.0	81.62	470
5	1.53	4	0.10	+20	0.0	54.51	530
7	2.14	4	0.10	+20	0.0	39.29	530
10	3.05	4	0.10	+20	0.0	24.04	460
15	4.58	6	0.15	+20	0.0	11.97	340
20	6.10	6	0.15	+20	0.0	9.16	350
30	9.15	6	0.15	+20	0.0	5.04	290
45	13.73	6	0.15	+20	0.1	2.63	230
70	21.35	6	0.15	+20	0.1	1.49	200
100	30.50	6	0.15	+20	0.1	1.155	220
140	42.70	12	0.30	+20	0.1	1.005	270
250	76.25	12	0.30	+20	0.2	0.653	310
400	122.00	12	0.30	+20	0.9	0.447	340
550	167.75	12	0.30	+20	0.7	0.29	310



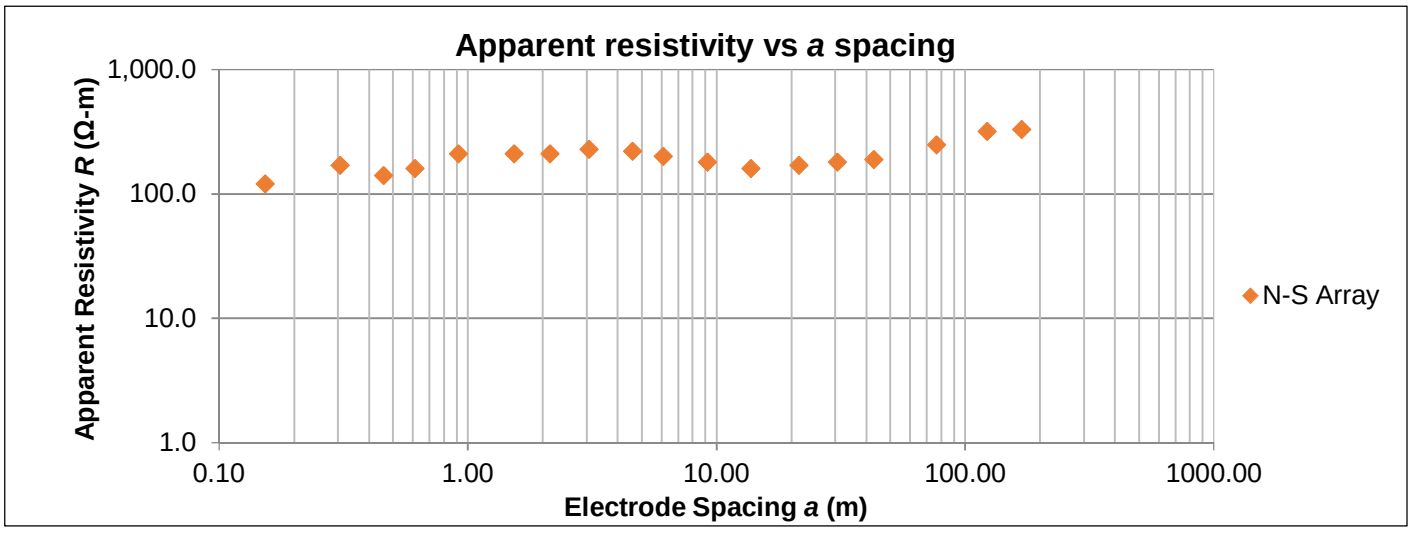
FIELD ELECTRICAL RESISTIVITY TEST DATA

Desert Peak ■ Palm Springs, Riverside County, CA
February 15, 2022 ■ Terracon Project No. 60215222

Array Loc.	ER-6		
Instrument	Minisiting R1	**Weather**	82, cloudy, and windy
Serial #	S2107129	**Ground Cond.**	Medium dense sand
Test Date	October 12, 2021	**Tested By**	AS & JV
		Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012
Notes & Conflicts	N/S ARRAY ONLY		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test			
(feet)	(meters)	(inches)	(meters)	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ
				(amps)	%	Ω	(Ω-m)
0.5	0.15	2	0.05	+20	0.1	103.00	120
1	0.31	2	0.05	+5	0.0	83.51	170
1.5	0.46	2	0.05	+10	0.0	47.67	140
2	0.61	2	0.05	+20	0.0	40.31	160
3	0.92	3	0.08	+20	0.0	35.59	210
5	1.53	4	0.10	+20	0.0	21.75	210
7	2.14	4	0.10	+5	0.8	15.37	210
10	3.05	4	0.10	+10	0.1	11.82	230
15	4.58	6	0.15	+20	0.0	7.50	220
20	6.10	6	0.15	+20	0.0	5.27	200
30	9.15	6	0.15	+20	0.1	3.13	180
45	13.73	6	0.15	+50	0.1	1.90	160
70	21.35	6	0.15	+20	0.3	1.25	170
100	30.50	6	0.15	+5	0.6	0.944	180
140	42.70	12	0.30	+20	0.1	0.723	190
250	76.25	12	0.30	+20	0.5	0.512	250
400	122.00	12	0.30	+50	0.9	0.419	320
550	167.75	12	0.30	+20	0.5	0.309	330



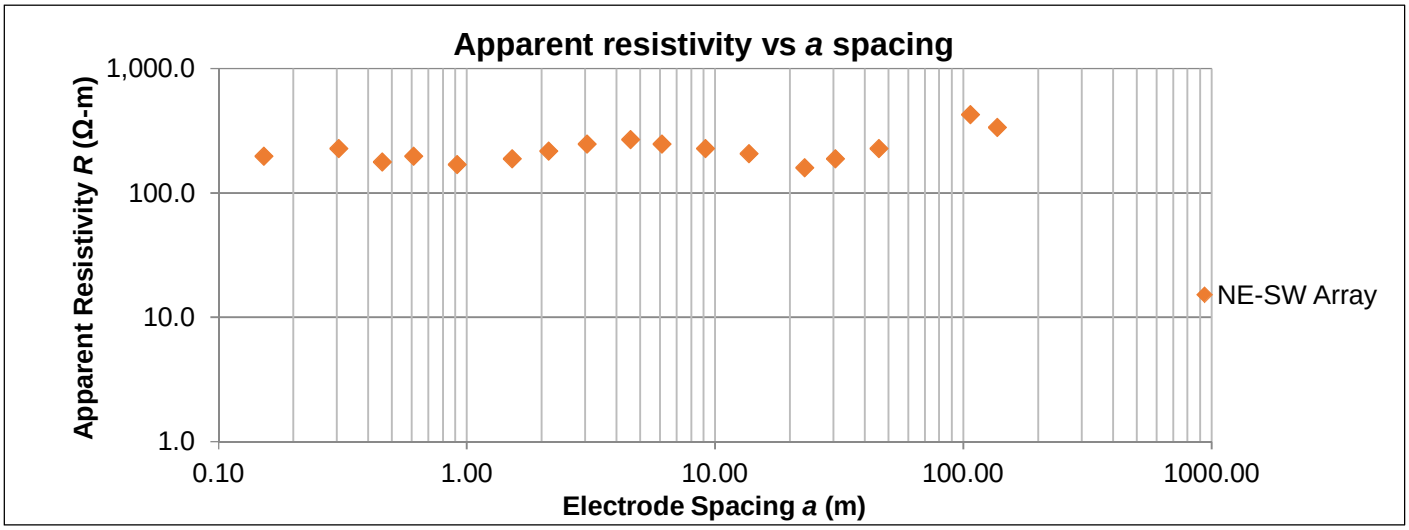
FIELD ELECTRICAL RESISTIVITY TEST DATA

Desert Peak ■ Palm Springs, Riverside County, CA
February 15, 2022 ■ Terracon Project No. 60215222

Array Loc.	ER-7		
Instrument	Minisiting R1	**Weather**	82, cloudy, and windy
Serial #	S2107129	**Ground Cond.**	Medium dense sand
Test Date	October 12, 2021	**Tested By**	AS & JV
		Method	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012
Notes & Conflicts	NE/SW ARRAY ONLY		

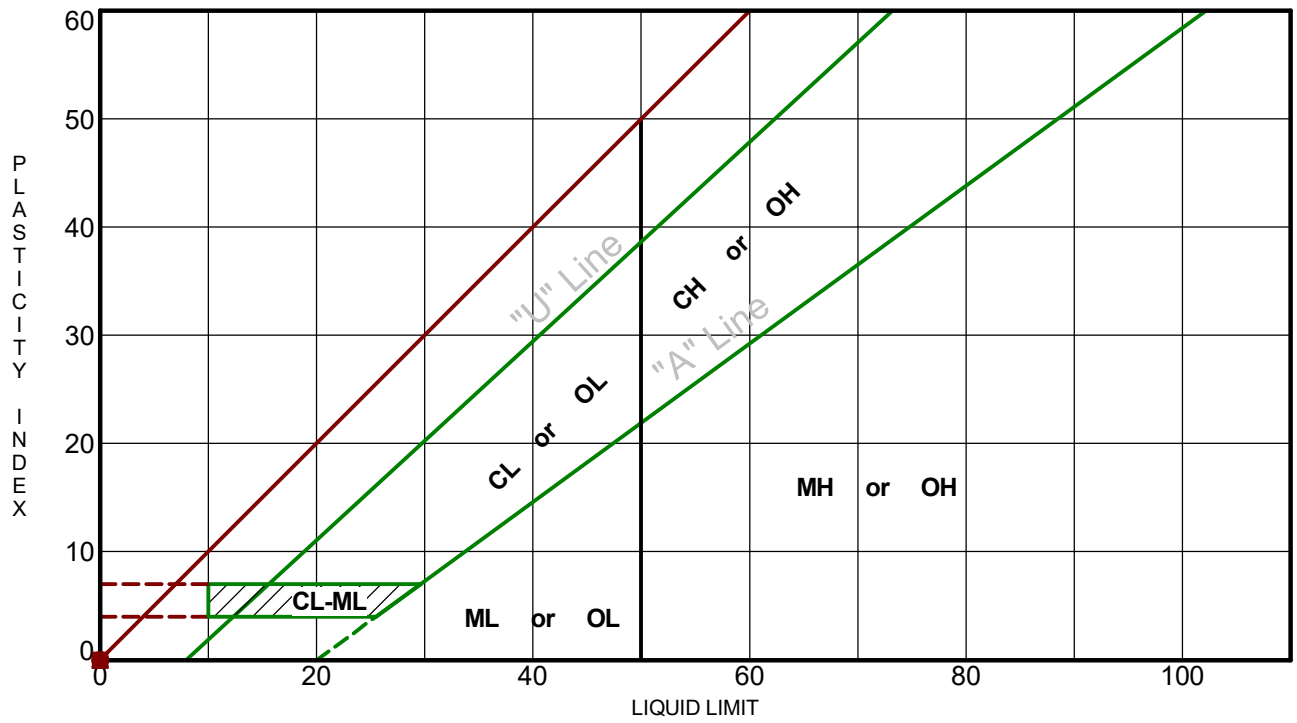
Apparent resistivity ρ is calculated as : $\rho = \dfrac{4\pi a R}{1 + \dfrac{2a}{\sqrt{a^2 + 4b^2}} - \dfrac{a}{\sqrt{a^2 + b^2}}}$

Electrode Spacing *a*		Electrode Depth *b*		NE-SW Test			
(feet)	(meters)	(inches)	(meters)	Current	Q Value	Measured Resistance *R*	Apparent Resistivity ρ
				(amps)	%	Ω	(Ω-m)
0.5	0.15	2	0.05	+20	0.0	176.30	200
1	0.31	2	0.05	+20	0.0	115.30	230
1.5	0.46	2	0.05	+20	0.0	61.80	180
2	0.61	2	0.05	+10	0.0	52.41	200
3	0.92	3	0.08	+20	0.0	29.47	170
5	1.53	4	0.10	+50	0.0	19.29	190
7	2.14	4	0.10	+50	0.0	16.61	220
10	3.05	4	0.10	+20	0.0	13.18	250
15	4.58	6	0.15	+50	0.0	9.50	270
20	6.10	6	0.15	+20	0.1	6.64	250
30	9.15	6	0.15	+20	0.1	3.96	230
45	13.73	6	0.15	+10	0.1	2.46	210
75	22.88	6	0.15	+5	1.8	1.11	160
100	30.50	6	0.15	+20	0.3	0.993	190
150	45.75	12	0.30	+20	0.4	0.813	230
350	106.75	12	0.30	+20	0.6	0.646	430
450	137.25	12	0.30	+20	0.5	0.391	340



ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID		Depth	LL	PL	PI	Fines	USCS	Description
●	B-01	0 - 2.5	NP	NP	NP	8.5	SP-SM	POORLY GRADED SAND WITH SILT
⊠	B-02	7.5 - 9	NP	NP	NP	7.8	SP-SM	POORLY GRADED SAND WITH SILT
▲	B-04	0 - 2.5	NP	NP	NP	9.2	SP-SM	POORLY GRADED SAND WITH SILT AND GRAVEL
★	B-05	5 - 6.5	NP	NP	NP	6.8	SP-SM	POORLY GRADED SAND WITH SILT
⊙	B-08	0 - 2.5	NP	NP	NP	5.8	SP-SM	POORLY GRADED SAND WITH SILT AND GRAVEL
✿	B-09	5 - 6.5	NP	NP	NP	6.7	SP-SM	POORLY GRADED SAND WITH SILT
○	TL-01	0 - 2.5	NP	NP	NP	18.1	SM	SILTY SAND

PROJECT: Desert Peak Solar

PROJECT NUMBER: 60215222

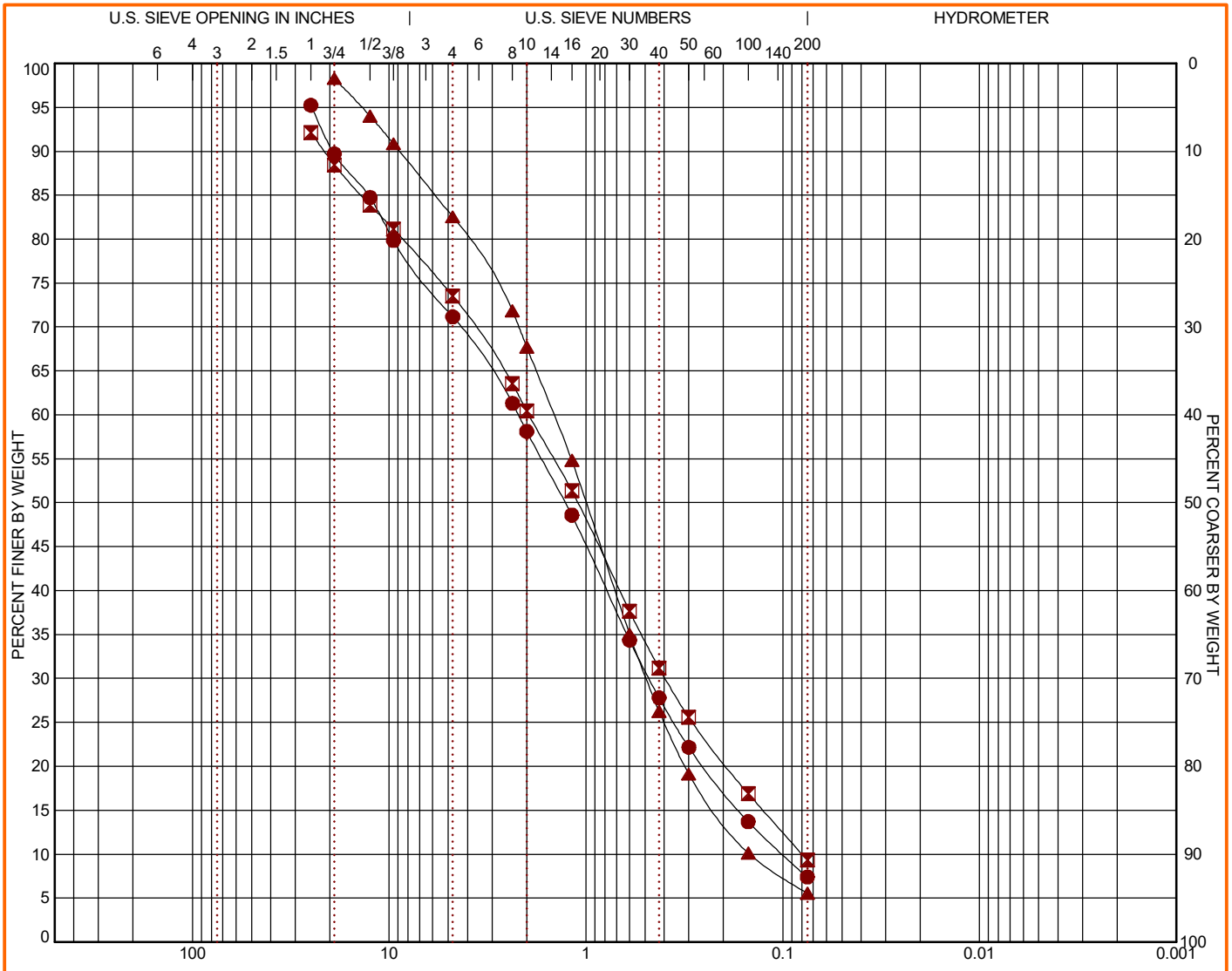
SITE: I-10 and Highway 62
Desert Hot Springs, CA

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: NextEra Energy Inc
Austin, TX

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
●	TP-1A	0 - 4		24.1	63.8		7.4		SP-SM
⊠	TP-1B	0 - 4		18.6	64.2		9.3		SP-SM
▲	TP-3A	0 - 4		15.7	77.0		5.6		SP-SM

GRAIN SIZE	●	⊠	▲
D_{60}	2.205	1.949	1.457
D_{30}	0.477	0.395	0.492
D_{10}	0.1	0.08	0.147

COEFFICIENTS	●	⊠	▲
C_C	1.03	1.00	1.13
C_U	22.09	24.41	9.94

●		⊠		▲	
Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
1"	95.23	1"	92.16	3/4"	98.29
3/4"	89.7	3/4"	88.47	1/2"	94.01
1/2"	84.73	1/2"	83.88	3/8"	90.86
3/8"	79.84	3/8"	81.11	#4	82.54
#4	71.16	#4	73.54	#8	71.82
#8	61.31	#8	63.54	#10	67.74
#10	58.11	#10	60.44	#16	54.84
#16	48.59	#16	51.38	#30	35.05
#30	34.34	#30	37.66	#40	26.27
#40	27.79	#40	31.18	#50	19.11
#50	22.15	#50	25.56	#100	10.15
#100	13.69	#100	16.92	#200	5.58
#200	7.4	#200	9.31		

SOIL DESCRIPTION	
●	POORLY GRADED SAND WITH SILT (SP-SM)
⊠	POORLY GRADED SAND WITH SILT (SP-SM)
▲	POORLY GRADED SAND WITH SILT (SP-SM)

REMARKS	
●	
⊠	
▲	

PROJECT: Desert Peak Solar

SITE: I-10 and Highway 62
Desert Hot Springs, CA

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

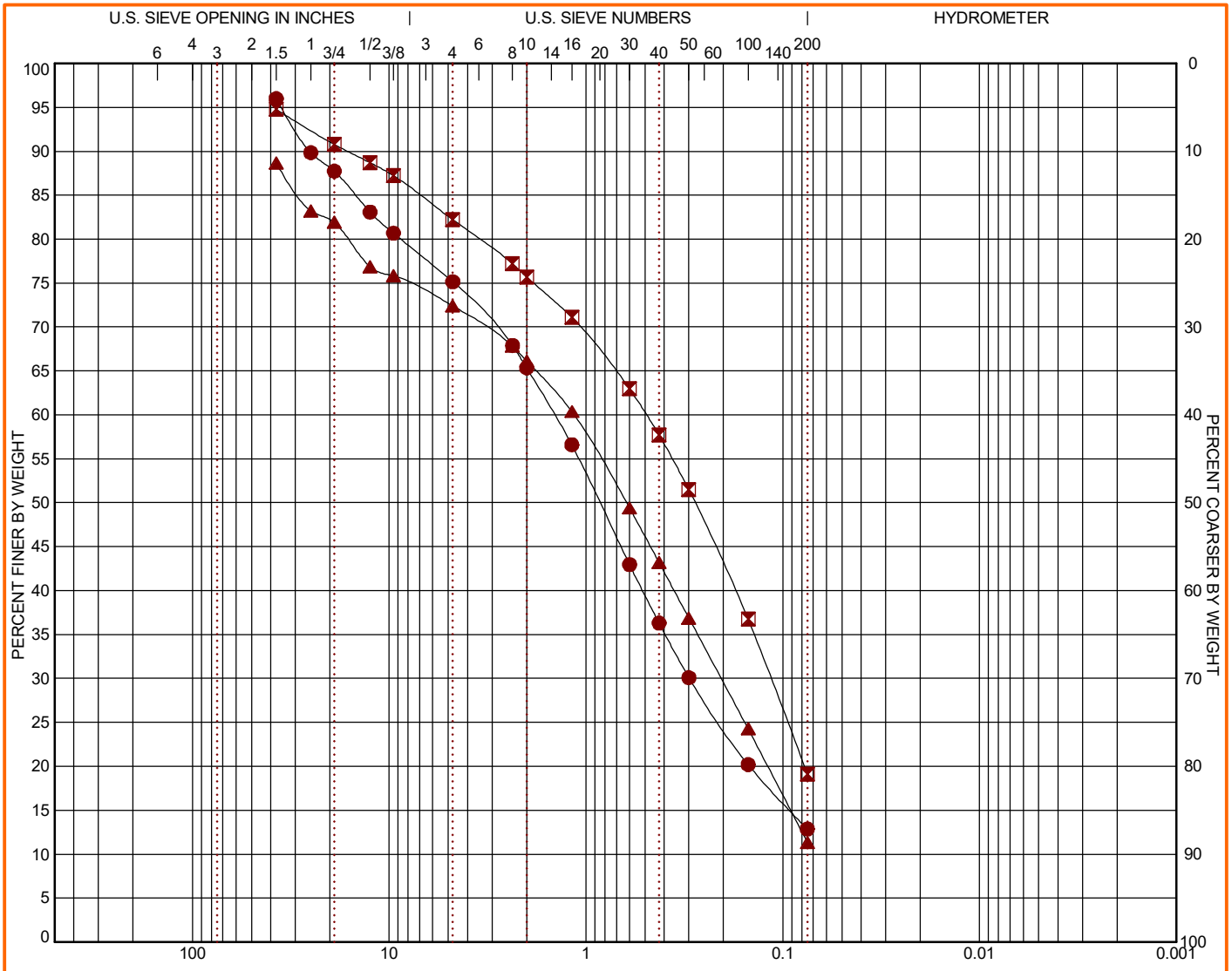
PROJECT NUMBER: 60215222

CLIENT: NextEra Energy Inc
Austin, TX

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 60215222 DESERT PEAK 230-3 - CHECKED OUT BY JV.GPJ TERRACON_DATATEMPLATE.GDT 11/12/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
●	TP-3B	0 - 4		20.8	62.3		12.9		SM
⊠	TP-5B	0 - 4		12.6	63.1		19.1		SM
▲	TP-6A	0 - 4		16.3	61.0		11.4		SP-SM

GRAIN SIZE	●	⊠	▲
D_{60}	1.449	0.494	1.153
D_{30}	0.298	0.115	0.206
D_{10}			

COEFFICIENTS	●	⊠	▲
C_C			0.53
C_U			16.52

●		⊠		▲	
Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
1 1/2"	96.0	1 1/2"	94.78	1 1/2"	88.67
1"	89.84	3/4"	90.78	1"	83.2
3/4"	87.73	1/2"	88.7	3/4"	81.92
1/2"	83.07	3/8"	87.22	1/2"	76.84
3/8"	80.67	#4	82.21	3/8"	75.82
#4	75.15	#8	77.19	#4	72.39
#8	67.89	#10	75.69	#8	67.81
#10	65.34	#16	71.1	#10	66.14
#16	56.59	#30	62.95	#16	60.38
#30	42.96	#40	57.7	#30	49.4
#40	36.3	#50	51.5	#40	43.19
#50	30.08	#100	36.74	#50	36.87
#100	20.19	#200	19.13	#100	24.27
#200	12.86			#200	11.35

SOIL DESCRIPTION	
●	SILTY SAND WITH GRAVEL (SM)
⊠	SILTY SAND WITH GRAVEL (SM)
▲	POORLY GRADED SAND WITH SILT (SP-SM)

REMARKS	
●	
⊠	
▲	

PROJECT: Desert Peak Solar

PROJECT NUMBER: 60215222

SITE: I-10 and Highway 62
Desert Hot Springs, CA

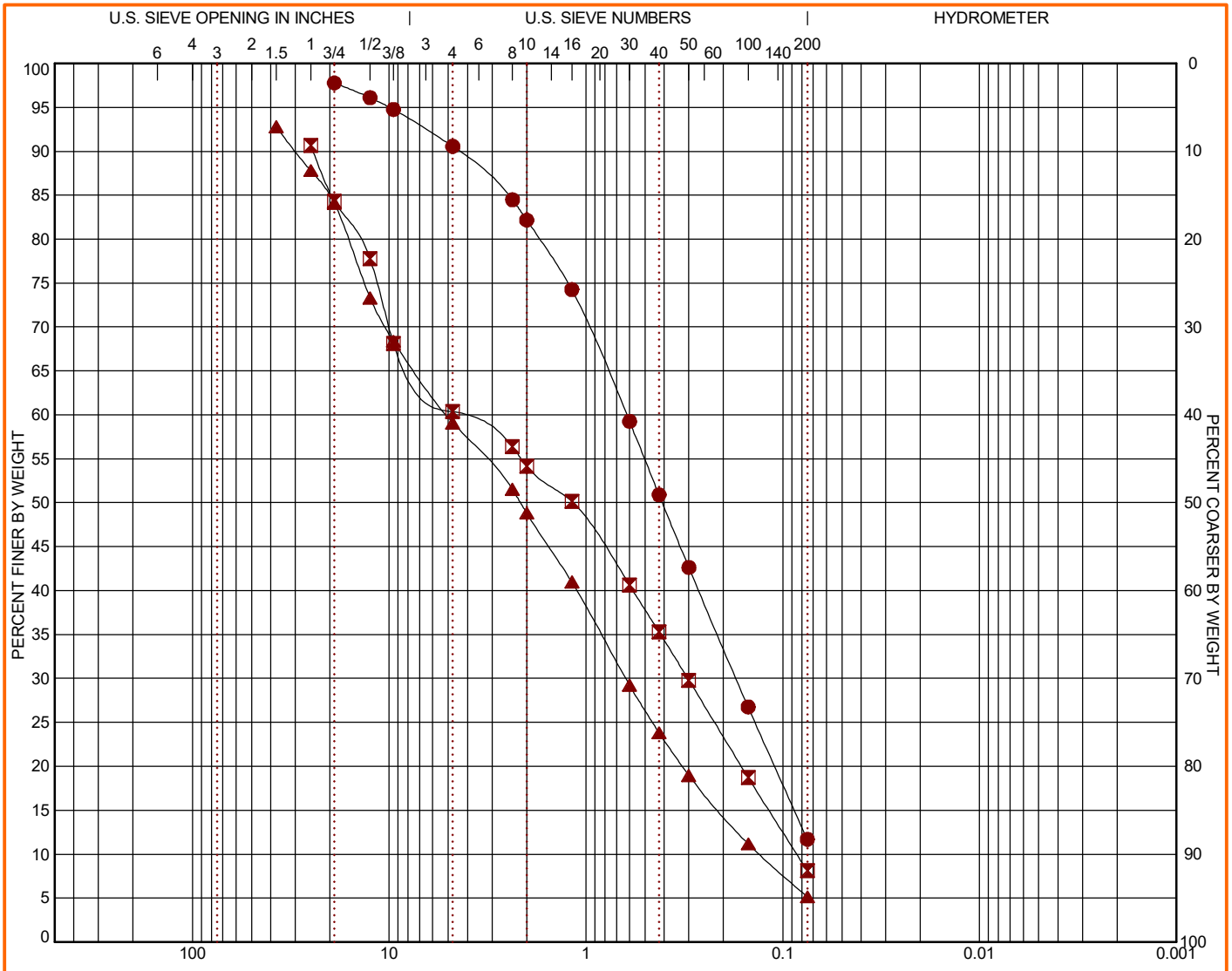
Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: NextEra Energy Inc
Austin, TX

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 60215222 DESERT PEAK 230-3 - CHECKED OUT BY JV.GPJ TERRACON_DATATEMPLATE.GDT 11/12/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
●	TP-6B	0 - 4		7.2	78.9		11.7		SP-SM
⊠	TP-7A	0 - 4		30.3	52.2		8.1		SP-SM
▲	TP-7B	0 - 4		33.7	53.9		5.1		SP-SM

GRAIN SIZE	●	⊠	▲
D_{60}	0.62	4.466	5.09
D_{30}	0.173	0.304	0.627
D_{10}		0.085	0.131

COEFFICIENTS	●	⊠	▲
C_C	0.69	0.24	0.59
C_U	8.94	52.66	38.84

●		⊠		▲	
Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
3/4"	97.78	1"	90.68	1 1/2"	92.78
1/2"	96.1	3/4"	84.35	1"	87.8
3/8"	94.75	1/2"	77.78	3/4"	84.11
#4	90.56	3/8"	68.11	1/2"	73.31
#8	84.49	#4	60.35	3/8"	68.39
#10	82.16	#8	56.36	#4	59.07
#16	74.26	#10	54.13	#8	51.51
#30	59.26	#16	50.17	#10	48.82
#40	50.9	#30	40.61	#16	40.99
#50	42.62	#40	35.29	#30	29.23
#100	26.76	#50	29.81	#40	23.82
#200	11.69	#100	18.74	#50	18.95
		#200	8.12	#100	11.18
				#200	5.15

SOIL DESCRIPTION	
●	POORLY GRADED SAND WITH SILT (SP-SM)
⊠	POORLY GRADED SAND WITH SILT (SP-SM)
▲	POORLY GRADED SAND WITH SILT (SP-SM)

REMARKS	
●	
⊠	
▲	

PROJECT: Desert Peak Solar

PROJECT NUMBER: 60215222

SITE: I-10 and Highway 62
Desert Hot Springs, CA

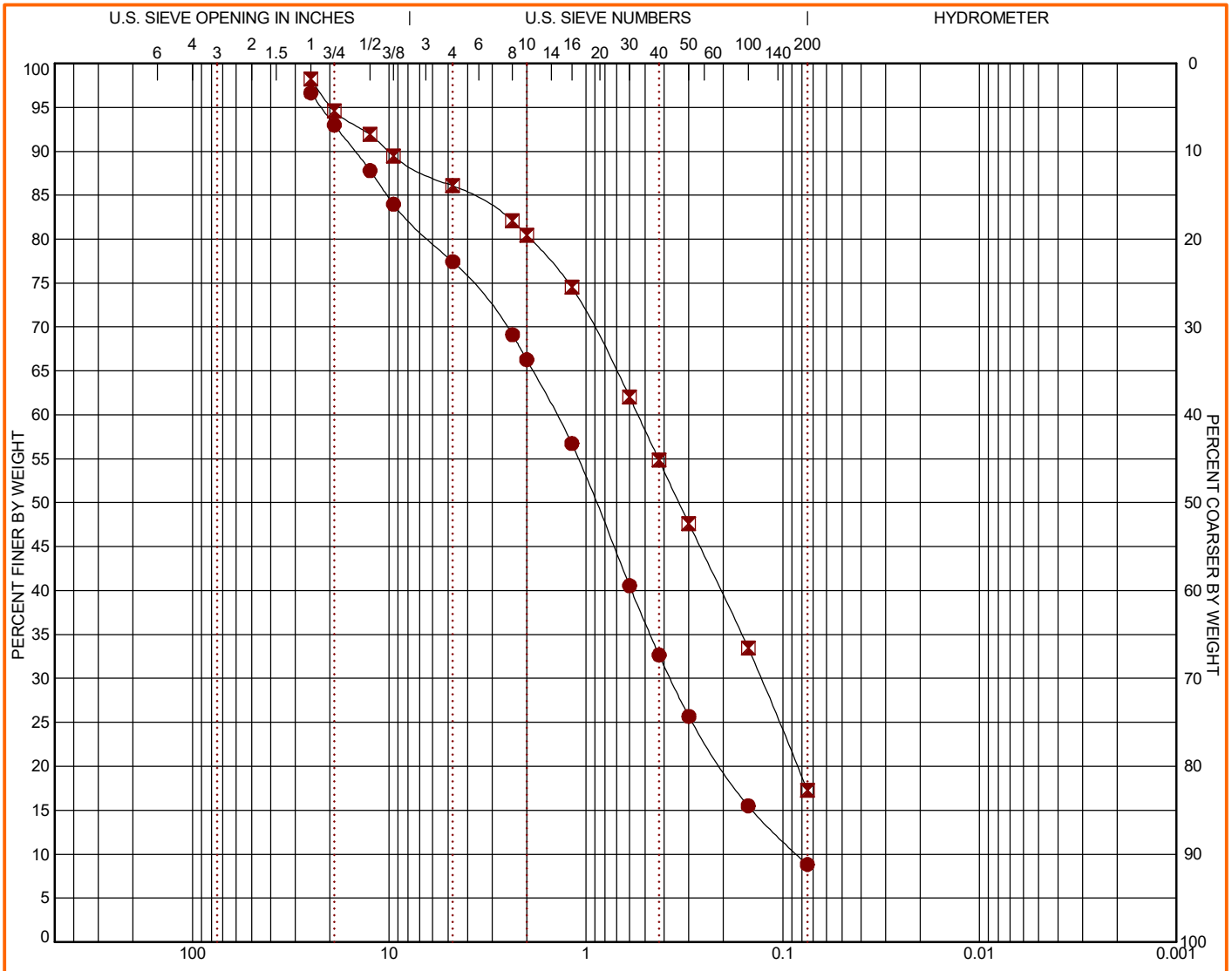
Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: NextEra Energy Inc
Austin, TX

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 60215222 DESERT PEAK 230-3 - CHECKED OUT BY JV.GPJ TERRACON_DATATEMPLATE.GDT 11/12/21

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BORING ID	DEPTH	% COBBLES	% GRAVEL	% SAND	% SILT	% FINES	% CLAY	USCS
●	TP-9A	0 - 4		19.2	68.6		8.8		SP-SM
⊠	TP-9B	0 - 2		12.2	68.8		17.3		SM

GRAIN SIZE	●	⊠
D_{60}	1.413	0.545
D_{30}	0.372	0.129
D_{10}	0.085	

COEFFICIENTS	●	⊠
C_C	1.16	
C_U	16.68	

●		⊠			
Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
1"	96.63	1"	98.23		
3/4"	92.98	3/4"	94.59		
1/2"	87.79	1/2"	91.91		
3/8"	83.97	3/8"	89.45		
#4	77.43	#4	86.07		
#8	69.12	#8	82.08		
#10	66.28	#10	80.47		
#16	56.74	#16	74.52		
#30	40.55	#30	62.02		
#40	32.66	#40	54.83		
#50	25.68	#50	47.62		
#100	15.51	#100	33.48		
#200	8.83	#200	17.29		

SOIL DESCRIPTION	
●	POORLY GRADED SAND WITH SILT (SP-SM)
⊠	SILTY SAND (SM)

REMARKS	
●	
⊠	

PROJECT: Desert Peak Solar

SITE: I-10 and Highway 62
Desert Hot Springs, CA

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

PROJECT NUMBER: 60215222

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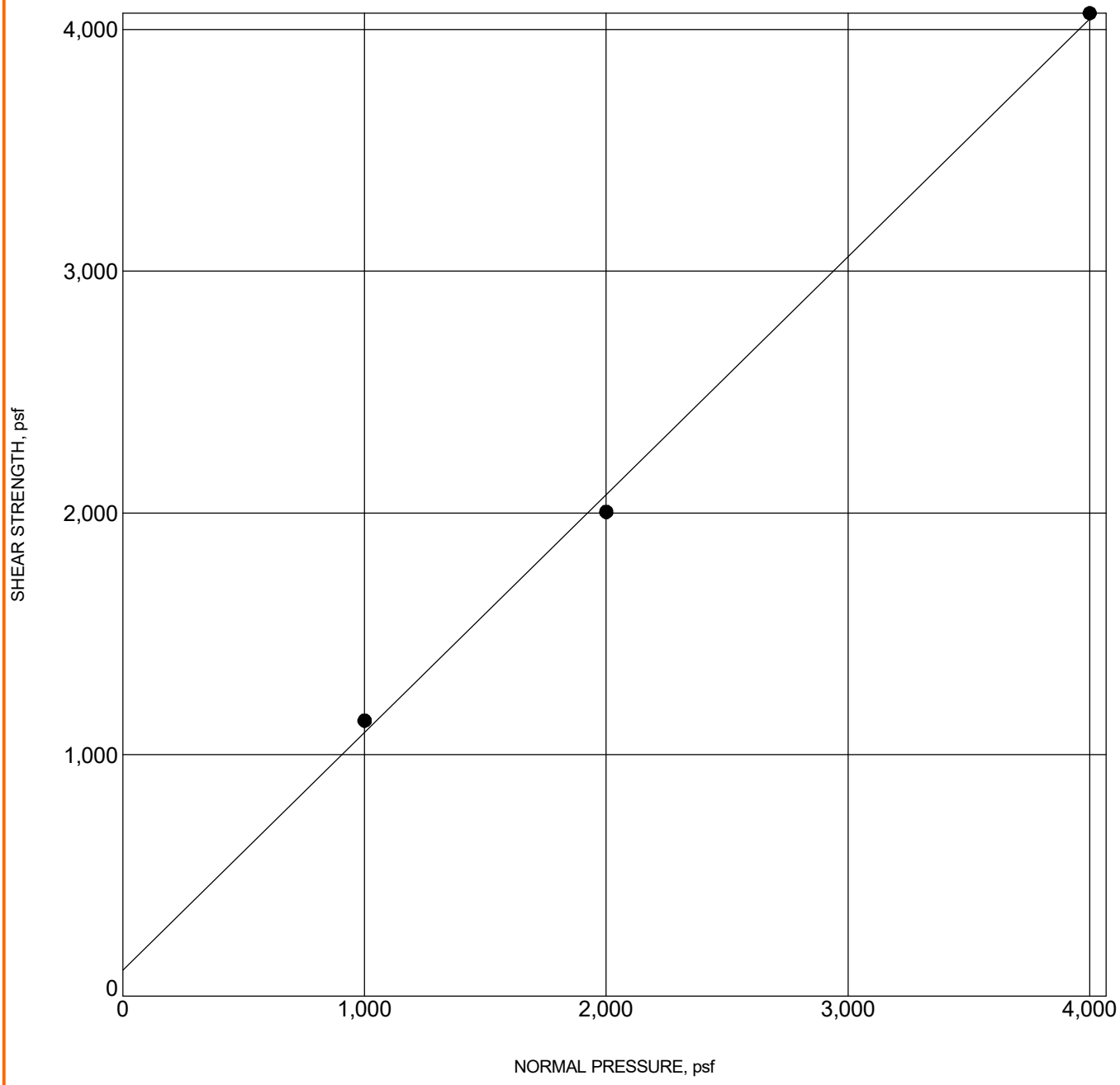
Austin, TX

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 60215222 DESERT PEAK 230-3 - CHECKED OUT BY JV.GPJ TERRACON_DATATEMPLATE.GDT 11/12/21

DIRECT SHEAR TEST ASTM D3080



Specimen Identification		Classification	γ_d, pcf	WC,%	c, psf	$\phi°$
● B-04	10.0ft	POORLY GRADED SAND WITH SILT (SP-SM)	114	2	108	45

PROJECT: Desert Peak Solar

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Desert Hot Springs, CA

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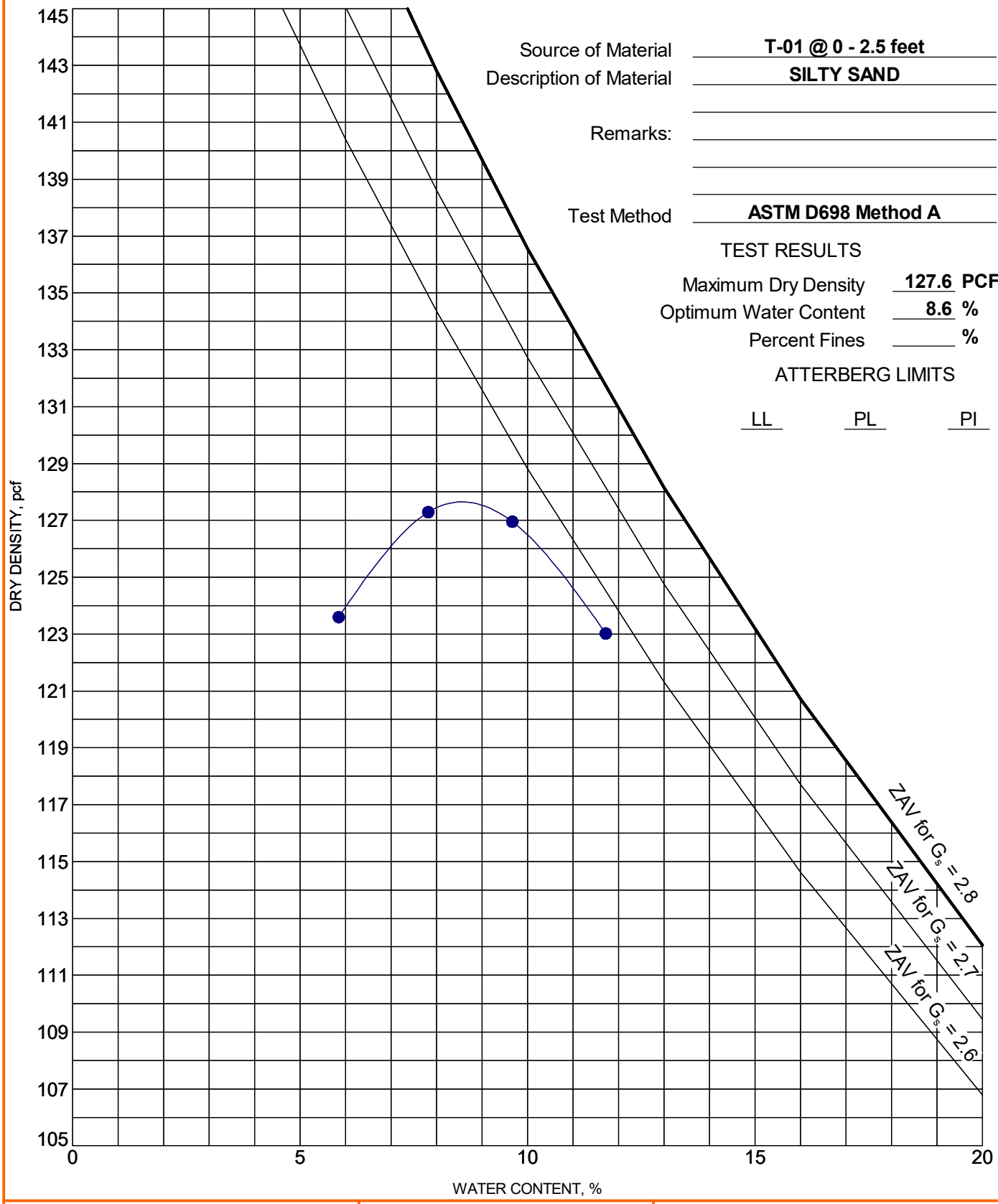
1421 Edinger Ave, Ste C
Tustin, CA

PROJECT NUMBER: 60215222

CLIENT: NextEra Energy Inc
Austin, TX

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material	**T-01 @ 0 - 2.5 feet**
Description of Material	**SILTY SAND**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Maximum Dry Density	**127.6**	**PCF**
Optimum Water Content	**8.6**	**%**
Percent Fines		**%**

ATTERBERG LIMITS

LL	PL	PI

PROJECT: Desert Peak Solar

PROJECT NUMBER: 60215222

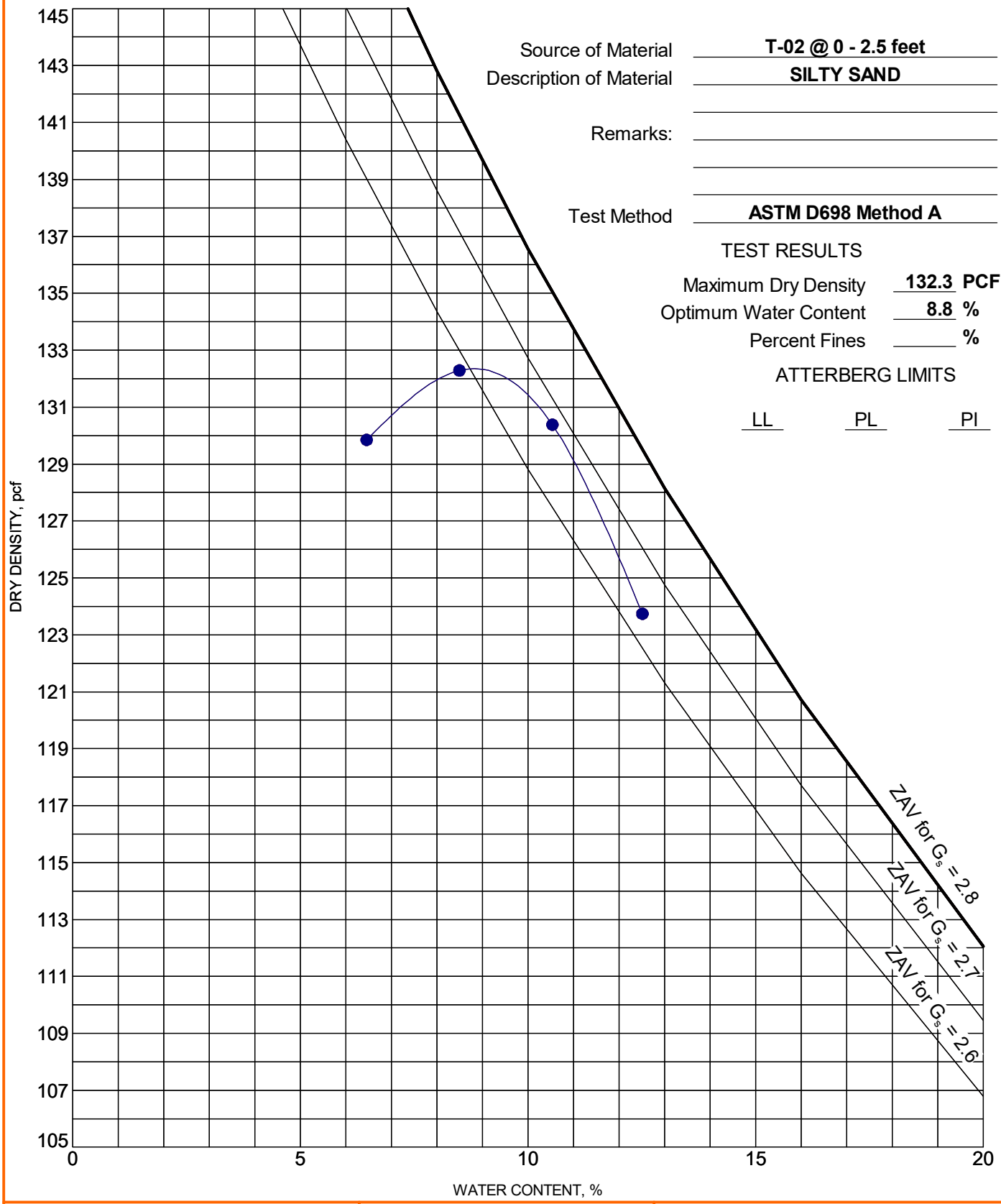
SITE: I-10 and Highway 62
Desert Hot Springs, CA

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: NextEra Energy Inc
Austin, TX

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material	**T-02 @ 0 - 2.5 feet**
Description of Material	**SILTY SAND**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Maximum Dry Density	**132.3**	**PCF**
Optimum Water Content	**8.8**	**%**
Percent Fines		**%**

ATTERBERG LIMITS

LL	PL	PI

PROJECT: Desert Peak Solar

PROJECT NUMBER: 60215222

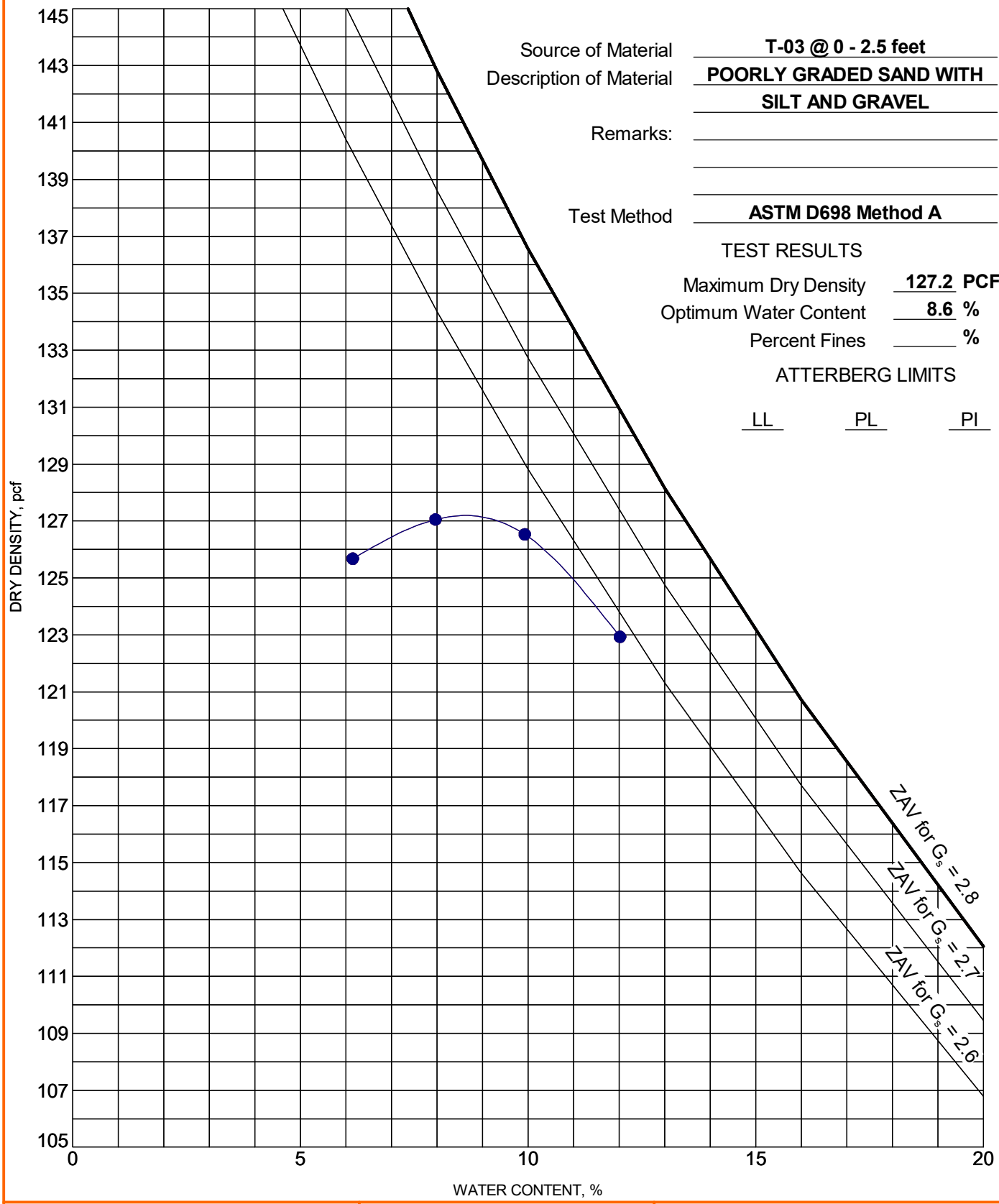
SITE: I-10 and Highway 62
Desert Hot Springs, CA

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: NextEra Energy Inc
Austin, TX

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material: **T-03 @ 0 - 2.5 feet**

Description of Material: **POORLY GRADED SAND WITH SILT AND GRAVEL**

Remarks:

Test Method: **ASTM D698 Method A**

TEST RESULTS

Maximum Dry Density	**127.2**	**PCF**
Optimum Water Content	**8.6**	**%**
Percent Fines		**%**

ATTERBERG LIMITS

LL	PL	PI

PROJECT: Desert Peak Solar

PROJECT NUMBER: 60215222

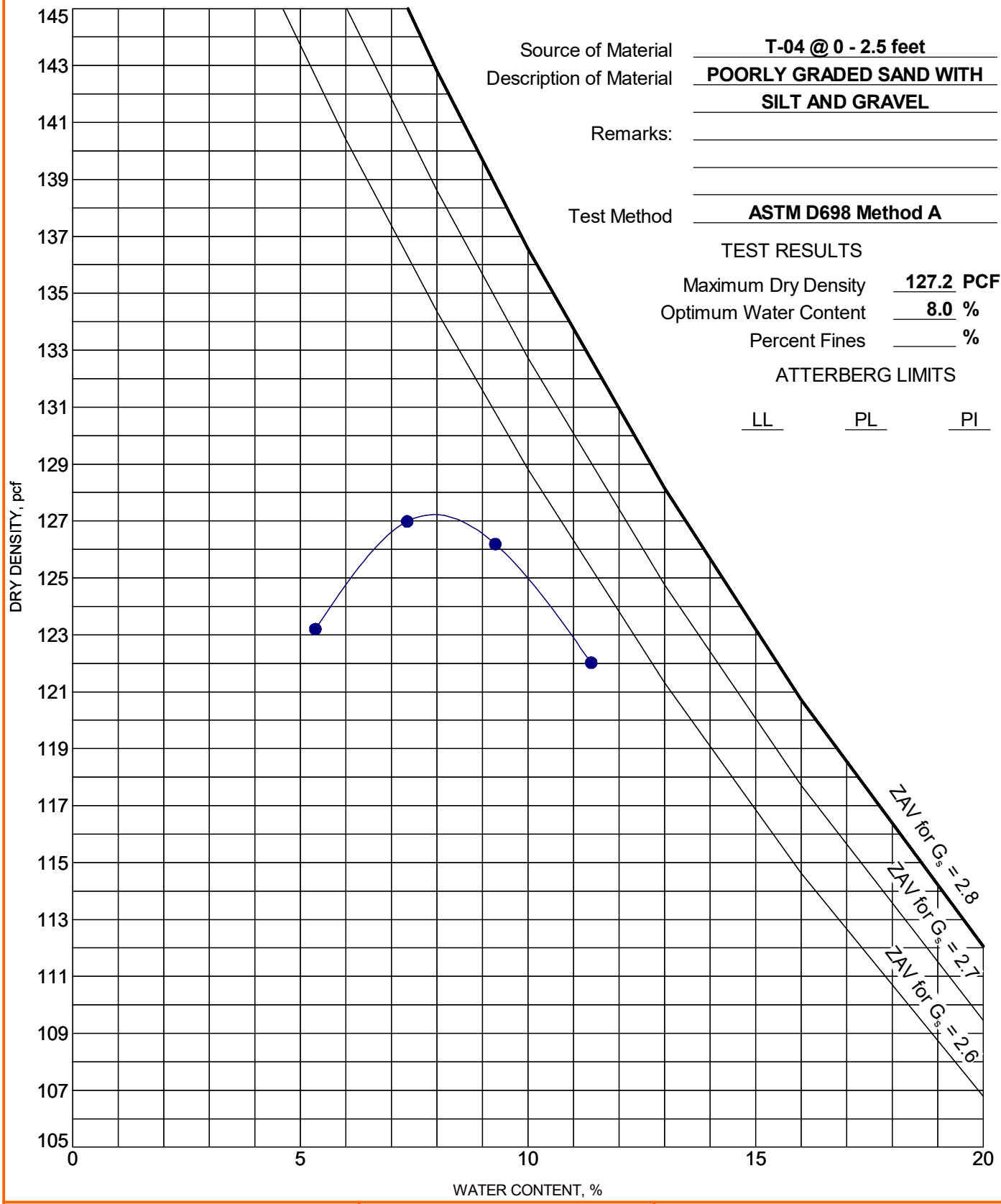
SITE: I-10 and Highway 62
Desert Hot Springs, CA

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: NextEra Energy Inc
Austin, TX

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material	**T-04 @ 0 - 2.5 feet**
Description of Material	**POORLY GRADED SAND WITH SILT AND GRAVEL**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Maximum Dry Density	**127.2**	**PCF**
Optimum Water Content	**8.0**	**%**
Percent Fines		**%**

ATTERBERG LIMITS

LL	PL	PI

PROJECT: Desert Peak Solar

PROJECT NUMBER: 60215222

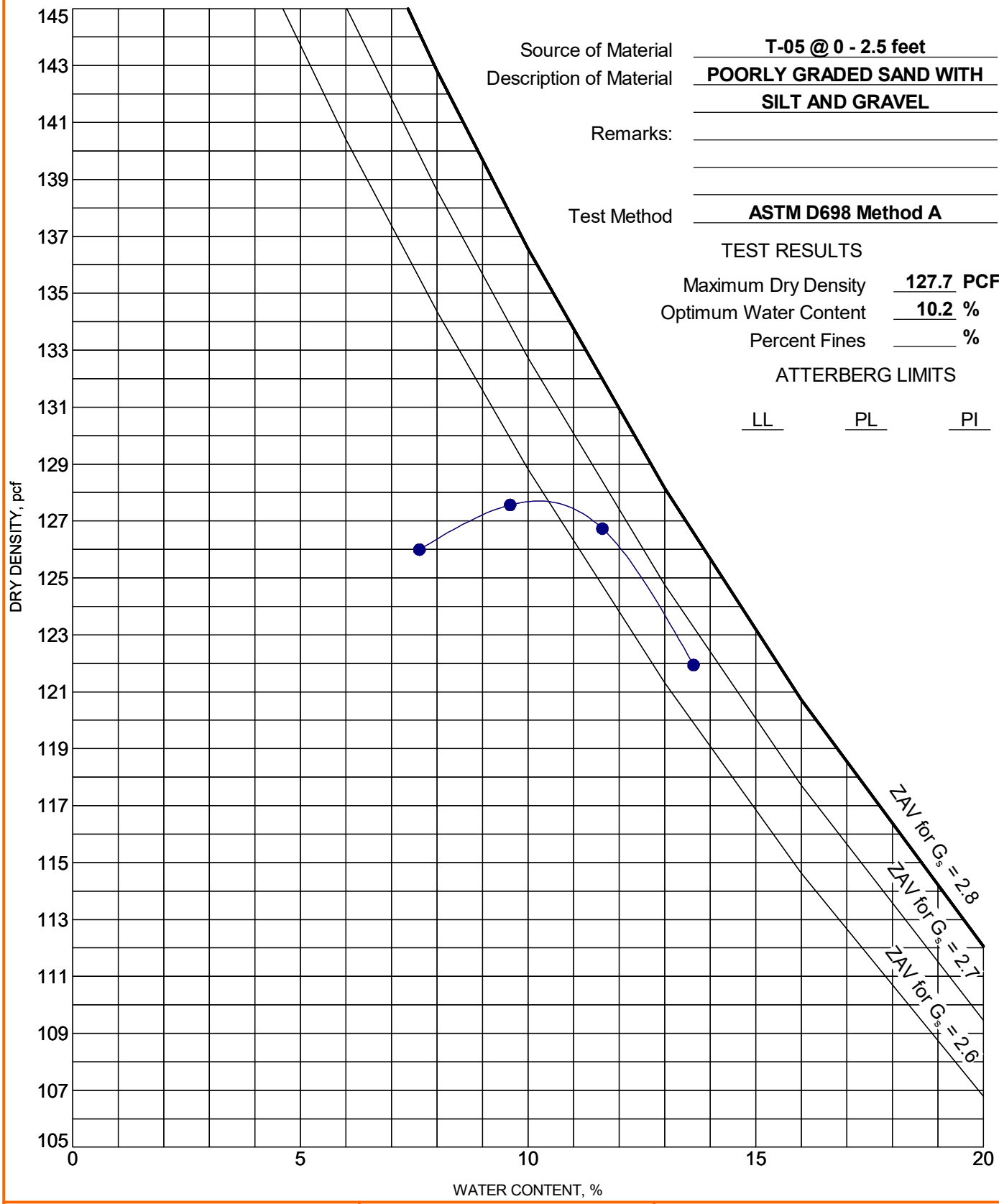
SITE: I-10 and Highway 62
Desert Hot Springs, CA

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: NextEra Energy Inc
Austin, TX

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material: **T-05 @ 0 - 2.5 feet**

Description of Material: **POORLY GRADED SAND WITH SILT AND GRAVEL**

Remarks:

Test Method: **ASTM D698 Method A**

TEST RESULTS

Maximum Dry Density	**127.7**	**PCF**
Optimum Water Content	**10.2**	**%**
Percent Fines		**%**

ATTERBERG LIMITS

LL	PL	PI

PROJECT: Desert Peak Solar

PROJECT NUMBER: 60215222

SITE: I-10 and Highway 62
Desert Hot Springs, CA

Terracon
1421 Edinger Ave, Ste C
Tustin, CA

CLIENT: NextEra Energy Inc
Austin, TX

750 Pilot Road, Suite F
Las Vegas, Nevada 89119
(702) 597-9393

Client
NextEra Energy Constructors, LLC

Project
Desert Peak 230-34.5kV Collector Substaion, BESS, and Transmission

Sample Submitted By: Terracon (60) **Date Received:** 11/4/2021 **Lab No.: 21-0825**

Results of Corrosion Analysis

Sample Number	--	--	--
Sample Location	B-2	B-4	B-11
Sample Depth (ft.)	0.0	0.0	0.0
pH Analysis, ASTM G 51	9.04	9.11	8.91
Water Soluble Sulfate (SO4), ASTM C 1580 (percent %)	0.01	0.01	0.01
Sulfides, AWWA 4500-S D, (mg/kg)	Nil	Nil	Nil
Chlorides, ASTM D 512, (mg/kg)	52	72	30
Red-Ox, ASTM G 200, (mV)	+707	+709	+715
Total Salts, AWWA 2540, (mg/kg)	90	463	275
Saturated Minimum Resistivity, ASTM G 187, (ohm-cm)	5092	5427	7370

Analyzed By:
Nathan Campo
Engineering Technician II

750 Pilot Road, Suite F
Las Vegas, Nevada 89119
(702) 597-9393

Client
NextEra Energy Constructors, LLC

Project
Desert Peak 230-34.5kV Collector Substation, BESS, and Transmission

Sample Submitted By: Terracon (60) **Date Received:** 10/26/2021 **Lab No.: 21-0794**

Results of Corrosion Analysis

Sample Number	--	--
Sample Location	B-06	B-09
Sample Depth (ft.)	0.0	0.0
pH Analysis, ASTM G 51	8.25	7.43
Water Soluble Sulfate (SO4), ASTM C 1580 (percent %)	0.01	0.01
Sulfides, AWWA 4500-S D, (mg/kg)	Nil	Nil
Chlorides, ASTM D 512, (mg/kg)	305	45
Red-Ox, ASTM G 200, (mV)	+705	+714
Total Salts, AWWA 2540, (mg/kg)	280	247
Saturated Minimum Resistivity, ASTM G 187, (ohm-cm)	6499	6700

Analyzed By:
Nathan Campo
Engineering Technician II

21239 FM529 Rd., Bldg. F
Cypress, TX 77433
Tel: 281-985-9344
Fax: 832-427-1752
info@geothermusa.com
http://www.geothermusa.com

November 11, 2021

Terracon Consultants, Inc.
1421 Edinger Avenue, Suite C
Tustin, CA 92780
Attn: Abigail McCranie, EIT

Re: Thermal Analysis of Native Soil Samples
Desert Peak Solar – Palm Springs, CA (Project No. 60215222)

The following is the report of thermal dryout characterization tests conducted on five (5) native soil samples from the referenced project sent to our laboratory.

Thermal Resistivity Tests: The samples were tested at the 'optimum' moisture content and 85% and 90% of standard Proctor dry density ***provided by Terracon***. The tests were conducted in accordance with the IEEE standard 442-2017. The results are tabulated below and the thermal dryout curves are presented in **Figures 1 to 5.**

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

Sample ID @ 0' – 5'	Effort (%)	Description (Company name)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
			Wet	Dry		
T-01	85	Silty sand	77	204	9	109
	95		68	156		121
T-02	85	Silty sand	64	167	9	113
	95		56	124		126
T-03	85	Poorly graded sand with silt	72	203	9	108
	95		63	154		121
T-04	85	Poorly graded sand with silt	78	196	8	108
	95		64	152		121

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

Sample ID @ 0' – 5'	Effort (%)	Description (Terracon)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
			Wet	Dry		
T-05	85	Poorly graded sand with silt	80	239	10	109
	95		66	169		121

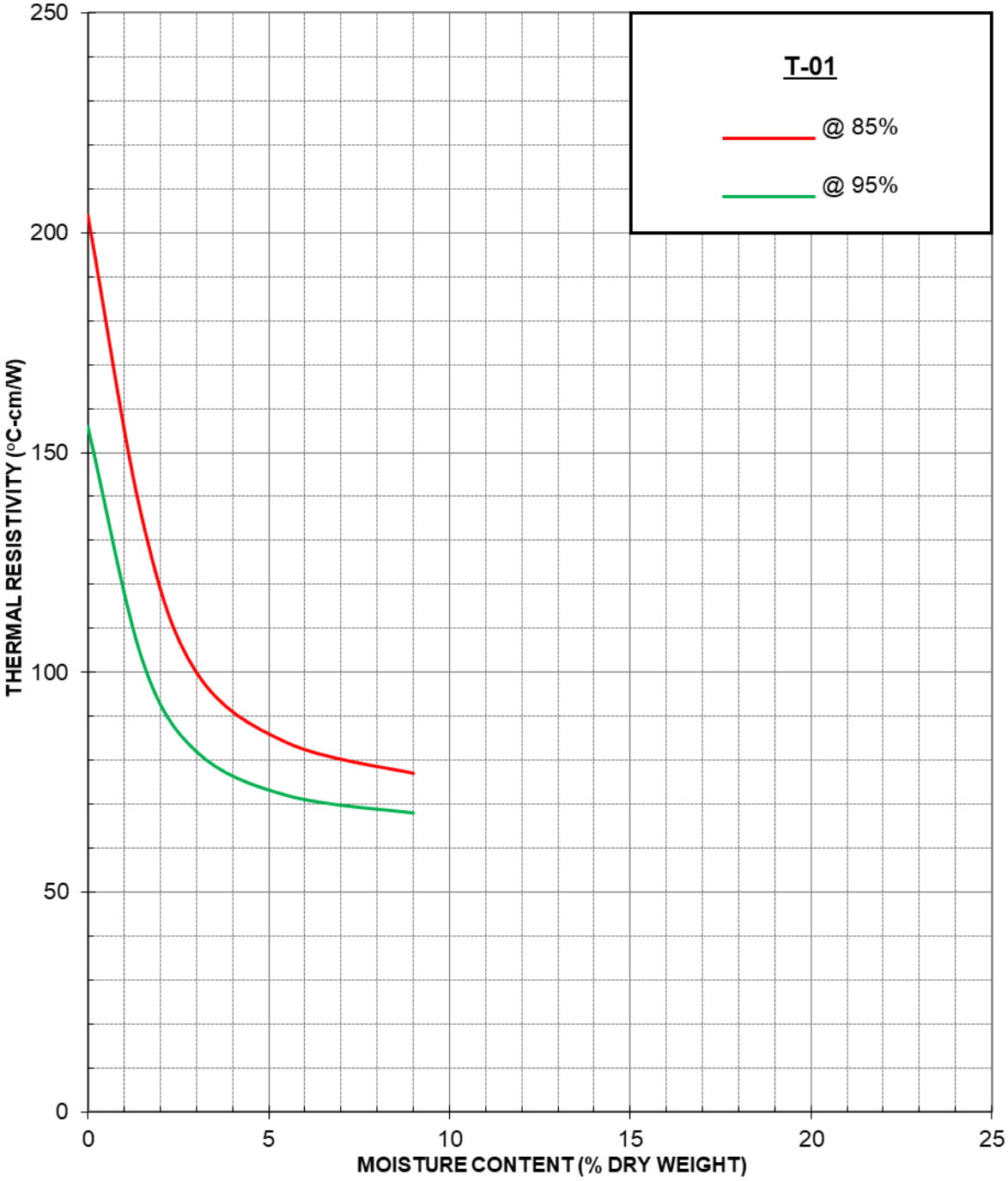
Comments: The thermal characteristic depicted in the dryout curves apply for the soils at their respective test dry density.

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

Geotherm USA

Deepak Parmar

THERMAL DRYOUT CURVES



Terracon Consultants, Inc. (Project No. 60215222)

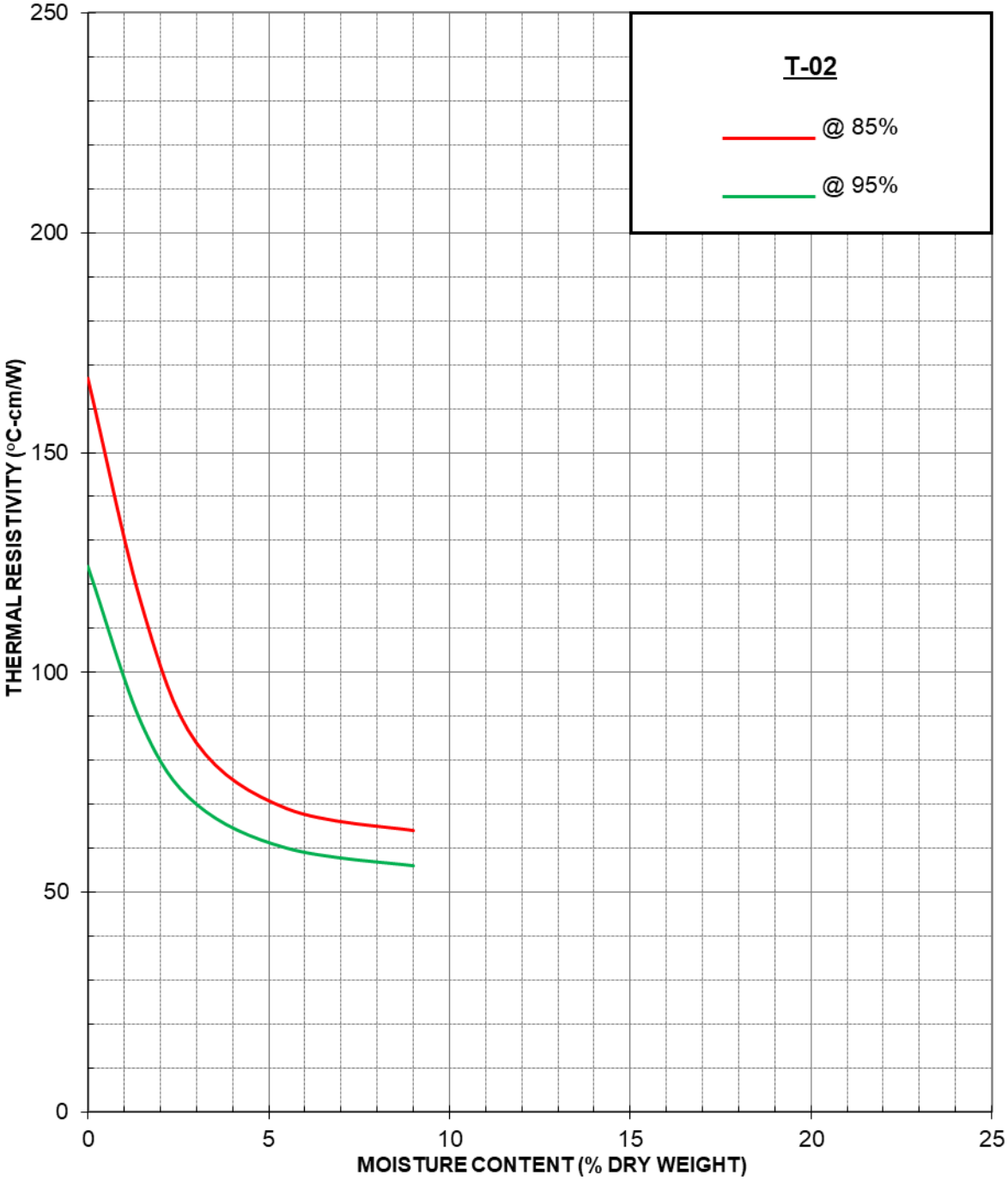
Desert Peak Solar – Palm Springs, CA

Thermal Analysis of Native Soil Samples

November 2021

Figure 1

THERMAL DRYOUT CURVES



Terracon Consultants, Inc. (Project No. 60215222)

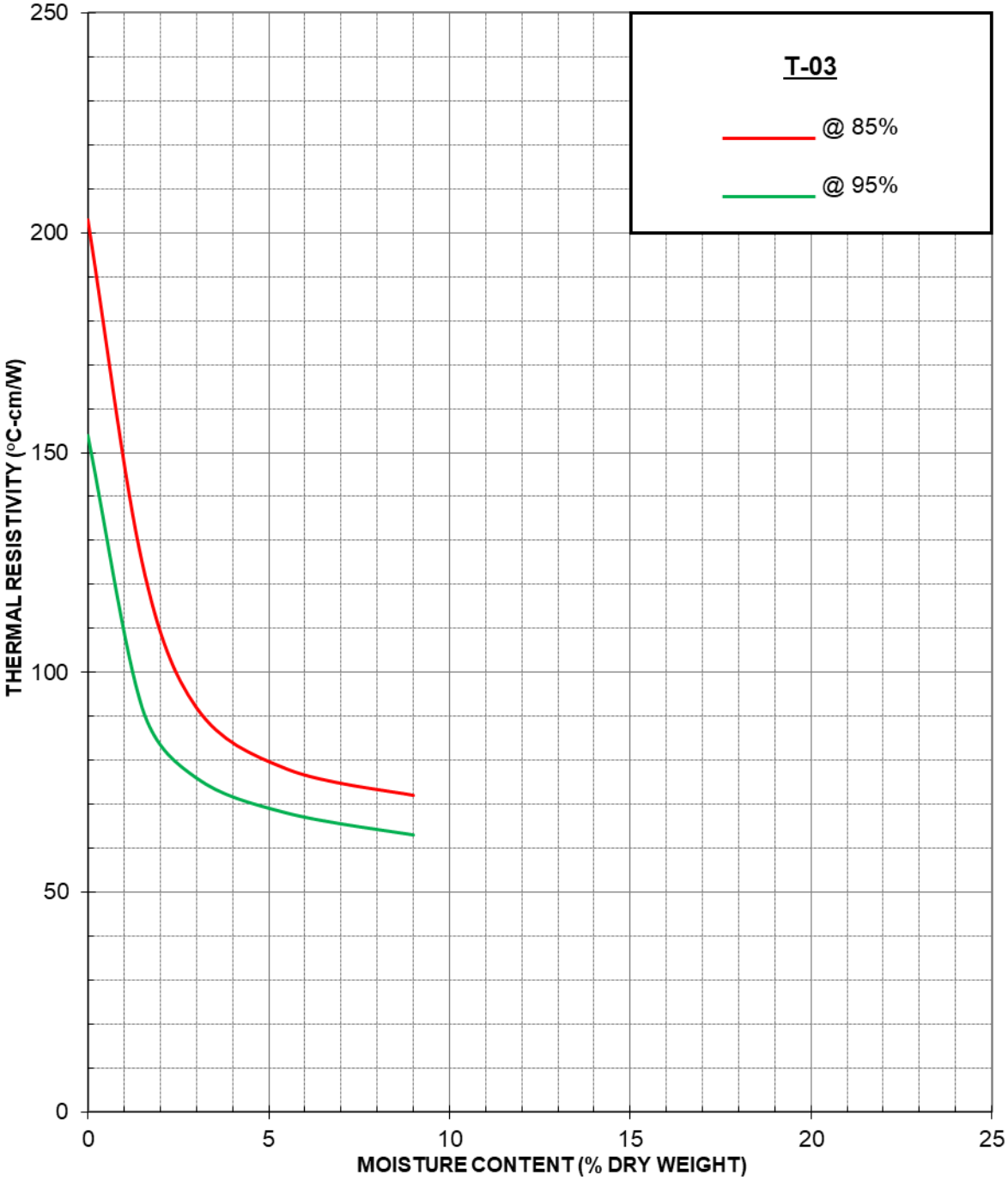
Desert Peak Solar – Palm Springs, CA

Thermal Analysis of Native Soil Samples

November 2021

Figure 2

THERMAL DRYOUT CURVES



Terracon Consultants, Inc. (Project No. 60215222)

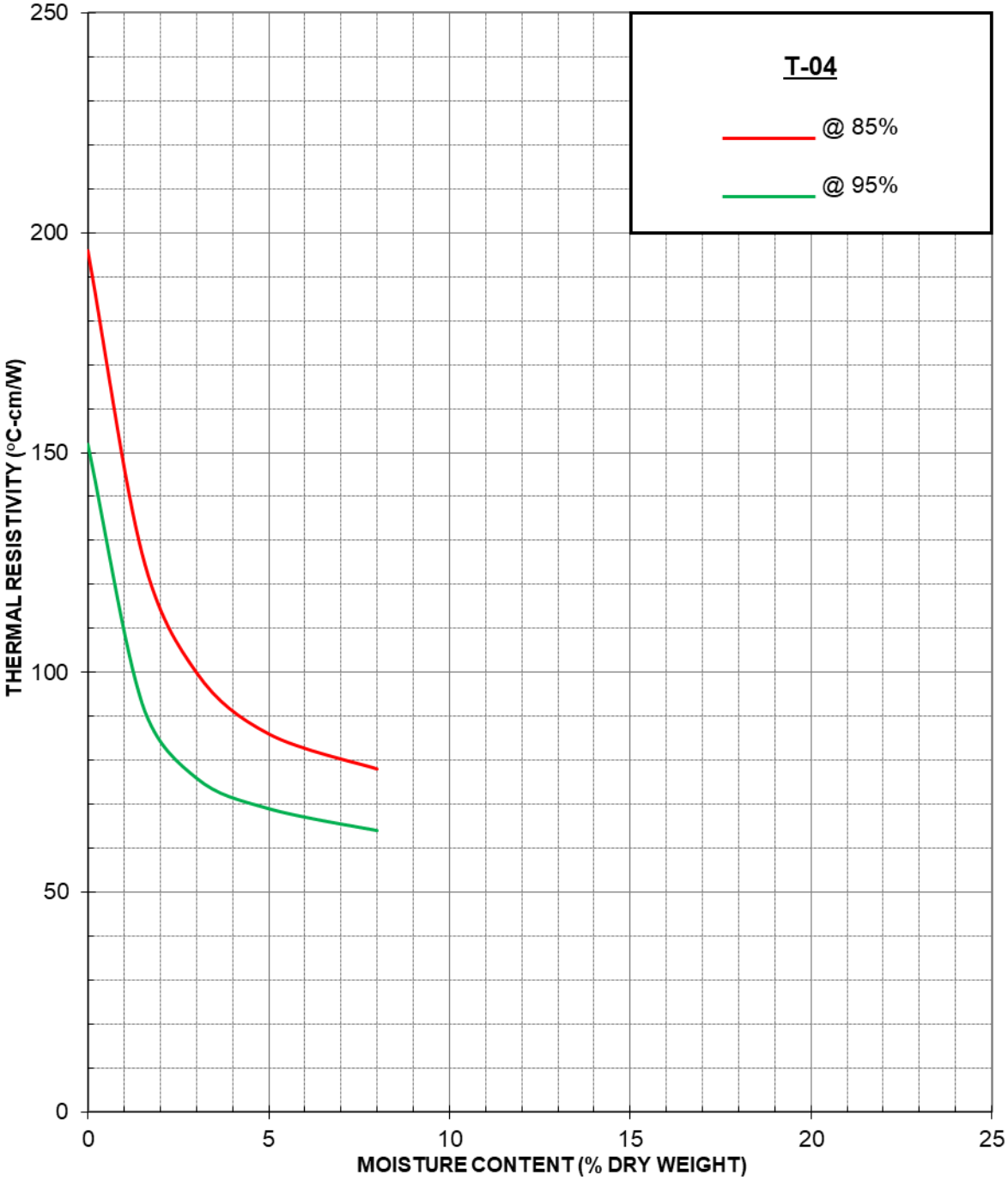
Desert Peak Solar – Palm Springs, CA

Thermal Analysis of Native Soil Samples

November 2021

Figure 3

THERMAL DRYOUT CURVES



Terracon Consultants, Inc. (Project No. 60215222)

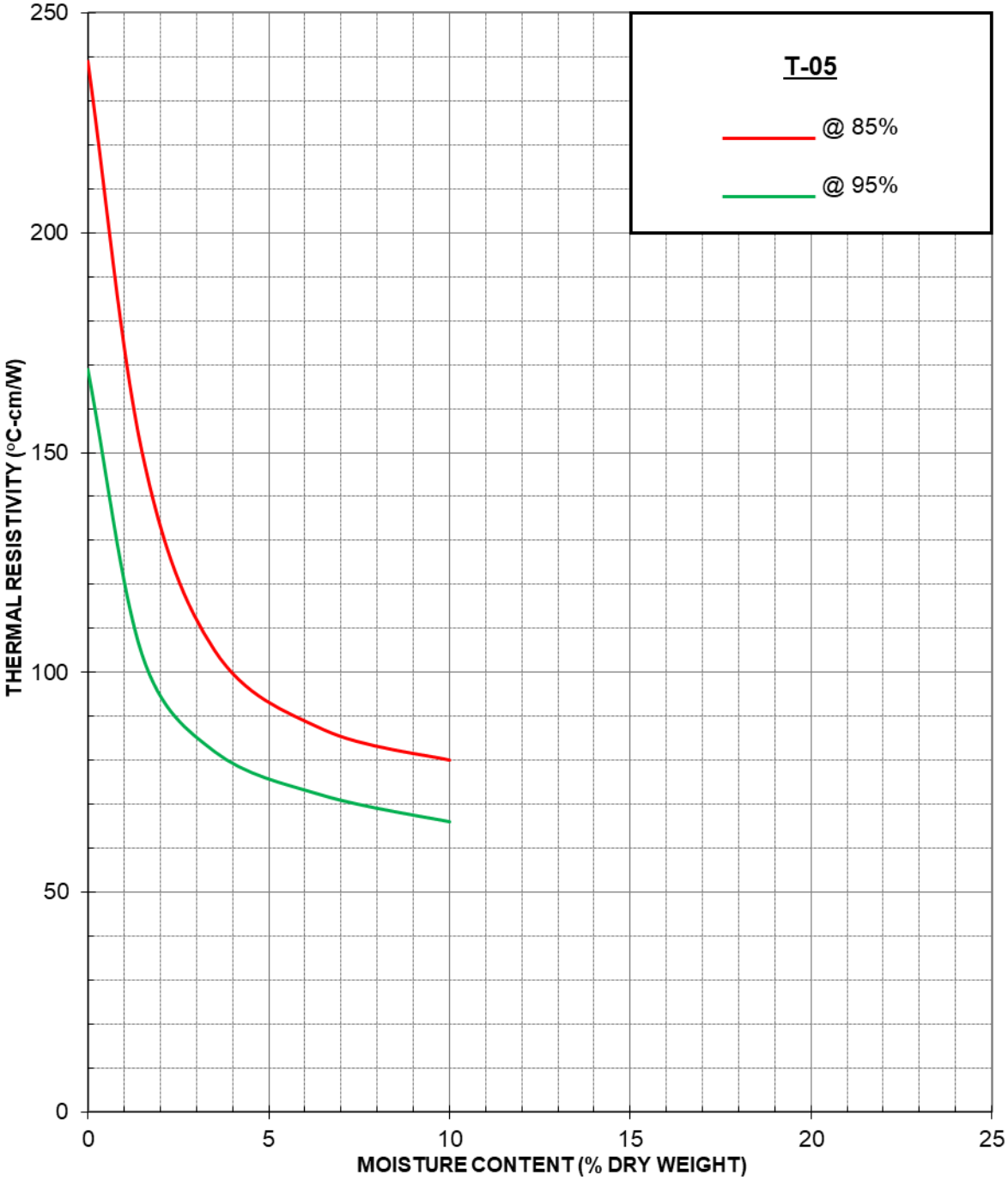
Desert Peak Solar – Palm Springs, CA

Thermal Analysis of Native Soil Samples

November 2021

Figure 4

THERMAL DRYOUT CURVES



Terracon Consultants, Inc. (Project No. 60215222)

Desert Peak Solar – Palm Springs, CA

Thermal Analysis of Native Soil Samples

November 2021

Figure 5

Project Name: Desert Peak Solar
Project Number: 60215222

Pile Embedment and Drive Times

Terracon Consultants, Inc.
February 15, 2022

Pile Location	Pile Size	Pile	Pile Length	Embed Depth	Drive Time	1	2	3	4	5	6	7	8		
PLT-1	W6x9	A	8	5	18	1	2	4	5	6					
	W6x9	B	10	7	44	1	3	5	7	8	9	11			
	W6x9	C	6	5	51	1	4	6	14	26					
	W6x9	D	8	7	33	1	2	4	6	5	7	8			
PLT-2	W6x9	A	9	6	40	2	7	6	8	8	9				
	W6x9	B	11	8	59	3	4	4	7	8	14	12	7		
	W6x9	C	7	6	32	3	4	4	6	7	8				
	W6x9	D	9	8	51	2	3	5	6	7	9	9	10		
PLT-3	W6x9	A	8	5	18	1	5	2	5	5					
	W6x9	B	10	7	66	6	7	5	9	10	12	17			
	W6x9	C	6	5	36	3	7	7	8	11					
	W6x9	D	8	7	41	1	6	6	6	8	5	9			
PLT-4	W6x9	A	9	6	40	2	4	15	6	6	7				
	W6x9	B	11	8	49	3	9	7	7	5	5	6	7		
	W6x9	C	7	6	36	3	5	6	7	7	8				
	W6x9	D	9	8	77	2	2	9	11	15	13	12	13		
PLT-5	W6x9	A	8	5	39	2	4	11	10	12					
	W6x9	B	10	7	44	2	4	7	8	8	7	8			
	W6x9	C	6	5	23	2	4	4	6	7					
	W6x9	D	8	7	33	2	4	5	6	5	4	7			
PLT-6	W6x9	A	9	6	32	2	4	5	6	7	8				
	W6x9	B	11	8	64	2	3	6	8	10	9	10	16		
	W6x9	C	7	6	42	2	3	7	9	10	11				
	W6x9	D	9	8	72	1	2	4	5	10	14	17	19		

SUMMARY OF PILE LOAD TESTING

Project Name: Desert Peak
Project Number: 60215222

Lateral Load							
Pile No.		Pile Type	Embedment Depth, ft	Pile Drive Time, sec	Gauge Deflection near 6" above grade, in	Load Application Height, in above grade	Load, lb
PLT-1	A	W6x9	5	18	0.51	30	5,970
PLT-1	B	W6x9	7	44	0.51	30	6,070
PLT-2	A	W6x9	6	40	0.51	30	4,180
PLT-2	B	W6x9	8	59	0.50	30	5,850
PLT-3	A	W6x9	5	18	0.51	30	4,370
PLT-3	B	W6x9	7	66	0.52	30	4,370
PLT-4	A	W6x9	6	40	0.52	30	4,300
PLT-4	B	W6x9	8	49	0.51	30	6,530
PLT-5	A	W6x9	5	39	0.52	30	5,450
PLT-5	B	W6x9	7	44	0.47*	30	6,950
PLT-6	A	W6x9	6	32	0.50**	30	6,750
PLT-6	B	W6x9	8	64	0.40*	30	7,030

* Maximum load reached prior to deflection criteria

** Load interpolated at 0.5"

SUMMARY OF PILE LOAD TESTING

Project Name: Desert Peak
Project Number: 60215222

Axial Tension								
Pile No.		Pile Type	Embedment Depth, ft	Pile Drive Time, sec	Yield Deflection[1]	Load, lb	Ultimate Deflection[2]	Load, lb
PLT-1	A	W6x9	5	18	0.26	4000	0.77	9120
PLT-1	B	W6x9	7	44	0.25	7110	0.55*	12000
PLT-2	A	W6x9	6	40	0.25**	280	0.75	390
PLT-2	B	W6x9	8	59	0.26	4650	0.75	11370
PLT-3	A	W6x9	5	18	0.26	1230	0.75	2390
PLT-3	B	W6x9	7	66	0.25	9090	0.37*	12000
PLT-4	A	W6x9	6	40	0.26	5960	0.78	10580
PLT-4	B	W6x9	8	49	0.26	4570	0.76	7600
PLT-5	A	W6x9	5	39	0.26	5470	0.77	7450
PLT-5	B	W6x9	7	44	0.22*	12000	--	--
PLT-6	A	W6x9	6	32	0.25	6900	0.66*	12000
PLT-6	B	W6x9	8	64	0.26	8070	0.67*	12000

[1] Yield deflection is defined near 0.25"

[2] Ultimate deflection is defined near 0.75"

* Maximum load reached prior to deflection criteria

** Load interpolated at 0.25"

SUMMARY OF PILE LOAD TESTING

Project Name: Desert Peak
Project Number: 60215222

Axial Compression						
Pile No.		Pile Type	Embedment Depth, ft	Pile Drive Time, sec	Yield Deflection[1]	Load, lb
PLT-1	C	W6x9	5	51	<0.05*	13,040
PLT-1	D	W6x9	7	33	0.22*	13,050
PLT-2	C	W6x9	6	32	0.26	12,045
PLT-2	D	W6x9	8	51	<0.05*	13,015
PLT-3	C	W6x9	5	36	0.26	13,000
PLT-3	D	W6x9	7	41	<0.05*	13,005
PLT-4	C	W6x9	6	36	0.08*	13,050
PLT-4	D	W6x9	8	77	0.05*	13,050
PLT-5	C	W6x9	5	23	0.27	13,000
PLT-5	D	W6x9	7	33	0.14*	13,035
PLT-6	C	W6x9	6	42	0.12*	13,000
PLT-6	D	W6x9	8	72	<0.05*	13,045

[1] Yield deflection is defined near 0.25"

* Maximum load reached prior to deflection criteria

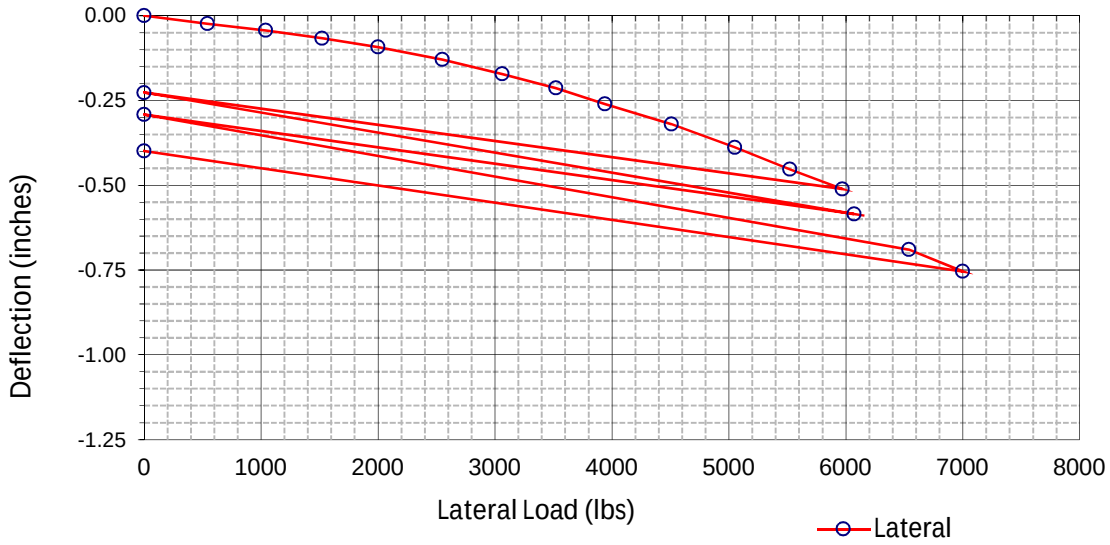
** Load interpolated at 0.25"

Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	5.0	[feet]
Project Number:	60215222	Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/11/21	Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9	Time to Drive:	18	[seconds]
Pile Location:	PLT-1A	Latitude:	33.92896	[° N]
		Longitude:	116.57776	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	11	5050	-0.3880
2	540	-0.0233	12	5520	-0.4528
3	1040	-0.0433	13	5970	-0.5110
4	1520	-0.0665	14	0	-0.2268
5	2000	-0.0928	15	6070	-0.5845
6	2550	-0.1293	16	0	-0.2910
7	3060	-0.1720	17	6540	-0.6893
8	3520	-0.2130	18	7000	-0.7538
9	3940	-0.2605	19	0	-0.3985
10	4510	-0.3198			

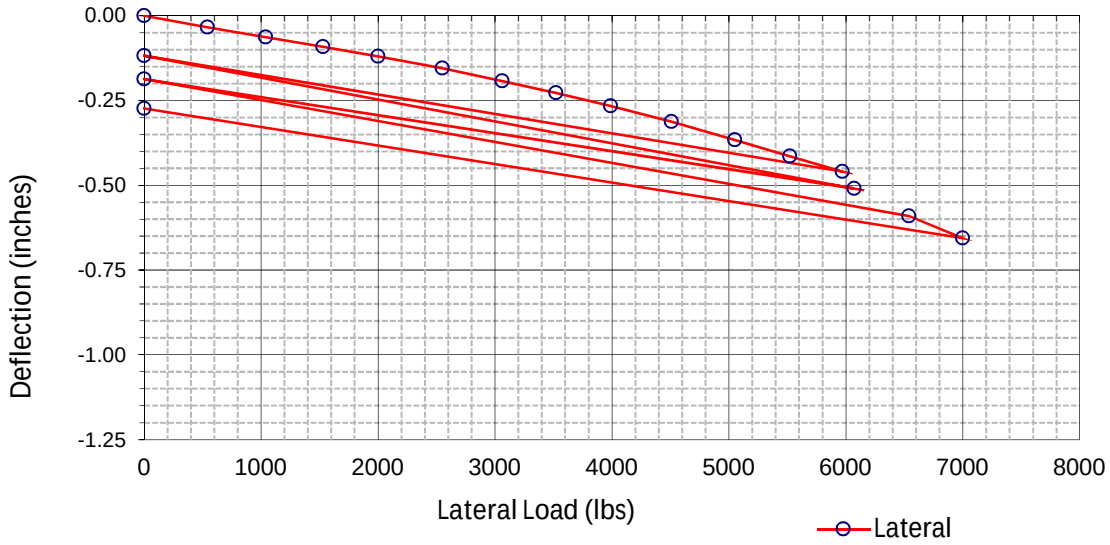


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	7.0	[feet]
Project Number:	60215222		Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/11/21		Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9		Time to Drive:	44	[seconds]
Pile Location:	PLT-1B		Latitude:	33.92896	[° N]
			Longitude:	116.57776	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	11	5050	-0.3660
2	540	-0.0340	12	5520	-0.4143
3	1040	-0.0635	13	5970	-0.4593
4	1530	-0.0918	14	0	-0.1175
5	2000	-0.1198	15	6070	-0.5093
6	2550	-0.1550	16	0	-0.1870
7	3060	-0.1925	17	6540	-0.5908
8	3520	-0.2270	18	7000	-0.6558
9	3990	-0.2660	19	0	-0.2738
10	4510	-0.3120			

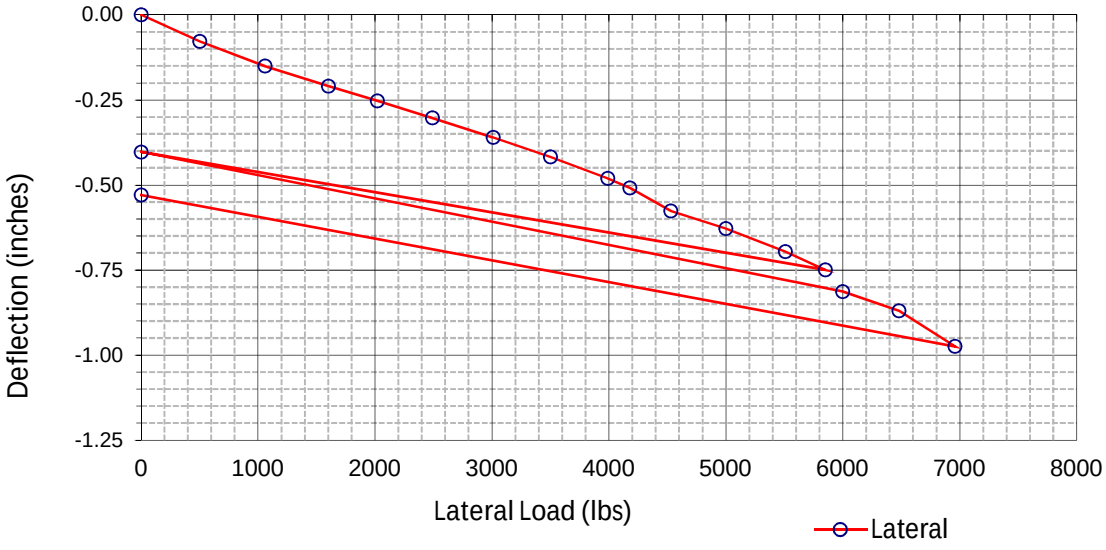


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	6.0 [feet]
Project Number:	60215222	Lat. Gauge Position (above grade):	1 [inches]
Date Tested:	10/12/21	Lat. Load Applied (above grade):	30 [inches]
Pile Size:	W6x9	Time to Drive:	40 [seconds]
Pile Location:	PLT-2A	Latitude:	33.92599 [° N]
		Longitude:	116.57894 [° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	12	4530	-0.5765
2	500	-0.0780	13	5000	-0.6285
3	1060	-0.1505	14	5510	-0.6955
4	1600	-0.2093	15	5850	-0.7498
5	2020	-0.2525	16	0	-0.4030
6	2490	-0.3030	17	6000	-0.8133
7	3010	-0.3603	18	6480	-0.8695
8	3500	-0.4175	19	6960	-0.9743
9	3990	-0.4808	20	0	-0.5295
10	4180	-0.5085			
11	0	-0.2460			

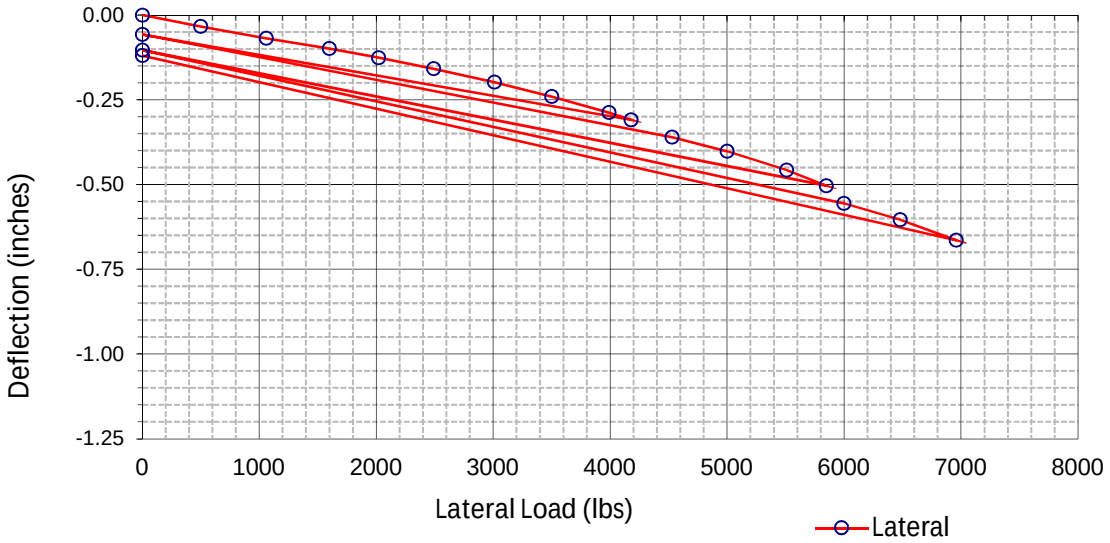


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	8.0	[feet]
Project Number:	60215222	Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/12/21	Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9	Time to Drive:	59	[seconds]
Pile Location:	PLT-2B	Latitude:	33.92599	[° N]
		Longitude:	116.57894	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	12	4530	-0.3603
2	500	-0.0335	13	5000	-0.4018
3	1060	-0.0683	14	5510	-0.4575
4	1600	-0.0990	15	5850	-0.5030
5	2020	-0.1255	16	0	-0.1030
6	2490	-0.1583	17	6000	-0.5555
7	3010	-0.1975	18	6480	-0.6030
8	3500	-0.2403	19	6960	-0.6643
9	3990	-0.2870	20	0	-0.1198
10	4180	-0.3093			
11	0	-0.0570			

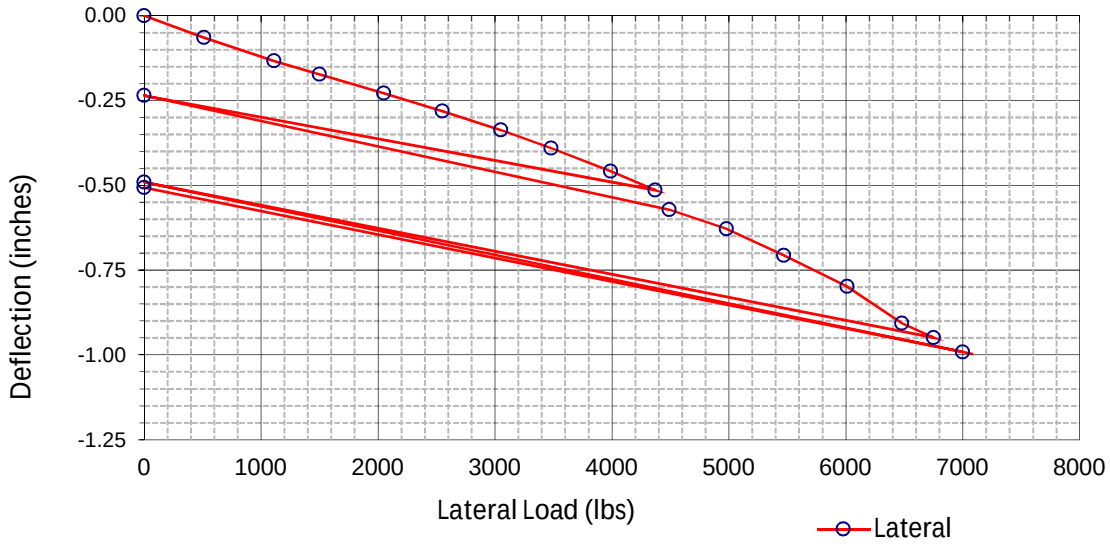


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	5.0	[feet]
Project Number:	60215222	Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/11/21	Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9	Time to Drive:	18	[seconds]
Pile Location:	PLT-3A	Latitude:	33.92579	[° N]
		Longitude:	116.57494	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	12	4490	-0.5715
2	510	-0.0638	13	4980	-0.6280
3	1110	-0.1328	14	5470	-0.7065
4	1500	-0.1725	15	6010	-0.7980
5	2050	-0.2285	16	6480	-0.9065
6	2550	-0.2810	17	6750	-0.9490
7	3050	-0.3370	18	0	-0.4900
8	3480	-0.3900	19	7000	-0.9908
9	3990	-0.4580	20	0	-0.5065
10	4370	-0.5143			
11	0	-0.2350			

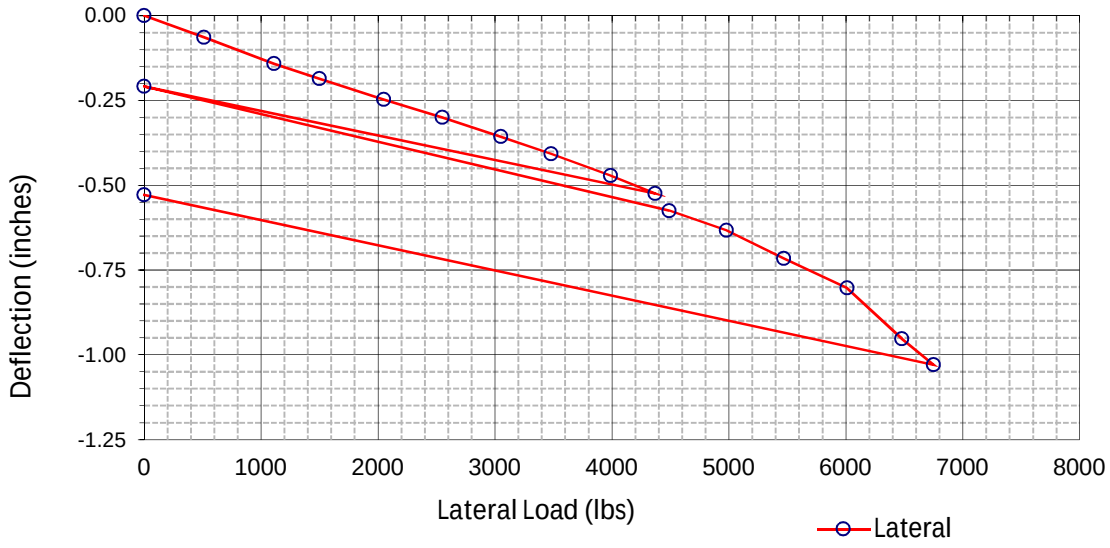


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	7.0	[feet]
Project Number:	60215222		Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/11/21		Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9		Time to Drive:	66	[seconds]
Pile Location:	PLT-3B		Latitude:	33.92579	[° N]
			Longitude:	116.57494	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	10	4370	-0.5245
2	510	-0.0638	11	0	-0.2085
3	1110	-0.1415	12	4490	-0.5748
4	1500	-0.1860	13	4980	-0.6330
5	2050	-0.2470	14	5470	-0.7155
6	2550	-0.3000	15	6010	-0.8023
7	3050	-0.3563	16	6480	-0.9525
8	3480	-0.4070	17	6750	-1.0293
9	3990	-0.4718	18	0	-0.5285

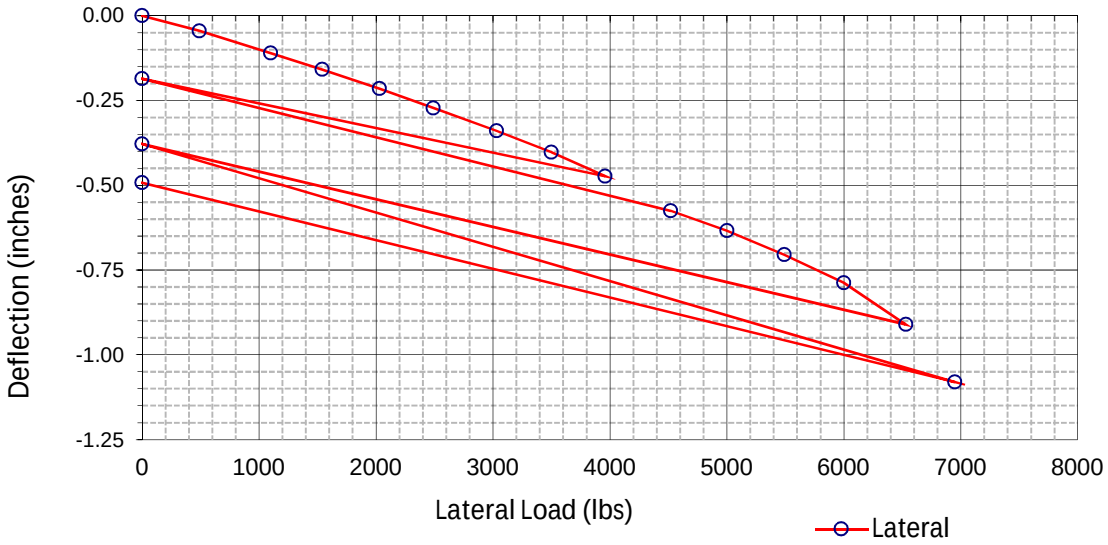


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	6.0	[feet]
Project Number:	60215222		Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/12/21		Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9		Time to Drive:	40	[seconds]
Pile Location:	PLT-4A		Latitude:	33.92567	[° N]
			Longitude:	116.57168	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	11	0	-0.1855
2	490	-0.0448	12	4520	-0.5755
3	1100	-0.1100	13	5000	-0.6335
4	1540	-0.1583	14	5490	-0.7043
5	2030	-0.2150	15	6000	-0.7875
6	2490	-0.2720	16	6530	-0.9100
7	3030	-0.3395	17	0	-0.3778
8	3500	-0.4030	18	6950	-1.0800
9	3960	-0.4735	19	0	-0.4923
10	4300	-0.5225			

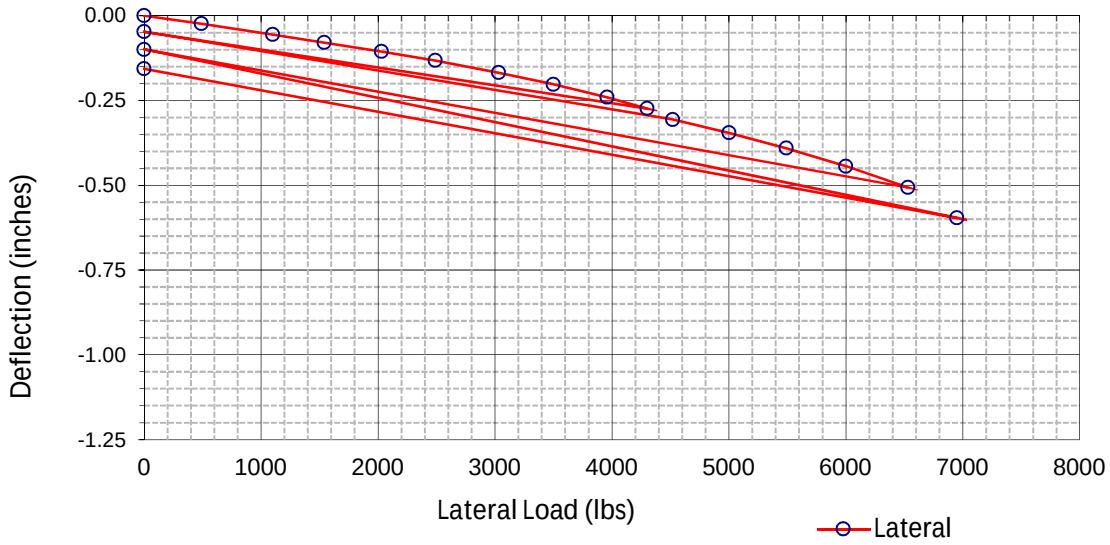


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	8.0	[feet]
Project Number:	60215222		Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/12/21		Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9		Time to Drive:	49	[seconds]
Pile Location:	PLT-4B		Latitude:	33.92567	[° N]
			Longitude:	116.57168	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	11	0	-0.0475
2	490	-0.0233	12	4520	-0.3060
3	1100	-0.0560	13	5000	-0.3448
4	1540	-0.0790	14	5490	-0.3903
5	2030	-0.1053	15	6000	-0.4438
6	2490	-0.1320	16	6530	-0.5060
7	3030	-0.1678	17	0	-0.0995
8	3500	-0.2023	18	6950	-0.5963
9	3960	-0.2405	19	0	-0.1563
10	4300	-0.2735			

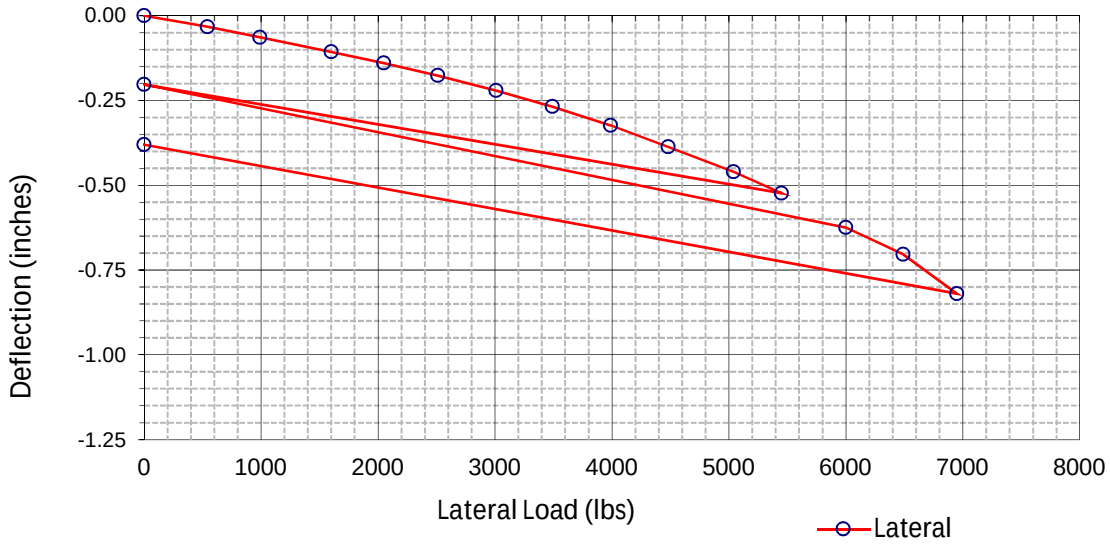


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	5.0	[feet]
Project Number:	60215222		Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/12/21		Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9		Time to Drive:	39	[seconds]
Pile Location:	PLT-5A		Latitude:	33.92869	[° N]
			Longitude:	116.57146	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	10	4480	-0.3865
2	540	-0.0325	11	5040	-0.4600
3	990	-0.0638	12	5450	-0.5233
4	1600	-0.1068	13	0	-0.2028
5	2050	-0.1393	14	6000	-0.6245
6	2510	-0.1760	15	6490	-0.7035
7	3010	-0.2210	16	6950	-0.8193
8	3490	-0.2680	17	0	-0.3798
9	3990	-0.3233			

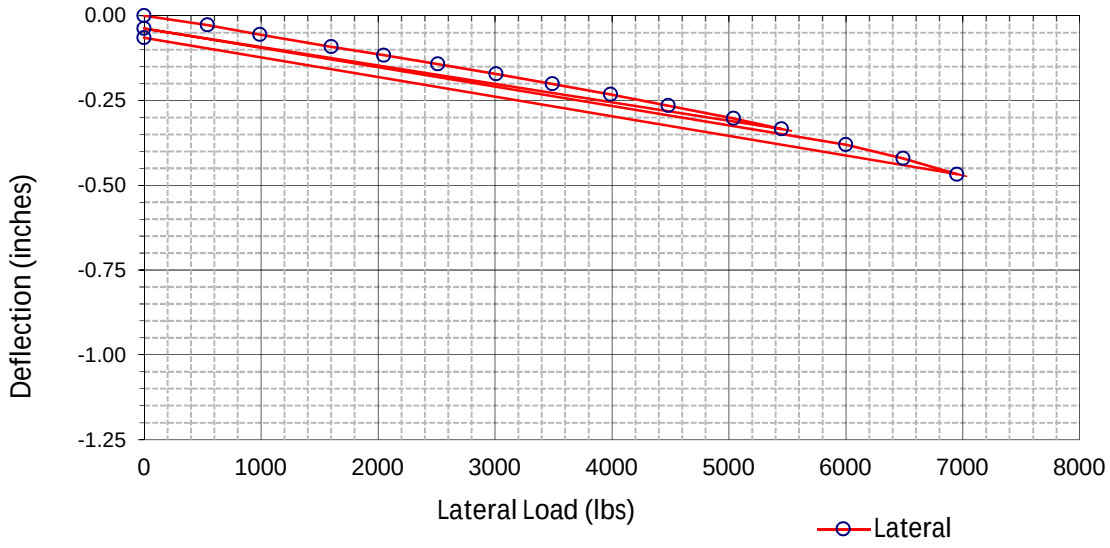


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	7.0	[feet]
Project Number:	60215222		Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/12/21		Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9		Time to Drive:	44	[seconds]
Pile Location:	PLT-5B		Latitude:	33.92869	[° N]
			Longitude:	116.57146	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	10	4480	-0.2648
2	540	-0.0273	11	5040	-0.3028
3	990	-0.0558	12	5450	-0.3338
4	1600	-0.0918	13	0	-0.0378
5	2050	-0.1165	14	6000	-0.3803
6	2510	-0.1423	15	6490	-0.4203
7	3010	-0.1715	16	6950	-0.4673
8	3490	-0.2005	17	0	-0.0653
9	3990	-0.2318			

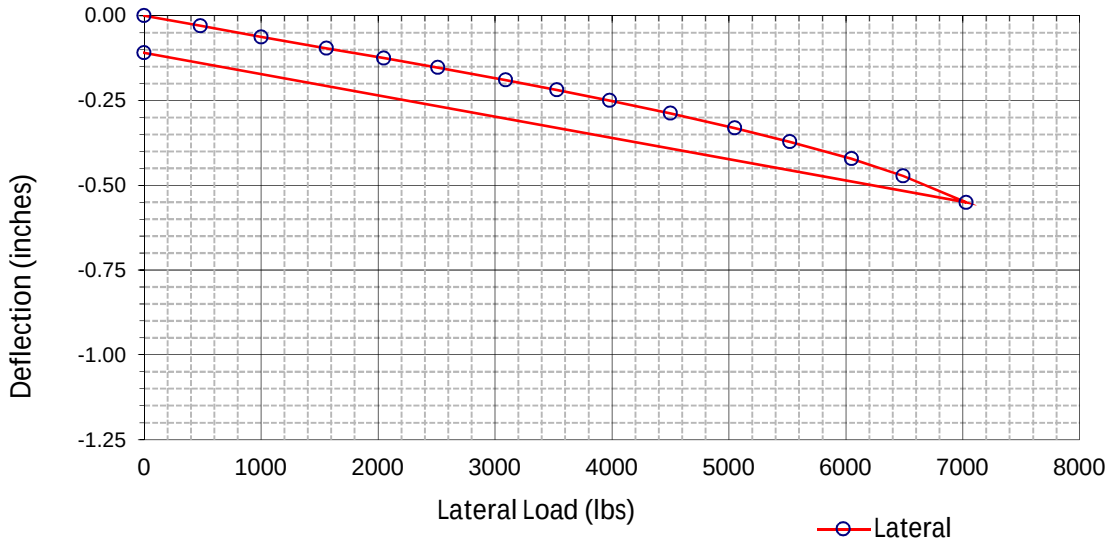


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	6.0	[feet]
Project Number:	60215222		Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/12/21		Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9		Time to Drive:	32	[seconds]
Pile Location:	PLT-6B		Latitude:	33.93135	[° N]
			Longitude:	116.57357	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	10	4500	-0.2880
2	480	-0.0298	11	5050	-0.3313
3	1000	-0.0628	12	5520	-0.3718
4	1560	-0.0963	13	6050	-0.4215
5	2050	-0.1250	14	6490	-0.4725
6	2510	-0.1530	15	7030	-0.5505
7	3090	-0.1893	16	0	-0.1093
8	3530	-0.2185			
9	3980	-0.2503			

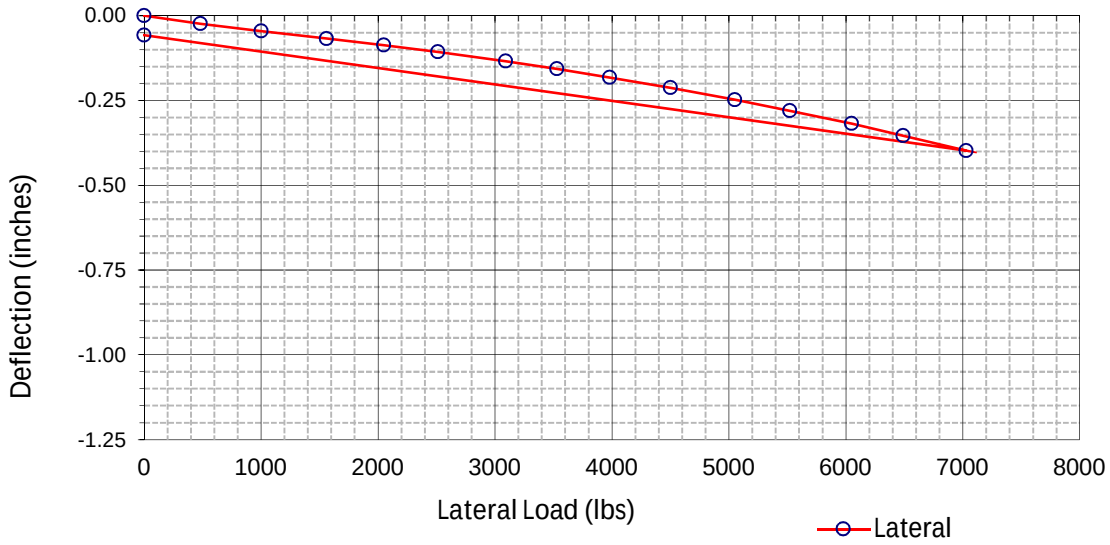


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	8.0	[feet]
Project Number:	60215222		Lat. Gauge Position (above grade):	1	[inches]
Date Tested:	10/12/21		Lat. Load Applied (above grade):	30	[inches]
Pile Size:	W6x9		Time to Drive:	64	[seconds]
Pile Location:	PLT-6A		Latitude:	33.93135	[° N]
			Longitude:	116.57357	[° W]

Lateral Test Results

Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Lateral Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	10	4500	-0.2125
2	480	-0.0235	11	5050	-0.2475
3	1000	-0.0455	12	5520	-0.2803
4	1560	-0.0675	13	6050	-0.3180
5	2050	-0.0868	14	6490	-0.3533
6	2510	-0.1065	15	7030	-0.3978
7	3090	-0.1338	16	0	-0.0576
8	3530	-0.1568			
9	3980	-0.1820			

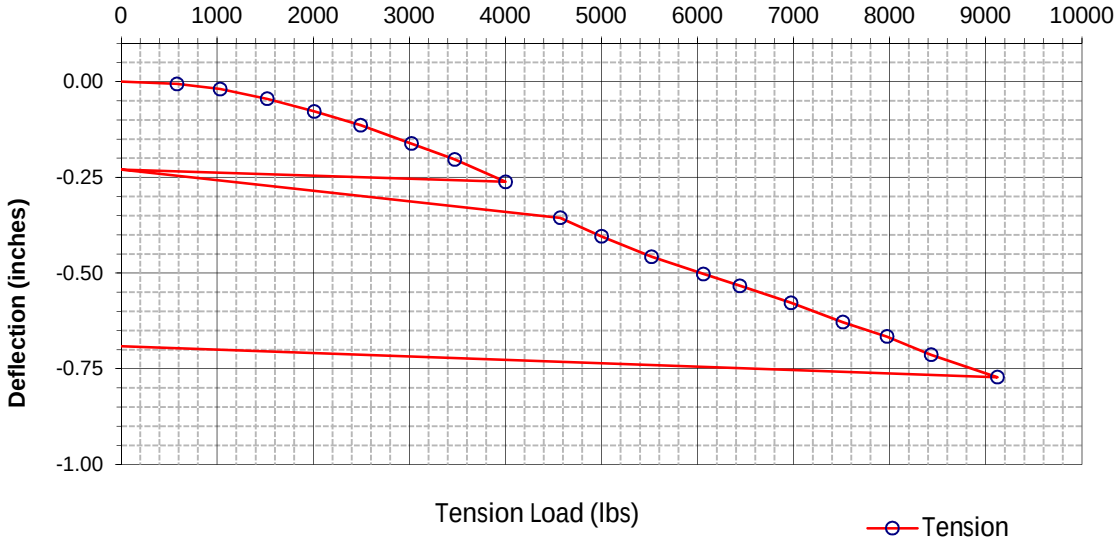


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	5.0 [feet]
Project Number:	60215222	Time to Drive :	18 [seconds]
Date Tested:	10/11/21	Latitude:	33.92896 [° N]
Pile Size:	W6x9	Longitude:	116.57776 [° W]
Pile Location :	PLT-1A	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	13	5520	-0.4573
2	580	-0.0058	14	6060	-0.5025
3	1030	-0.0195	15	6440	-0.5333
4	1520	-0.0448	16	6970	-0.5775
5	2010	-0.0778	17	7510	-0.6283
6	2490	-0.1135	18	7970	-0.6658
7	3020	-0.1618	19	8430	-0.7135
8	3470	-0.2033	20	9120	-0.7720
9	4000	-0.2618	21	0	-0.6908
10	0	-0.2298			
11	4570	-0.3558			
12	5000	-0.4043			

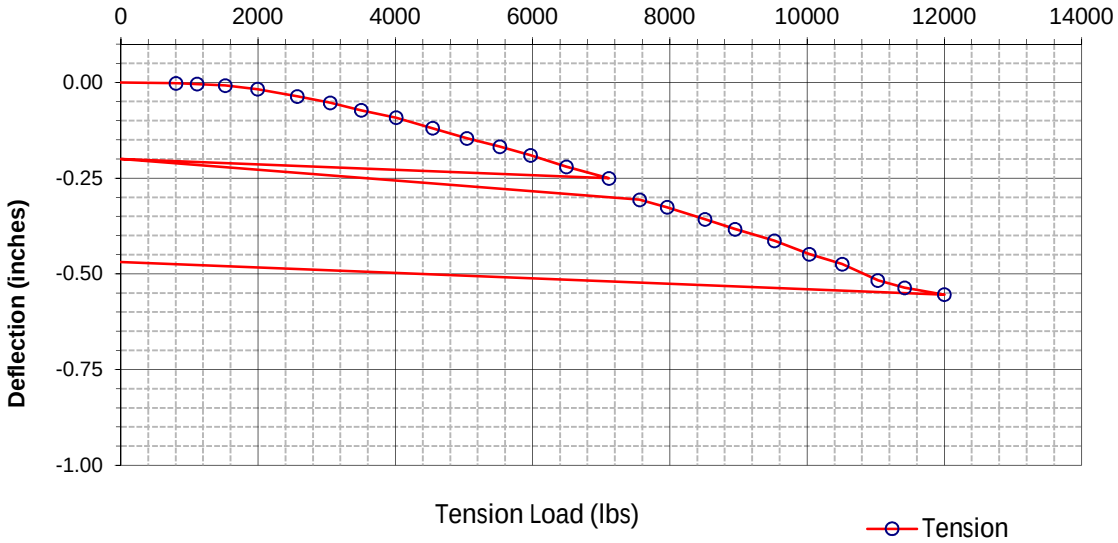


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	7.0 [feet]
Project Number:	60215222	Time to Drive :	44 [seconds]
Date Tested:	10/11/21	Latitude:	33.92896 [° N]
Pile Size:	W6x9	Longitude:	116.57776 [° W]
Pile Location :	PLT-1B	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7110	-0.2505
2	800	-0.0023	16	0	-0.2005
3	1110	-0.0043	17	7560	-0.3063
4	1520	-0.0083	18	7960	-0.3260
5	1990	-0.0175	19	8510	-0.3575
6	2570	-0.0363	20	8950	-0.3830
7	3050	-0.0530	21	9520	-0.4135
8	3500	-0.0728	22	10030	-0.4485
9	4010	-0.0920	23	10510	-0.4743
10	4540	-0.1195	24	11030	-0.5173
11	5040	-0.1458	25	11420	-0.5365
12	5520	-0.1678	26	12000	-0.5540
13	5970	-0.1903	27	0	-0.4693
14	6490	-0.2203			

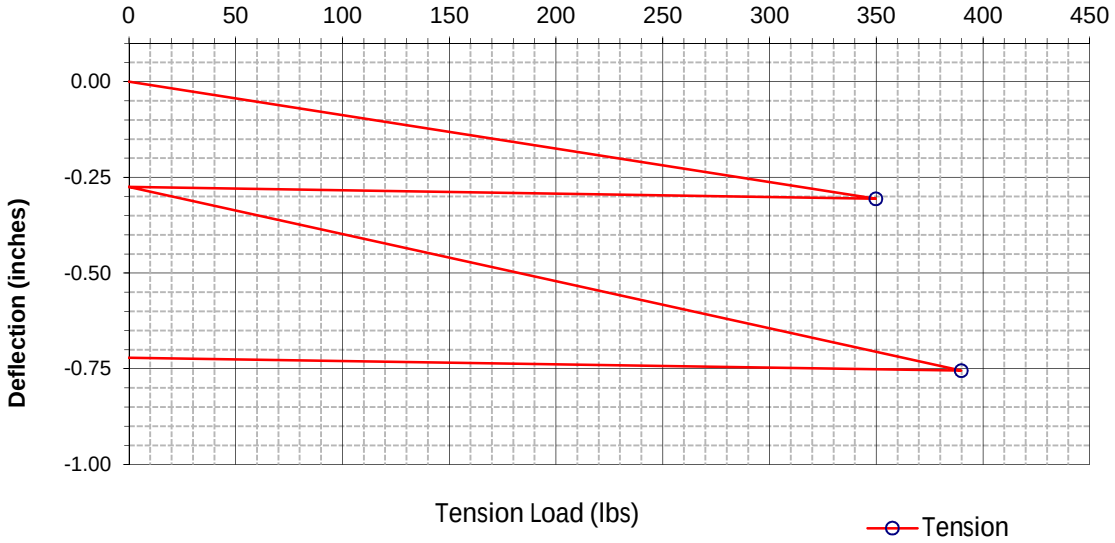


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	6.0 [feet]
Project Number:	60215222	Time to Drive :	40 [seconds]
Date Tested:	10/12/21	Latitude:	33.92599 [° N]
Pile Size:	W6x9	Longitude:	116.57894 [° W]
Pile Location :	PLT-2A	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000			
2	350	-0.3058			
3	0	-0.2750			
4	390	-0.7548			
5	0	-0.7213			

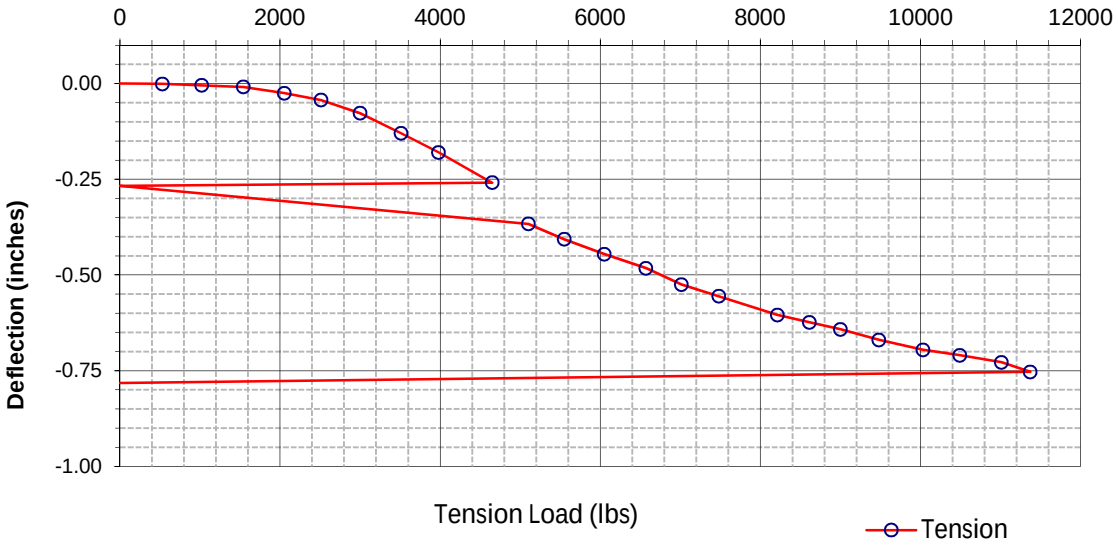


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	8.0 [feet]
Project Number:	60215222	Time to Drive :	59 [seconds]
Date Tested:	10/12/21	Latitude:	33.92599 [° N]
Pile Size:	W6x9	Longitude:	116.57894 [° W]
Pile Location :	PLT-2B	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	6570	-0.4823
2	530	-0.0010	16	7010	-0.5250
3	1020	-0.0045	17	7480	-0.5553
4	1540	-0.0088	18	8210	-0.6043
5	2050	-0.0248	19	8610	-0.6233
6	2510	-0.0430	20	9000	-0.6418
7	3000	-0.0773	21	9480	-0.6693
8	3510	-0.1293	22	10030	-0.6953
9	3980	-0.1798	23	10490	-0.7095
10	4650	-0.2585	24	11010	-0.7278
11	0	-0.2673	25	11370	-0.7530
12	5100	-0.3665	26	0	-0.7818
13	5550	-0.4065			
14	6050	-0.4453			

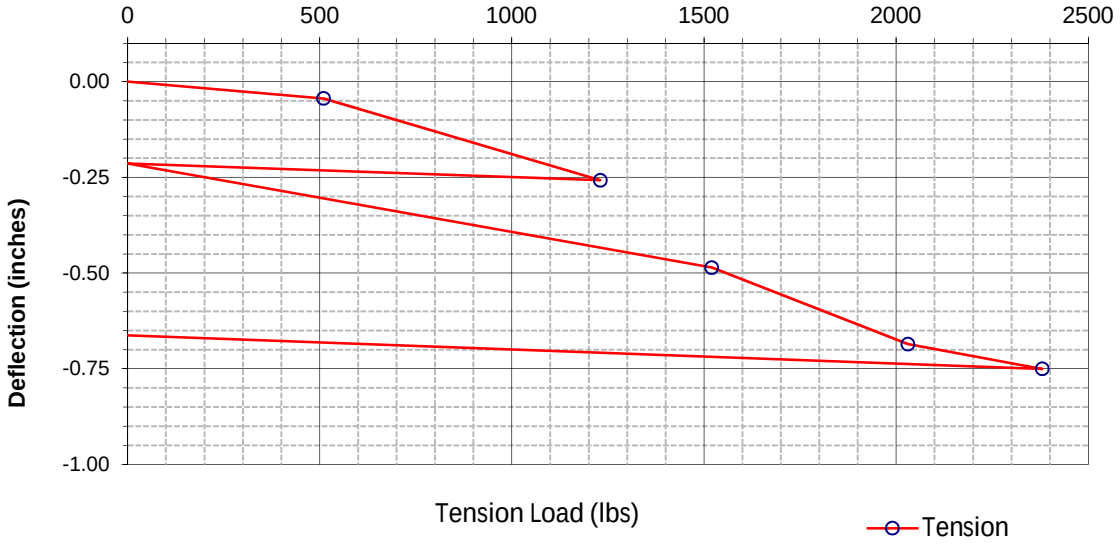


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	5.0	[feet]
Project Number:	60215222		Time to Drive :	18	[seconds]
Date Tested:	10/11/21		Latitude:	33.92579	[° N]
Pile Size:	W6x9		Longitude:	116.57494	[° W]
Pile Location :	PLT-3A		Vert. Gauge Height (above grade):	6	[inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000			
2	510	-0.0438			
3	1230	-0.2573			
4	0	-0.2143			
5	1520	-0.4858			
6	2030	-0.6855			
7	2380	-0.7500			
8	0	-0.6628			



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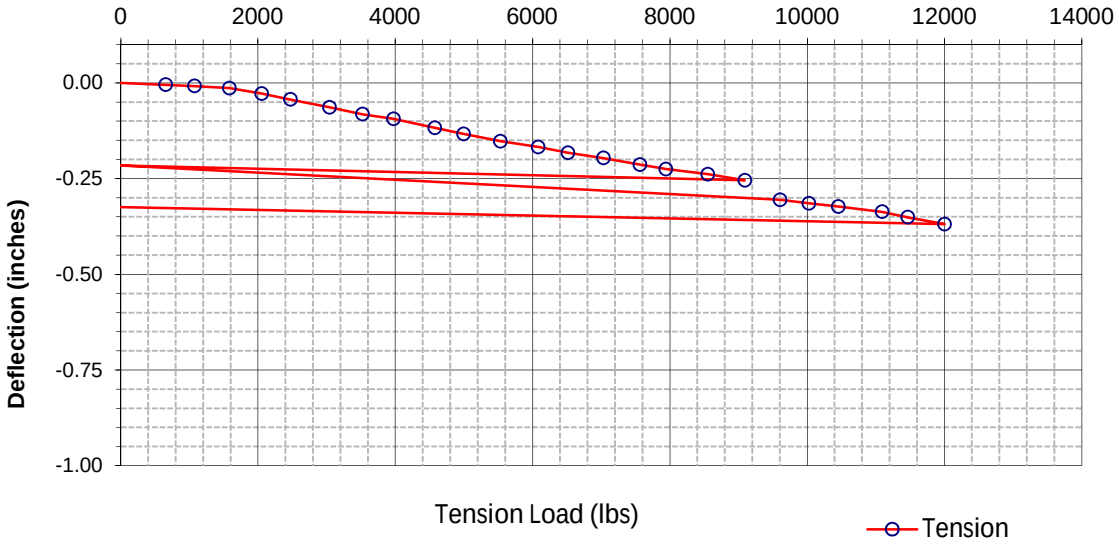
Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	7.0 [feet]
Project Number:	60215222	Time to Drive :	66 [seconds]
Date Tested:	10/11/21	Latitude:	33.92579 [° N]
Pile Size:	W6x9	Longitude:	116.57494 [° W]
Pile Location :	PLT-3B	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7030	-0.1965
2	650	-0.0050	16	7560	-0.2138
3	1070	-0.0083	17	7940	-0.2255
4	1580	-0.0135	18	8550	-0.2385
5	2050	-0.0278	19	9090	-0.2543
6	2470	-0.0435	20	0	-0.2158
7	3040	-0.0640	21	9600	-0.3055
8	3520	-0.0820	22	10020	-0.3145
9	3970	-0.0940	23	10450	-0.3233
10	4570	-0.1173	24	11090	-0.3368
11	4990	-0.1330	25	11460	-0.3510
12	5530	-0.1528	26	12000	-0.3690
13	6080	-0.1675	27	0	-0.3243
14	6510	-0.1825			

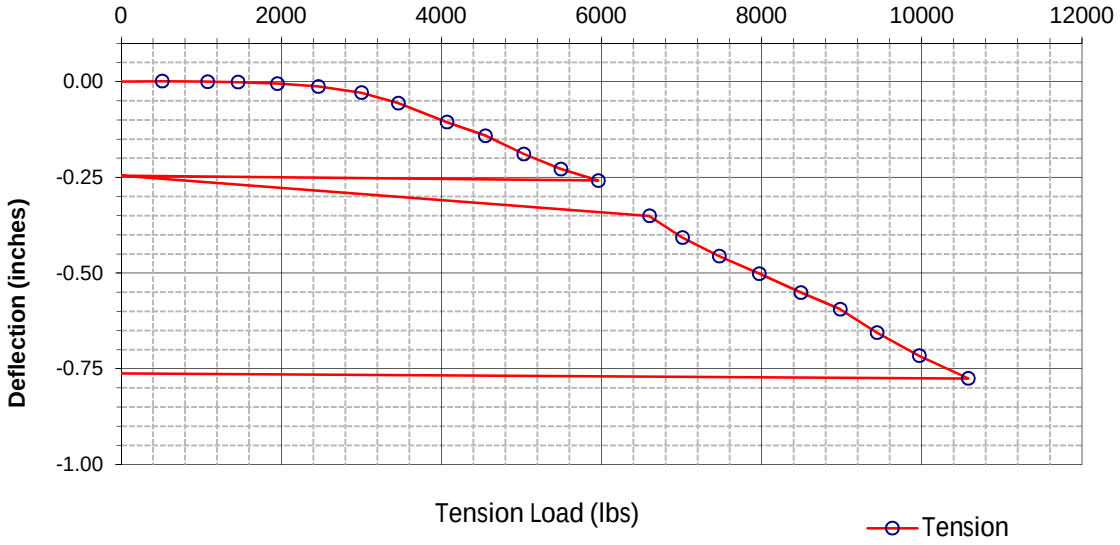


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	6.0 [feet]
Project Number:	60215222	Time to Drive :	40 [seconds]
Date Tested:	10/12/21	Latitude:	33.92567 [° N]
Pile Size:	W6x9	Longitude:	116.57168 [° W]
Pile Location :	PLT-4A	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	13	5960	-0.2585
2	510	0.0013	14	0	-0.2455
3	1080	0.0003	15	6600	-0.3508
4	1460	-0.0013	16	7010	-0.4073
5	1950	-0.0053	17	7470	-0.4555
6	2460	-0.0123	18	7970	-0.5013
7	3000	-0.0288	19	8490	-0.5510
8	3460	-0.0563	20	8980	-0.5945
9	4070	-0.1058	21	9440	-0.6553
10	4550	-0.1415	22	9970	-0.7158
11	5030	-0.1890	23	10580	-0.7753
12	5490	-0.2280	24	0	-0.7623

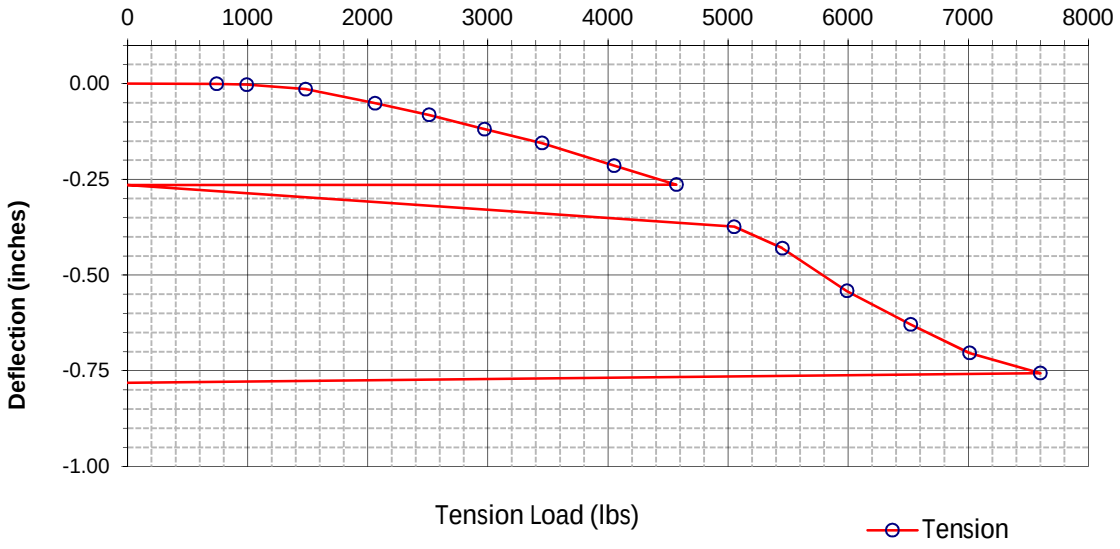


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	8.0 [feet]
Project Number:	60215222	Time to Drive :	49 [seconds]
Date Tested:	10/12/21	Latitude:	33.92567 [° N]
Pile Size:	W6x9	Longitude:	116.57168 [° W]
Pile Location :	PLT-4B	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	13	5450	-0.4298
2	740	-0.0005	14	5990	-0.5413
3	990	-0.0025	15	6520	-0.6285
4	1480	-0.0140	16	7010	-0.7033
5	2060	-0.0510	17	7600	-0.7560
6	2510	-0.0815	18	0	-0.7810
7	2970	-0.1188			
8	3450	-0.1550			
9	4050	-0.2140			
10	4570	-0.2638			
11	0	-0.2650			
12	5050	-0.3735			

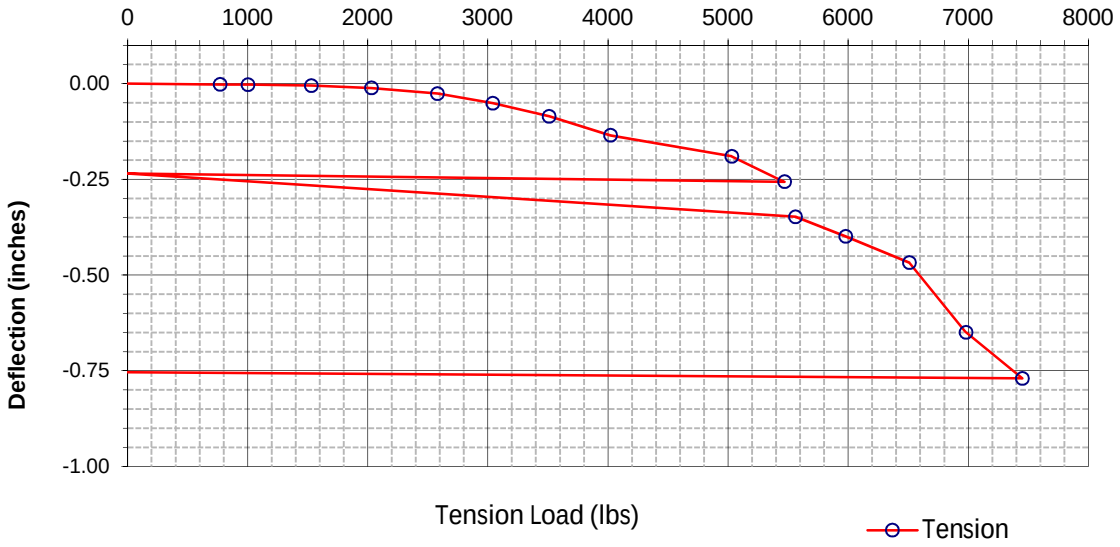


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	5.0 [feet]
Project Number:	60215222	Time to Drive :	39 [seconds]
Date Tested:	10/12/21	Latitude:	33.92869 [° N]
Pile Size:	W6x9	Longitude:	116.57146 [° W]
Pile Location :	PLT-5A	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	13	5560	-0.3478
2	770	-0.0020	14	5980	-0.3990
3	1000	-0.0023	15	6510	-0.4678
4	1530	-0.0053	16	6980	-0.6495
5	2030	-0.0113	17	7450	-0.7698
6	2580	-0.0258	18	0	-0.7540
7	3040	-0.0508			
8	3510	-0.0855			
9	4020	-0.1350			
10	5030	-0.1898			
11	5470	-0.2563			
12	0	-0.2348			

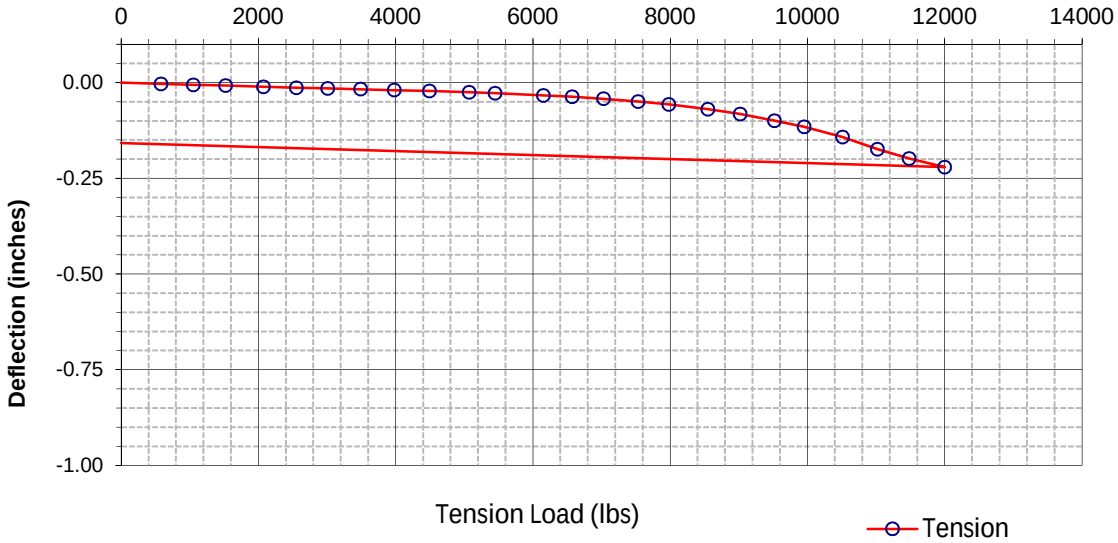


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	7.0 [feet]
Project Number:	60215222	Time to Drive :	44 [seconds]
Date Tested:	10/12/21	Latitude:	33.92869 [° N]
Pile Size:	W6x9	Longitude:	116.57146 [° W]
Pile Location :	PLT-5B	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7030	-0.0423
2	580	-0.0033	16	7530	-0.0498
3	1050	-0.0063	17	7980	-0.0573
4	1520	-0.0075	18	8550	-0.0693
5	2070	-0.0113	19	9020	-0.0823
6	2550	-0.0133	20	9520	-0.0998
7	3010	-0.0153	21	9950	-0.1153
8	3490	-0.0173	22	10510	-0.1423
9	3980	-0.0198	23	11020	-0.1738
10	4490	-0.0220	24	11480	-0.1983
11	5070	-0.0253	25	12000	-0.2208
12	5450	-0.0280	26	0	-0.1583
13	6150	-0.0335			
14	6570	-0.0368			

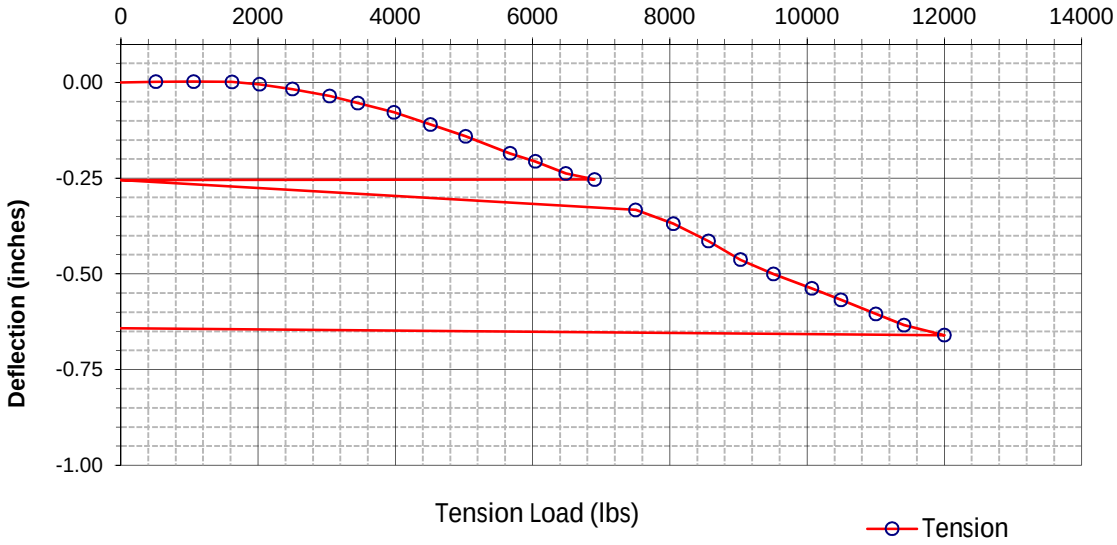


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	6.0 [feet]
Project Number:	60215222	Time to Drive :	32 [seconds]
Date Tested:	10/12/21	Latitude:	33.93135 [° N]
Pile Size:	W6x9	Longitude:	116.57357 [° W]
Pile Location :	PLT-6A	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	6900	-0.2533
2	510	0.0020	16	0	-0.2553
3	1060	0.0028	17	7500	-0.3328
4	1620	0.0015	18	8050	-0.3688
5	2020	-0.0045	19	8560	-0.4140
6	2500	-0.0173	20	9030	-0.4628
7	3040	-0.0353	21	9510	-0.5005
8	3450	-0.0533	22	10070	-0.5380
9	3980	-0.0780	23	10490	-0.5675
10	4510	-0.1098	24	11000	-0.6048
11	5020	-0.1403	25	11410	-0.6340
12	5670	-0.1853	26	12000	-0.6603
13	6040	-0.2063	27	0	-0.6420
14	6480	-0.2373			



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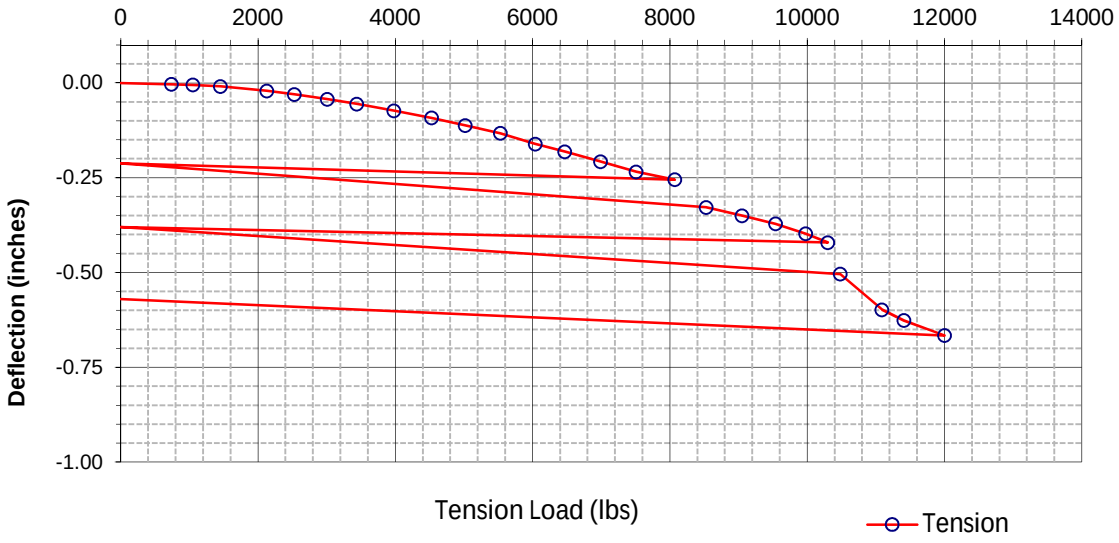
Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	8.0 [feet]
Project Number:	60215222	Time to Drive :	64 [seconds]
Date Tested:	10/12/21	Latitude:	33.93135 [° N]
Pile Size:	W6x9	Longitude:	116.57357 [° W]
Pile Location :	PLT-6B	Vert. Gauge Height (above grade):	6 [inches]

Tension Test Results

Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Tension Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	17	8070	-0.2550
2	740	-0.0035	18	0	-0.2125
3	1050	-0.0053	19	8530	-0.3283
4	1450	-0.0090	20	9050	-0.3498
5	2130	-0.0208	21	9540	-0.3715
6	2530	-0.0300	22	9980	-0.3978
7	3010	-0.0425	23	10300	-0.4210
8	3440	-0.0553	24	0	-0.3805
9	3980	-0.0733	25	10480	-0.5040
10	4530	-0.0923	26	11090	-0.5983
11	5020	-0.1123	27	11410	-0.6263
12	5530	-0.1328	28	12000	-0.6659
13	6040	-0.1608	29	0	-0.5698
14	6470	-0.1810			
15	6990	-0.2073			
16	7510	-0.2343			

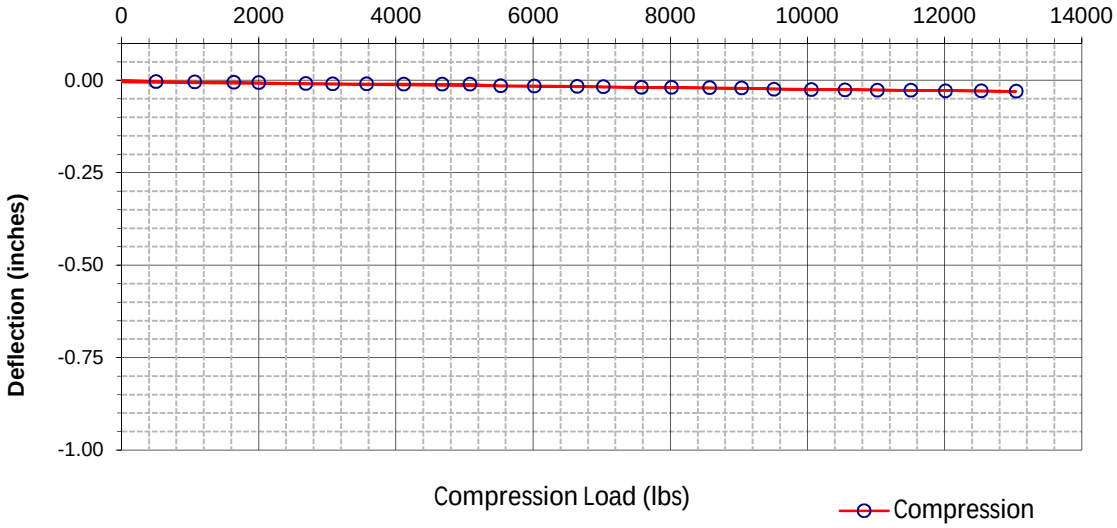


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	5.0 [feet]
Project Number:	60215222	Time to Drive :	51 [seconds]
Date Tested:	10/13/21	Latitude:	33.92896 [° N]
Pile Size:	W6x9	Longitude:	116.57776 [° W]
Pile Location :	PLT-1C	Vert. Gauge Height (above grade):	6 [inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7025	-0.0175
2	500	-0.0033	16	7580	-0.0188
3	1065	-0.0045	17	8015	-0.0193
4	1635	-0.0053	18	8570	-0.0203
5	2000	-0.0063	19	9040	-0.0210
6	2685	-0.0088	20	9510	-0.0243
7	3075	-0.0095	21	10055	-0.0253
8	3570	-0.0098	22	10545	-0.0258
9	4110	-0.0103	23	11015	-0.0265
10	4670	-0.0105	24	11505	-0.0273
11	5075	-0.0108	25	12010	-0.0283
12	5525	-0.0150	26	12535	-0.0290
13	6015	-0.0155	27	13040	-0.0298
14	6640	-0.0165	28	0	-0.0050

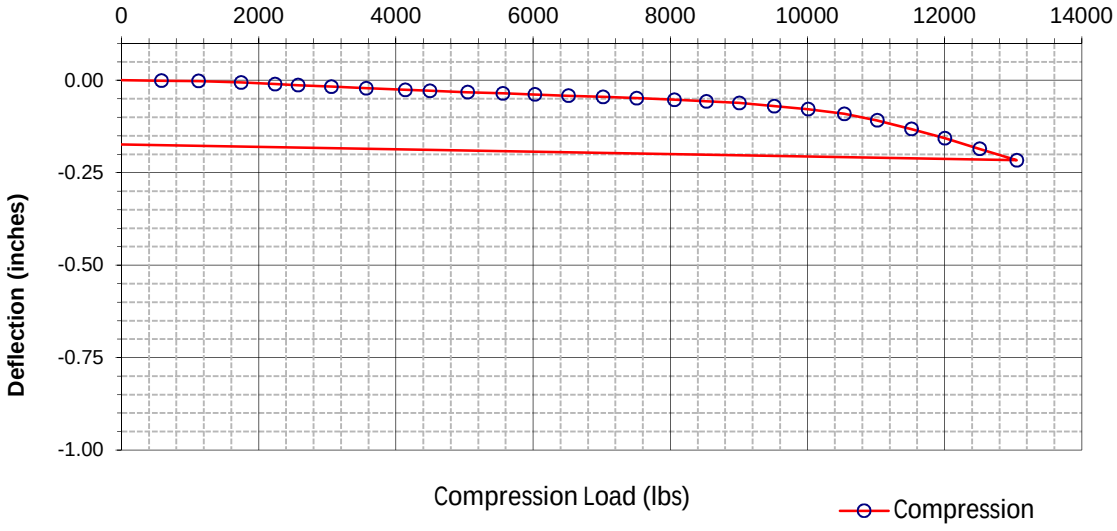


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	7.0	[feet]
Project Number:	60215222		Time to Drive :	33	[seconds]
Date Tested:	10/13/21		Latitude:	33.92896	[° N]
Pile Size:	W6x9		Longitude:	116.57776	[° W]
Pile Location :	PLT-1D		Vert. Gauge Height (above grade):	6	[inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7020	-0.0450
2	580	-0.0010	16	7510	-0.0485
3	1120	-0.0020	17	8060	-0.0525
4	1740	-0.0060	18	8525	-0.0568
5	2235	-0.0103	19	9005	-0.0615
6	2570	-0.0133	20	9515	-0.0700
7	3055	-0.0173	21	10010	-0.0783
8	3565	-0.0213	22	10535	-0.0908
9	4135	-0.0260	23	11015	-0.1085
10	4495	-0.0285	24	11515	-0.1320
11	5045	-0.0323	25	12000	-0.1565
12	5560	-0.0355	26	12510	-0.1855
13	6025	-0.0385	27	13050	-0.2160
14	6515	-0.0418	28	0	-0.1740

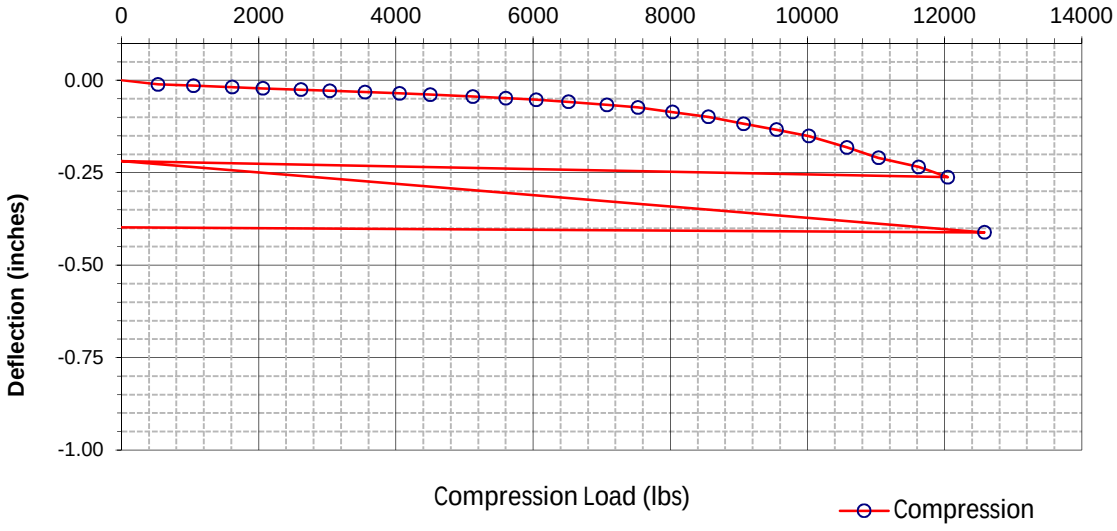


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	6.0	[feet]
Project Number:	60215222		Time to Drive :	32	[seconds]
Date Tested:	10/12/21		Latitude:	33.92599	[° N]
Pile Size:	W6x9		Longitude:	116.57894	[° W]
Pile Location :	PLT-2C		Vert. Gauge Height (above grade):	6	[inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7075	-0.0663
2	530	-0.0113	16	7525	-0.0733
3	1045	-0.0145	17	8030	-0.0858
4	1610	-0.0185	18	8555	-0.0990
5	2060	-0.0218	19	9065	-0.1178
6	2615	-0.0255	20	9545	-0.1335
7	3035	-0.0285	21	10020	-0.1508
8	3545	-0.0320	22	10575	-0.1815
9	4050	-0.0353	23	11035	-0.2098
10	4500	-0.0390	24	11620	-0.2343
11	5120	-0.0438	25	12045	-0.2623
12	5600	-0.0483	26	0	-0.2185
13	6045	-0.0528	27	12580	-0.4115
14	6515	-0.0583	28	0	-0.3980

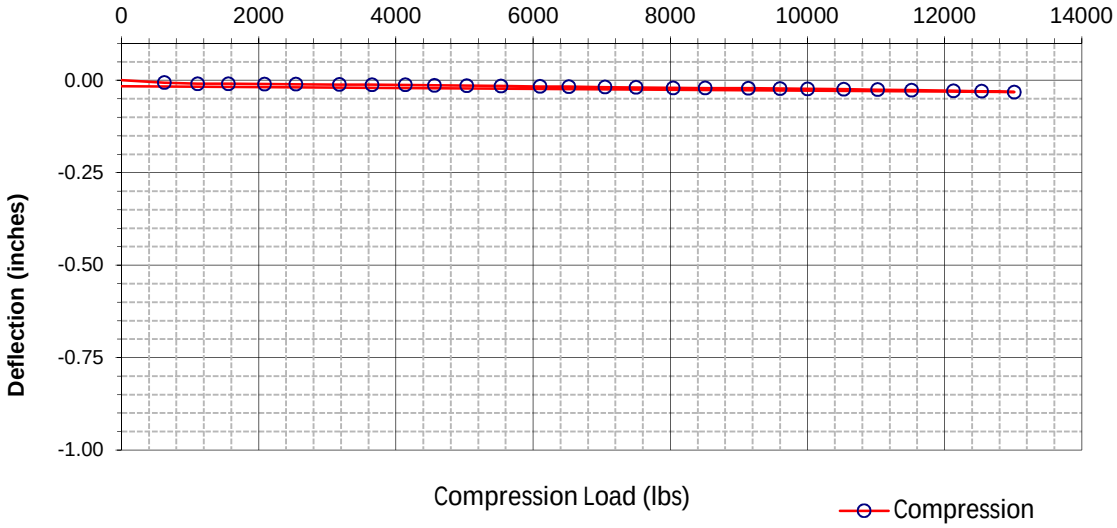


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	8.0 [feet]
Project Number:	60215222	Time to Drive :	51 [seconds]
Date Tested:	10/12/21	Latitude:	33.92599 [° N]
Pile Size:	W6x9	Longitude:	116.57894 [° W]
Pile Location :	PLT-2D	Vert. Gauge Height (above grade):	6 [inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7045	-0.0185
2	620	-0.0063	16	7500	-0.0193
3	1105	-0.0093	17	8040	-0.0205
4	1555	-0.0095	18	8505	-0.0210
5	2080	-0.0100	19	9135	-0.0213
6	2540	-0.0105	20	9600	-0.0223
7	3175	-0.0115	21	10000	-0.0230
8	3650	-0.0120	22	10525	-0.0240
9	4135	-0.0125	23	11020	-0.0253
10	4560	-0.0135	24	11515	-0.0265
11	5030	-0.0148	25	12125	-0.0283
12	5530	-0.0153	26	12540	-0.0298
13	6100	-0.0168	27	13015	-0.0318
14	6520	-0.0173	28	0	-0.0160

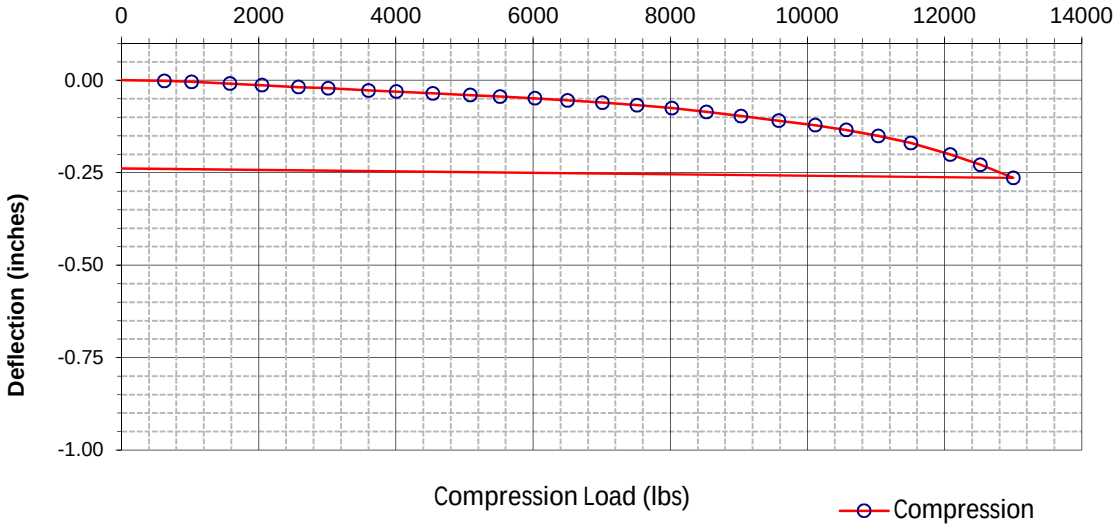


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	5.0	[feet]
Project Number:	60215222		Time to Drive :	36	[seconds]
Date Tested:	10/12/21		Latitude:	33.92579	[° N]
Pile Size:	W6x9		Longitude:	116.57494	[° W]
Pile Location :	PLT-3C		Vert. Gauge Height (above grade):	6	[inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7010	-0.0603
2	620	-0.0015	16	7515	-0.0673
3	1020	-0.0043	17	8020	-0.0753
4	1580	-0.0090	18	8525	-0.0855
5	2045	-0.0133	19	9030	-0.0968
6	2575	-0.0183	20	9580	-0.1093
7	3010	-0.0215	21	10110	-0.1213
8	3600	-0.0275	22	10565	-0.1345
9	4005	-0.0308	23	11030	-0.1503
10	4535	-0.0353	24	11505	-0.1695
11	5080	-0.0400	25	12080	-0.2005
12	5515	-0.0440	26	12520	-0.2285
13	6025	-0.0488	27	13000	-0.2640
14	6500	-0.0543	28	0	-0.2388

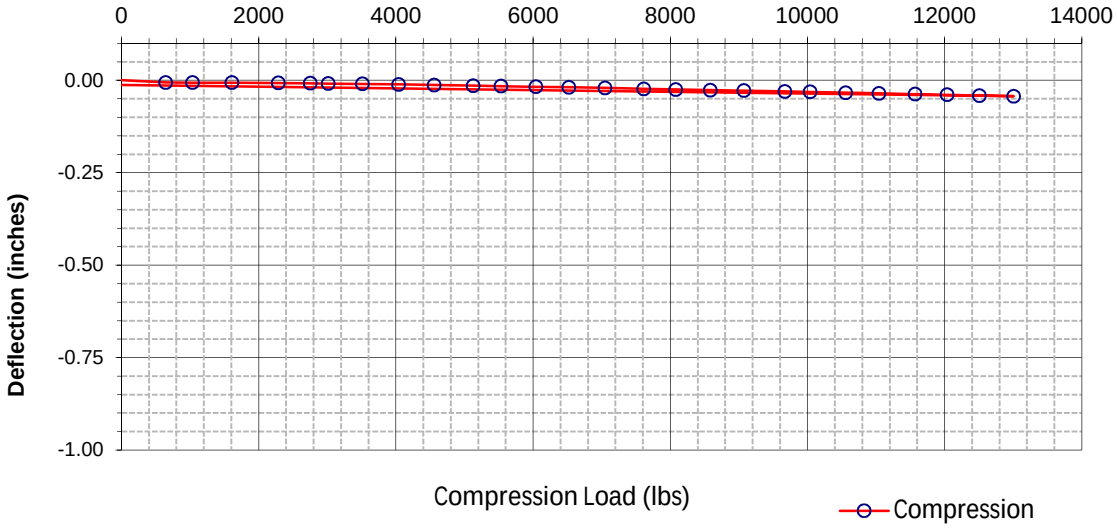


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	7.0	[feet]
Project Number:	60215222		Time to Drive :	41	[seconds]
Date Tested:	10/12/21		Latitude:	33.92579	[° N]
Pile Size:	W6x9		Longitude:	116.57494	[° W]
Pile Location :	PLT-3D		Vert. Gauge Height (above grade):	6	[inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7045	-0.0208
2	640	-0.0060	16	7610	-0.0230
3	1030	-0.0063	17	8075	-0.0248
4	1605	-0.0065	18	8580	-0.0265
5	2280	-0.0073	19	9070	-0.0280
6	2750	-0.0083	20	9670	-0.0303
7	3010	-0.0088	21	10035	-0.0315
8	3510	-0.0098	22	10555	-0.0338
9	4035	-0.0113	23	11040	-0.0353
10	4555	-0.0128	24	11565	-0.0375
11	5125	-0.0145	25	12035	-0.0393
12	5530	-0.0158	26	12505	-0.0413
13	6040	-0.0175	27	13005	-0.0430
14	6520	-0.0190	28	0	-0.0130

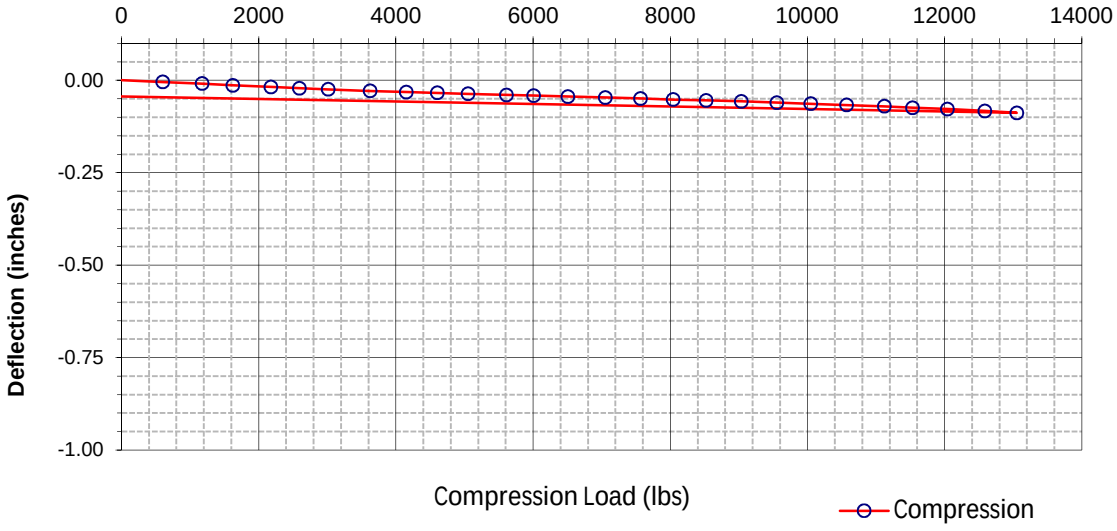


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	7.0	[feet]
Project Number:	60215222		Time to Drive :	36	[seconds]
Date Tested:	10/12/21		Latitude:	33.92567	[° N]
Pile Size:	W6x9		Longitude:	116.57168	[° W]
Pile Location :	PLT-4C		Vert. Gauge Height (above grade):	6	[inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7050	-0.0465
2	600	-0.0045	16	7565	-0.0490
3	1170	-0.0090	17	8040	-0.0520
4	1620	-0.0138	18	8520	-0.0543
5	2175	-0.0180	19	9035	-0.0570
6	2590	-0.0213	20	9550	-0.0603
7	3010	-0.0245	21	10045	-0.0633
8	3620	-0.0290	22	10570	-0.0668
9	4150	-0.0318	23	11120	-0.0703
10	4600	-0.0340	24	11530	-0.0743
11	5050	-0.0368	25	12040	-0.0778
12	5610	-0.0395	26	12585	-0.0828
13	6005	-0.0415	27	13050	-0.0883
14	6505	-0.0438	28	0	-0.0440

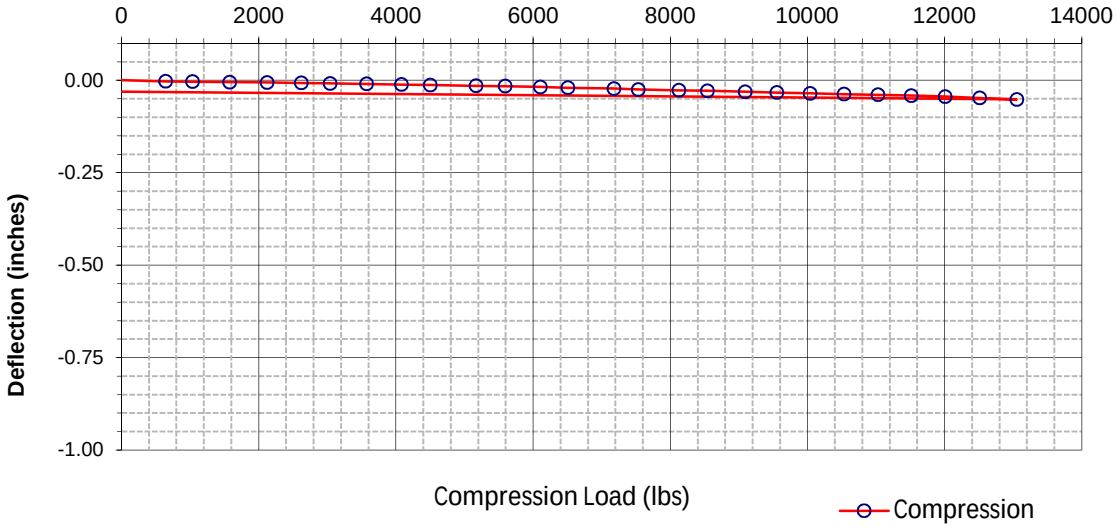


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	8.0	[feet]
Project Number:	60215222		Time to Drive :	77	[seconds]
Date Tested:	10/12/21		Latitude:	33.92567	[° N]
Pile Size:	W6x9		Longitude:	116.57168	[° W]
Pile Location :	PLT-4D		Vert. Gauge Height (above grade):	6	[inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7175	-0.0223
2	640	-0.0030	16	7530	-0.0250
3	1030	-0.0038	17	8125	-0.0270
4	1575	-0.0053	18	8540	-0.0283
5	2120	-0.0060	19	9090	-0.0310
6	2620	-0.0070	20	9550	-0.0330
7	3040	-0.0085	21	10035	-0.0353
8	3570	-0.0098	22	10530	-0.0375
9	4080	-0.0115	23	11025	-0.0393
10	4500	-0.0130	24	11510	-0.0415
11	5165	-0.0150	25	12005	-0.0440
12	5590	-0.0160	26	12510	-0.0480
13	6105	-0.0180	27	13050	-0.0518
14	6505	-0.0200	28	0	-0.0305

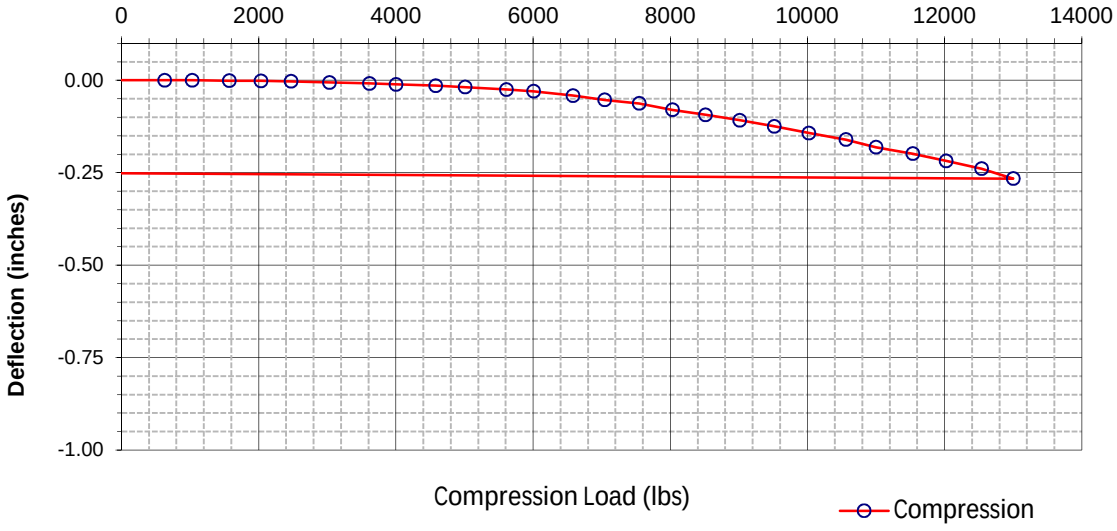


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	5.0	[feet]
Project Number:	60215222		Time to Drive :	23	[seconds]
Date Tested:	10/13/21		Latitude:	33.92869	[° N]
Pile Size:	W6x9		Longitude:	116.57146	[° W]
Pile Location :	PLT-5C		Vert. Gauge Height (above grade):	6	[inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7040	-0.0530
2	625	0.0000	16	7545	-0.0628
3	1025	0.0000	17	8030	-0.0798
4	1570	-0.0010	18	8510	-0.0935
5	2030	-0.0015	19	9010	-0.1080
6	2470	-0.0030	20	9515	-0.1245
7	3030	-0.0058	21	10020	-0.1425
8	3610	-0.0085	22	10560	-0.1603
9	4000	-0.0113	23	11000	-0.1810
10	4580	-0.0148	24	11535	-0.1985
11	5005	-0.0185	25	12020	-0.2178
12	5610	-0.0250	26	12540	-0.2390
13	6005	-0.0298	27	13000	-0.2660
14	6580	-0.0413	28	0	-0.2513

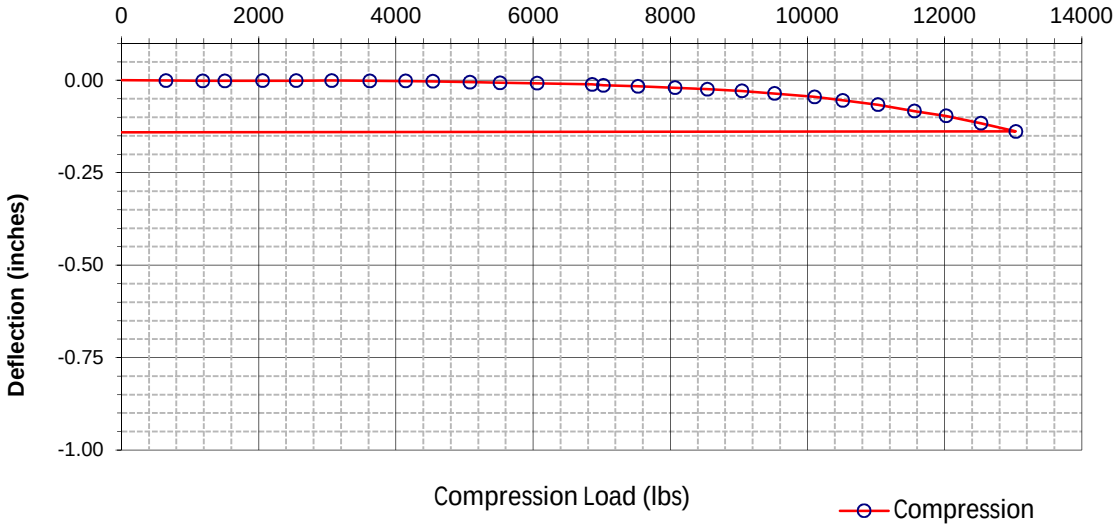


Pile Load Test Results

Project Name:	Desert Peak	Pile Embedment Depth:	7.0 [feet]
Project Number:	60215222	Time to Drive :	33 [seconds]
Date Tested:	10/13/21	Latitude:	33.92869 [° N]
Pile Size:	W6x9	Longitude:	116.57146 [° W]
Pile Location :	PLT-5D	Vert. Gauge Height (above grade):	6 [inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7025	-0.0135
2	645	-0.0008	16	7525	-0.0165
3	1180	-0.0015	17	8070	-0.0200
4	1505	-0.0015	18	8540	-0.0240
5	2055	-0.0013	19	9045	-0.0290
6	2545	-0.0010	20	9520	-0.0358
7	3060	-0.0008	21	10100	-0.0448
8	3615	-0.0015	22	10515	-0.0543
9	4140	-0.0020	23	11025	-0.0660
10	4535	-0.0030	24	11560	-0.0833
11	5075	-0.0050	25	12020	-0.0965
12	5515	-0.0068	26	12530	-0.1163
13	6055	-0.0083	27	13035	-0.1385
14	6860	-0.0113	28	0	-0.1410

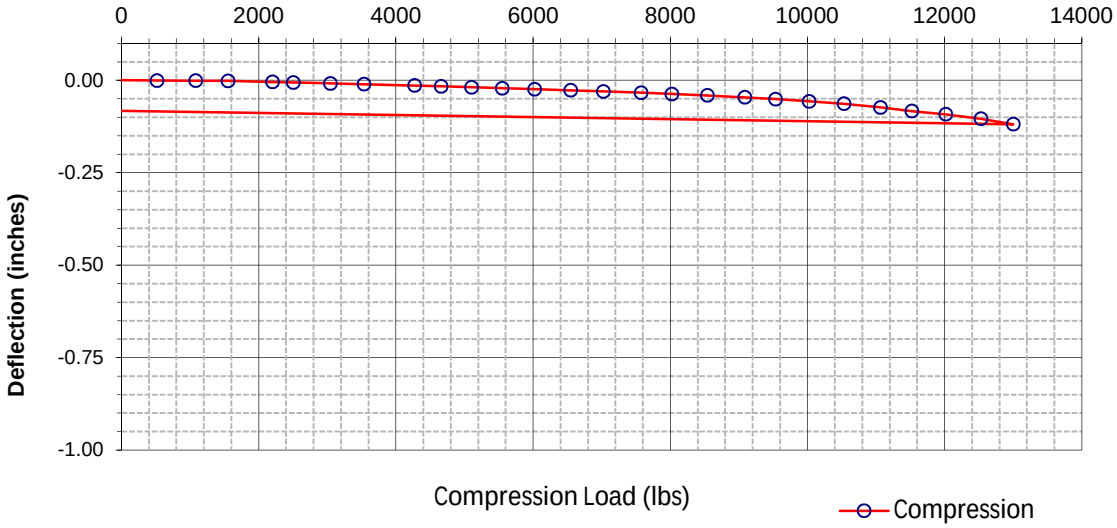


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	6.0	[feet]
Project Number:	60215222		Time to Drive :	42	[seconds]
Date Tested:	10/13/21		Latitude:	33.93135	[° N]
Pile Size:	W6x9		Longitude:	116.57357	[° W]
Pile Location :	PLT-6C		Vert. Gauge Height (above grade):	6	[inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7025	-0.0303
2	515	-0.0005	16	7575	-0.0338
3	1080	-0.0013	17	8020	-0.0370
4	1550	-0.0018	18	8540	-0.0408
5	2200	-0.0045	19	9085	-0.0463
6	2500	-0.0060	20	9535	-0.0510
7	3045	-0.0085	21	10025	-0.0568
8	3535	-0.0108	22	10530	-0.0633
9	4270	-0.0143	23	11065	-0.0735
10	4655	-0.0165	24	11520	-0.0833
11	5100	-0.0190	25	12015	-0.0920
12	5550	-0.0213	26	12530	-0.1040
13	6020	-0.0243	27	13000	-0.1188
14	6545	-0.0273	28	0	-0.0828

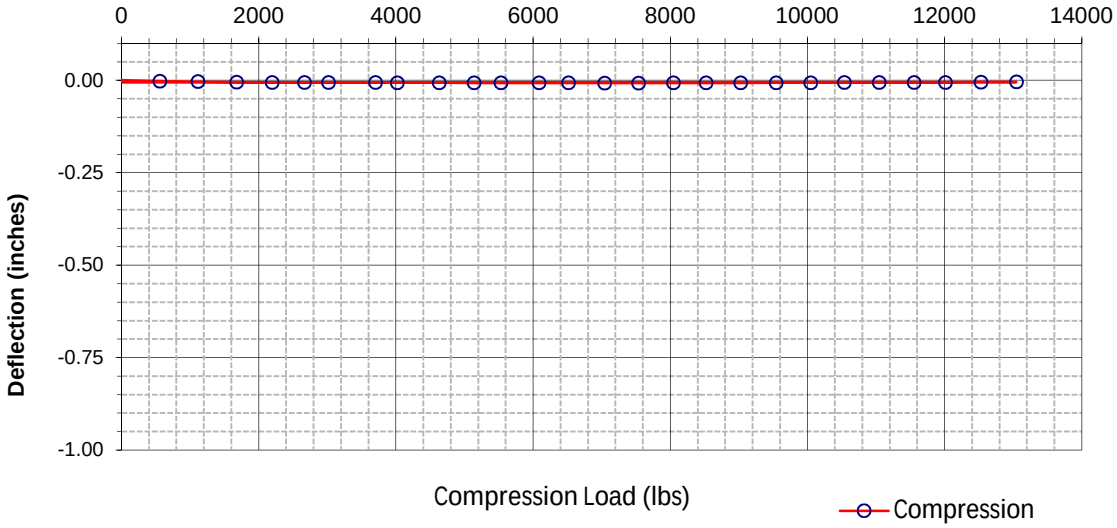


Pile Load Test Results

Project Name:	Desert Peak		Pile Embedment Depth:	8.0	[feet]
Project Number:	60215222		Time to Drive :	72	[seconds]
Date Tested:	10/13/21		Latitude:	33.93135	[° N]
Pile Size:	W6x9		Longitude:	116.57357	[° W]
Pile Location :	PLT-6D		Vert. Gauge Height (above grade):	6	[inches]

Compression Test Results

Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)	Reading	Compression Load (lbs)	Corrected Deflection Δ Average (inches)
1	0	0.0000	15	7040	-0.0075
2	555	-0.0025	16	7535	-0.0075
3	1110	-0.0038	17	8045	-0.0073
4	1675	-0.0050	18	8520	-0.0070
5	2195	-0.0058	19	9025	-0.0070
6	2665	-0.0060	20	9540	-0.0068
7	3015	-0.0065	21	10045	-0.0068
8	3700	-0.0065	22	10535	-0.0065
9	4020	-0.0068	23	11045	-0.0060
10	4630	-0.0068	24	11555	-0.0060
11	5140	-0.0070	25	12010	-0.0058
12	5530	-0.0073	26	12530	-0.0050
13	6085	-0.0070	27	13045	-0.0045
14	6515	-0.0070	28	0	-0.0055



SUPPORTING INFORMATION

GENERAL NOTES

Terracon GeoReport

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING


Auger


Shelby Tube


Split Spoon


Rock Core


Macro Core


Modified California Ring Sampler


Grab Sample


No Recovery


Modified Dames & Moore Ring Sampler

WATER LEVEL


Water Initially Encountered


Water Level After a Specified Period of Time


Water Level After a Specified Period of Time

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.

FIELD TESTS

(HP)	Hand Penetrometer
(T)	Torvane
(b/f)	Standard Penetration Test (blows per foot)
N	N value
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer
(WOH)	Weight of Hammer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. 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 Includes gravels, sands and silts.			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			
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength, Qu, psf**	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**
Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3
Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4
Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9
Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18
Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42
			Hard	> 8,000	> 30	> 42

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

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 ≥ 4 and 1 ≤ Cc ≤ 3 [E]		GW	Well-graded gravel [F]
			Cu < 4 and/or [Cc<1 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 ≥ 6 and 1 ≤ Cc ≤ 3 [E]		SW	Well-graded sand [I]
			Cu < 6 and/or [Cc<1 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 on or above "A"		CL	Lean clay [K, L, M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K, L, M, N]
			Liquid limit - not dried			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:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K, L, M, P]
			Liquid limit - not dried			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] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 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 ≥ 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 ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

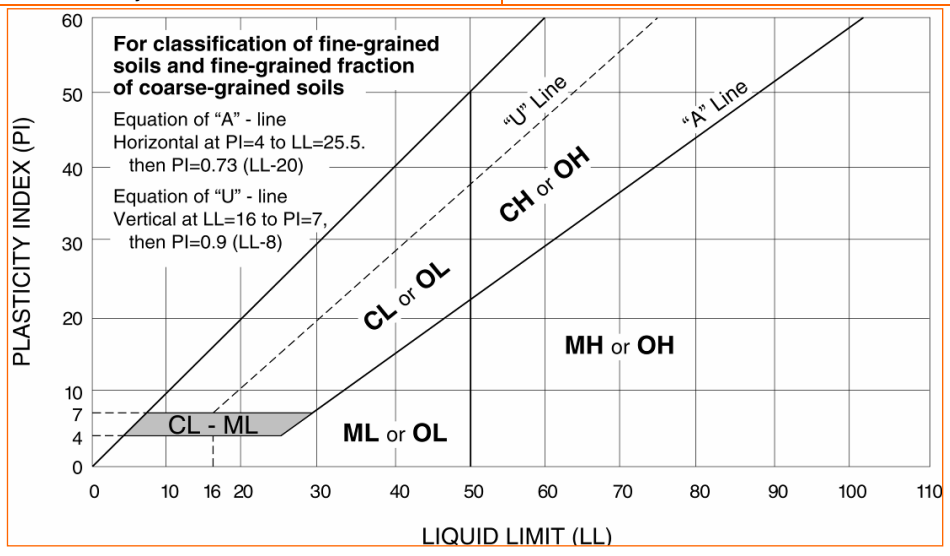
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 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.

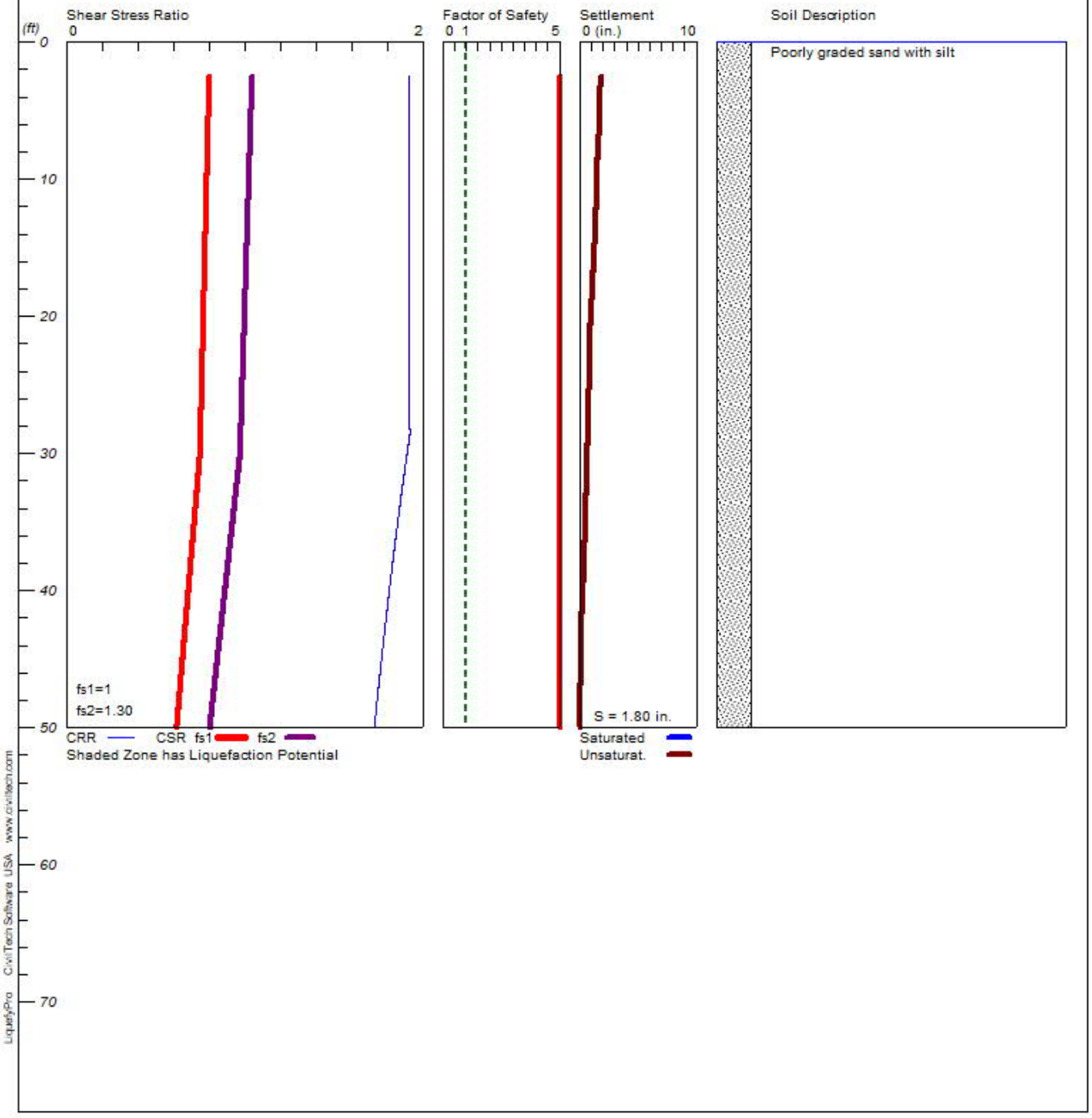


LIQUEFACTION ANALYSIS

Desert Peak Solar

Hole No.=B-4 Water Depth=100 ft

Magnitude=7.62
Acceleration=1.242g



CivilTech Corporation

60215222

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LIQUEFACTION ANALYSIS SUMMARY
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Font: Courier New, Regular, Size 8 is recommended for this report.
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Input File Name: C:\Users\vvnguyen\OneDrive - Terracon Consultants Inc\Desktop\Liquefaction\60215222\B-4.liq
Title: Desert Peak Solar
Subtitle: 60215222

Surface Elev.=
Hole No.=B-4
Depth of Hole= 50.00 ft
Water Table during Earthquake= 100.00 ft
Water Table during In-Situ Testing= 100.00 ft
Max. Acceleration= 1.24 g
Earthquake Magnitude= 7.62

Input Data:

Surface Elev.=
Hole No.=B-4
Depth of Hole=50.00 ft
Water Table during Earthquake= 100.00 ft
Water Table during In-Situ Testing= 100.00 ft
Max. Acceleration=1.24 g
Earthquake Magnitude=7.62
No-Liquefiable Soils: Based on Analysis

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu, M-correction
3. Fines Correction for Liquefaction: Modify Stark/Olson
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.42
7. Borehole Diameter, Cb= 1.15
8. Sampling Method, Cs= 1.2
9. User request factor of safety (apply to CSR) , User= 1.3
   Plot two CSR (fs1=1, fs2=User)
10. Use Curve Smoothing: Yes*
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.50	26.00	125.00	9.00
5.00	28.00	135.00	9.00
7.50	45.00	115.00	9.00
10.00	39.00	115.00	9.00
15.00	37.00	115.00	9.00
20.00	60.00	103.00	9.00
25.00	53.00	110.00	9.00
30.00	60.00	121.00	9.00
35.00	77.00	115.00	9.00
40.00	60.00	111.00	9.00
45.00	78.00	110.00	9.00

Output Results:

Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=1.80 in.
Total Settlement of Saturated and Unsaturated Sands=1.80 in.
Differential Settlement=0.901 to 1.189 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
2.50	1.92	0.80	5.00	0.00	1.80	1.80
3.00	1.92	0.80	5.00	0.00	1.79	1.79
3.50	1.92	0.80	5.00	0.00	1.75	1.75
4.00	1.92	0.80	5.00	0.00	1.72	1.72
4.50	1.92	0.80	5.00	0.00	1.71	1.71
5.00	1.92	0.80	5.00	0.00	1.70	1.70
5.50	1.92	0.80	5.00	0.00	1.69	1.69
6.00	1.92	0.80	5.00	0.00	1.68	1.68
6.50	1.92	0.80	5.00	0.00	1.66	1.66
7.00	1.92	0.79	5.00	0.00	1.64	1.64
7.50	1.92	0.79	5.00	0.00	1.61	1.61
8.00	1.92	0.79	5.00	0.00	1.57	1.57
8.50	1.92	0.79	5.00	0.00	1.53	1.53
9.00	1.92	0.79	5.00	0.00	1.49	1.49
9.50	1.92	0.79	5.00	0.00	1.47	1.47

10.00	1.92	0.79	5.00	0.00	1.46	1.46
10.50	1.92	0.79	5.00	0.00	1.45	1.45
11.00	1.92	0.79	5.00	0.00	1.44	1.44
11.50	1.92	0.79	5.00	0.00	1.43	1.43
12.00	1.92	0.78	5.00	0.00	1.41	1.41
12.50	1.92	0.78	5.00	0.00	1.39	1.39
13.00	1.92	0.78	5.00	0.00	1.38	1.38
13.50	1.92	0.78	5.00	0.00	1.35	1.35
14.00	1.92	0.78	5.00	0.00	1.33	1.33
14.50	1.92	0.78	5.00	0.00	1.30	1.30
15.00	1.92	0.78	5.00	0.00	1.26	1.26
15.50	1.92	0.78	5.00	0.00	1.23	1.23
16.00	1.92	0.78	5.00	0.00	1.20	1.20
16.50	1.92	0.78	5.00	0.00	1.17	1.17
17.00	1.92	0.78	5.00	0.00	1.14	1.14
17.50	1.92	0.77	5.00	0.00	1.11	1.11
18.00	1.92	0.77	5.00	0.00	1.08	1.08
18.50	1.92	0.77	5.00	0.00	1.05	1.05
19.00	1.92	0.77	5.00	0.00	1.02	1.02
19.50	1.92	0.77	5.00	0.00	0.99	0.99
20.00	1.92	0.77	5.00	0.00	0.96	0.96
20.50	1.92	0.77	5.00	0.00	0.92	0.92
21.00	1.92	0.77	5.00	0.00	0.89	0.89
21.50	1.92	0.77	5.00	0.00	0.88	0.88
22.00	1.92	0.77	5.00	0.00	0.87	0.87
22.50	1.92	0.76	5.00	0.00	0.86	0.86
23.00	1.92	0.76	5.00	0.00	0.85	0.85
23.50	1.92	0.76	5.00	0.00	0.84	0.84
24.00	1.92	0.76	5.00	0.00	0.83	0.83
24.50	1.92	0.76	5.00	0.00	0.82	0.82
25.00	1.92	0.76	5.00	0.00	0.80	0.80
25.50	1.92	0.76	5.00	0.00	0.79	0.79
26.00	1.92	0.76	5.00	0.00	0.77	0.77
26.50	1.92	0.76	5.00	0.00	0.76	0.76
27.00	1.92	0.76	5.00	0.00	0.74	0.74
27.50	1.92	0.76	5.00	0.00	0.73	0.73
28.00	1.92	0.75	5.00	0.00	0.71	0.71
28.50	1.93	0.75	5.00	0.00	0.70	0.70
29.00	1.92	0.75	5.00	0.00	0.68	0.68
29.50	1.92	0.75	5.00	0.00	0.66	0.66
30.00	1.91	0.75	5.00	0.00	0.65	0.65
30.50	1.91	0.75	5.00	0.00	0.63	0.63
31.00	1.90	0.74	5.00	0.00	0.61	0.61
31.50	1.90	0.74	5.00	0.00	0.60	0.60
32.00	1.89	0.74	5.00	0.00	0.58	0.58
32.50	1.88	0.73	5.00	0.00	0.56	0.56
33.00	1.88	0.73	5.00	0.00	0.55	0.55
33.50	1.87	0.73	5.00	0.00	0.53	0.53
34.00	1.87	0.72	5.00	0.00	0.51	0.51
34.50	1.86	0.72	5.00	0.00	0.50	0.50
35.00	1.86	0.72	5.00	0.00	0.48	0.48
35.50	1.85	0.71	5.00	0.00	0.46	0.46
36.00	1.85	0.71	5.00	0.00	0.44	0.44
36.50	1.84	0.71	5.00	0.00	0.42	0.42
37.00	1.84	0.70	5.00	0.00	0.40	0.40
37.50	1.83	0.70	5.00	0.00	0.38	0.38
38.00	1.83	0.70	5.00	0.00	0.36	0.36
38.50	1.83	0.69	5.00	0.00	0.34	0.34
39.00	1.82	0.69	5.00	0.00	0.32	0.32
39.50	1.82	0.69	5.00	0.00	0.29	0.29
40.00	1.81	0.68	5.00	0.00	0.27	0.27
40.50	1.81	0.68	5.00	0.00	0.24	0.24
41.00	1.80	0.68	5.00	0.00	0.21	0.21
41.50	1.80	0.68	5.00	0.00	0.19	0.19
42.00	1.79	0.67	5.00	0.00	0.16	0.16
42.50	1.79	0.67	5.00	0.00	0.14	0.14
43.00	1.79	0.67	5.00	0.00	0.13	0.13
43.50	1.78	0.66	5.00	0.00	0.12	0.12
44.00	1.78	0.66	5.00	0.00	0.11	0.11
44.50	1.77	0.66	5.00	0.00	0.10	0.10
45.00	1.77	0.65	5.00	0.00	0.09	0.09
45.50	1.76	0.65	5.00	0.00	0.08	0.08
46.00	1.76	0.65	5.00	0.00	0.07	0.07
46.50	1.76	0.64	5.00	0.00	0.06	0.06
47.00	1.75	0.64	5.00	0.00	0.06	0.06
47.50	1.75	0.64	5.00	0.00	0.05	0.05
48.00	1.74	0.63	5.00	0.00	0.04	0.04
48.50	1.74	0.63	5.00	0.00	0.03	0.03
49.00	1.74	0.63	5.00	0.00	0.02	0.02
49.50	1.73	0.62	5.00	0.00	0.01	0.01
50.00	1.73	0.62	5.00	0.00	0.00	0.00

* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

1 atm (atmosphere) = 1 tsf (ton/ft2)

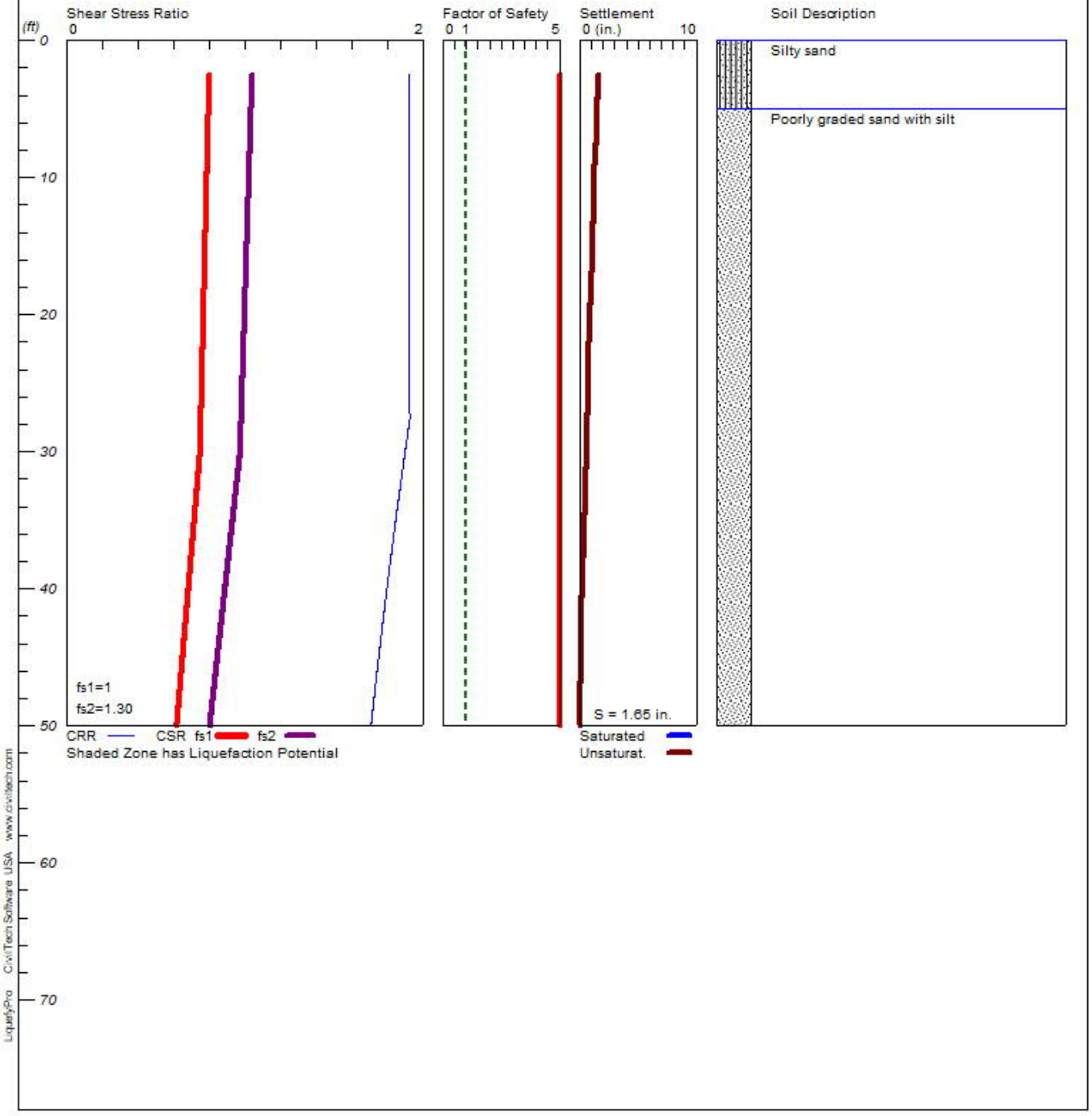
CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils

LIQUEFACTION ANALYSIS

Deser Peak Solar

Hole No.=TL-01 Water Depth=100 ft

Magnitude=7.62
Acceleration=1.242g



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LIQUEFACTION ANALYSIS SUMMARY
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Input File Name: C:\Users\vvnguyen\OneDrive - Terracon Consultants Inc\Desktop\Liquefaction\60215222\TL-1.liq
Title: Deser Peak Solar
Subtitle: 60215222

Surface Elev.=
Hole No.=TL-01
Depth of Hole= 50.00 ft
Water Table during Earthquake= 100.00 ft
Water Table during In-Situ Testing= 100.00 ft
Max. Acceleration= 1.24 g
Earthquake Magnitude= 7.62

Input Data:
Surface Elev.=
Hole No.=TL-01
Depth of Hole=50.00 ft
Water Table during Earthquake= 100.00 ft
Water Table during In-Situ Testing= 100.00 ft
Max. Acceleration=1.24 g
Earthquake Magnitude=7.62
No-Liquefiable Soils: Based on Analysis

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu, M-correction
3. Fines Correction for Liquefaction: Modify Stark/Olson
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.42
7. Borehole Diameter, Cb= 1.15
8. Sampling Method, Cs= 1.2
9. User request factor of safety (apply to CSR) , User= 1.3
   Plot two CSR (fs1=1, fs2=User)
10. Use Curve Smoothing: Yes*
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
2.50	19.00	117.00	18.00
5.00	30.00	120.00	6.00
7.50	33.00	120.00	6.00
10.00	38.00	120.00	6.00
15.00	60.00	120.00	6.00
20.00	300.00	120.00	6.00
25.00	75.00	120.00	6.00
30.00	88.00	120.00	6.00
35.00	112.00	120.00	11.00
40.00	150.00	120.00	11.00
45.00	120.00	120.00	11.00
50.00	118.00	120.00	11.00

Output Results:
Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=1.65 in.
Total Settlement of Saturated and Unsaturated Sands=1.65 in.
Differential Settlement=0.825 to 1.089 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
2.50	1.92	0.80	5.00	0.00	1.65	1.65
3.00	1.92	0.80	5.00	0.00	1.63	1.63
3.50	1.92	0.80	5.00	0.00	1.58	1.58
4.00	1.92	0.80	5.00	0.00	1.54	1.54
4.50	1.92	0.80	5.00	0.00	1.52	1.52
5.00	1.92	0.80	5.00	0.00	1.52	1.52
5.50	1.92	0.80	5.00	0.00	1.51	1.51
6.00	1.92	0.80	5.00	0.00	1.50	1.50
6.50	1.92	0.80	5.00	0.00	1.48	1.48
7.00	1.92	0.79	5.00	0.00	1.45	1.45
7.50	1.92	0.79	5.00	0.00	1.41	1.41
8.00	1.92	0.79	5.00	0.00	1.37	1.37
8.50	1.92	0.79	5.00	0.00	1.33	1.33
9.00	1.92	0.79	5.00	0.00	1.28	1.28

9.50	1.92	0.79	5.00	0.00	1.24	1.24
10.00	1.92	0.79	5.00	0.00	1.23	1.23
10.50	1.92	0.79	5.00	0.00	1.22	1.22
11.00	1.92	0.79	5.00	0.00	1.21	1.21
11.50	1.92	0.79	5.00	0.00	1.20	1.20
12.00	1.92	0.78	5.00	0.00	1.19	1.19
12.50	1.92	0.78	5.00	0.00	1.18	1.18
13.00	1.92	0.78	5.00	0.00	1.17	1.17
13.50	1.92	0.78	5.00	0.00	1.16	1.16
14.00	1.92	0.78	5.00	0.00	1.14	1.14
14.50	1.92	0.78	5.00	0.00	1.13	1.13
15.00	1.92	0.78	5.00	0.00	1.11	1.11
15.50	1.92	0.78	5.00	0.00	1.10	1.10
16.00	1.92	0.78	5.00	0.00	1.08	1.08
16.50	1.92	0.78	5.00	0.00	1.06	1.06
17.00	1.92	0.78	5.00	0.00	1.03	1.03
17.50	1.92	0.77	5.00	0.00	1.01	1.01
18.00	1.92	0.77	5.00	0.00	0.98	0.98
18.50	1.92	0.77	5.00	0.00	0.96	0.96
19.00	1.92	0.77	5.00	0.00	0.93	0.93
19.50	1.92	0.77	5.00	0.00	0.89	0.89
20.00	1.92	0.77	5.00	0.00	0.86	0.86
20.50	1.92	0.77	5.00	0.00	0.82	0.82
21.00	1.92	0.77	5.00	0.00	0.81	0.81
21.50	1.92	0.77	5.00	0.00	0.80	0.80
22.00	1.92	0.77	5.00	0.00	0.80	0.80
22.50	1.92	0.76	5.00	0.00	0.79	0.79
23.00	1.92	0.76	5.00	0.00	0.78	0.78
23.50	1.92	0.76	5.00	0.00	0.76	0.76
24.00	1.92	0.76	5.00	0.00	0.75	0.75
24.50	1.92	0.76	5.00	0.00	0.74	0.74
25.00	1.92	0.76	5.00	0.00	0.73	0.73
25.50	1.92	0.76	5.00	0.00	0.72	0.72
26.00	1.92	0.76	5.00	0.00	0.71	0.71
26.50	1.92	0.76	5.00	0.00	0.69	0.69
27.00	1.92	0.76	5.00	0.00	0.68	0.68
27.50	1.93	0.76	5.00	0.00	0.67	0.67
28.00	1.92	0.75	5.00	0.00	0.65	0.65
28.50	1.92	0.75	5.00	0.00	0.64	0.64
29.00	1.91	0.75	5.00	0.00	0.62	0.62
29.50	1.91	0.75	5.00	0.00	0.61	0.61
30.00	1.90	0.75	5.00	0.00	0.59	0.59
30.50	1.90	0.75	5.00	0.00	0.57	0.57
31.00	1.89	0.74	5.00	0.00	0.56	0.56
31.50	1.88	0.74	5.00	0.00	0.54	0.54
32.00	1.88	0.74	5.00	0.00	0.52	0.52
32.50	1.87	0.73	5.00	0.00	0.50	0.50
33.00	1.87	0.73	5.00	0.00	0.48	0.48
33.50	1.86	0.73	5.00	0.00	0.47	0.47
34.00	1.86	0.72	5.00	0.00	0.45	0.45
34.50	1.85	0.72	5.00	0.00	0.43	0.43
35.00	1.85	0.72	5.00	0.00	0.41	0.41
35.50	1.84	0.71	5.00	0.00	0.39	0.39
36.00	1.84	0.71	5.00	0.00	0.37	0.37
36.50	1.83	0.71	5.00	0.00	0.35	0.35
37.00	1.83	0.70	5.00	0.00	0.33	0.33
37.50	1.82	0.70	5.00	0.00	0.31	0.31
38.00	1.82	0.70	5.00	0.00	0.29	0.29
38.50	1.81	0.69	5.00	0.00	0.27	0.27
39.00	1.81	0.69	5.00	0.00	0.25	0.25
39.50	1.80	0.69	5.00	0.00	0.23	0.23
40.00	1.80	0.68	5.00	0.00	0.21	0.21
40.50	1.79	0.68	5.00	0.00	0.19	0.19
41.00	1.79	0.68	5.00	0.00	0.17	0.17
41.50	1.78	0.68	5.00	0.00	0.16	0.16
42.00	1.78	0.67	5.00	0.00	0.15	0.15
42.50	1.77	0.67	5.00	0.00	0.14	0.14
43.00	1.77	0.67	5.00	0.00	0.13	0.13
43.50	1.77	0.66	5.00	0.00	0.12	0.12
44.00	1.76	0.66	5.00	0.00	0.11	0.11
44.50	1.76	0.66	5.00	0.00	0.10	0.10
45.00	1.75	0.65	5.00	0.00	0.09	0.09
45.50	1.75	0.65	5.00	0.00	0.09	0.09
46.00	1.74	0.65	5.00	0.00	0.08	0.08
46.50	1.74	0.64	5.00	0.00	0.07	0.07
47.00	1.73	0.64	5.00	0.00	0.06	0.06
47.50	1.73	0.64	5.00	0.00	0.05	0.05
48.00	1.73	0.63	5.00	0.00	0.04	0.04
48.50	1.72	0.63	5.00	0.00	0.03	0.03
49.00	1.72	0.63	5.00	0.00	0.02	0.02
49.50	1.71	0.62	5.00	0.00	0.01	0.01
50.00	1.71	0.62	5.00	0.00	0.00	0.00

* F.S.<1, Liquefaction Potential Zone

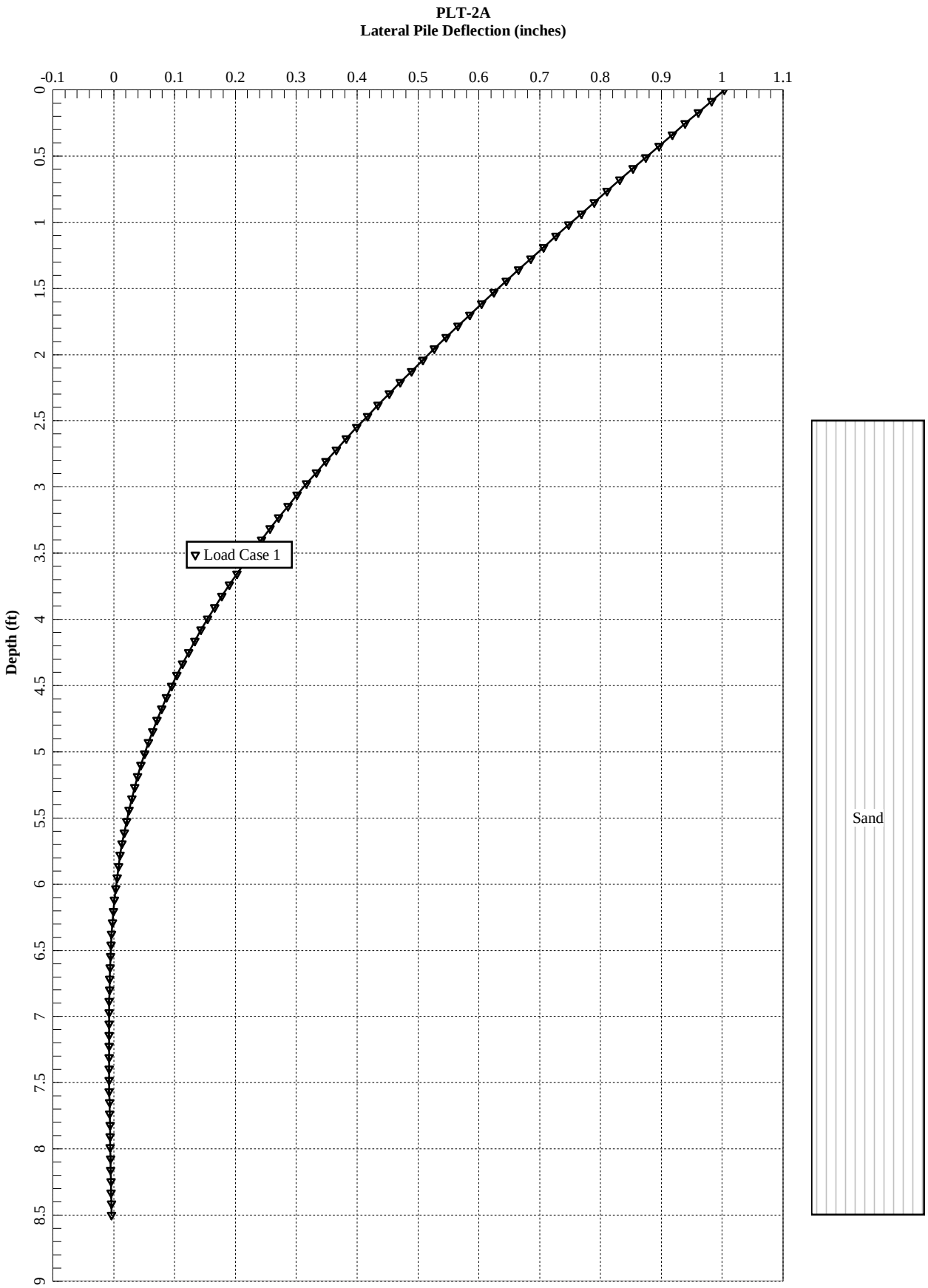
(F.S. is limited to 5, CRR is limited to 2,   CSR is limited to 2)

Units: Unit: qc, fs, Stress or Pressure = atm (1.0581tsf); Unit Weight = pcf; Depth = ft; Settlement = in.

---

1 atm (atmosphere) = 1 tsf (ton/ft2)

CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NoLiq	No-Liquefy Soils


PLT-2A
Lateral Pile Deflection (inches)
-0.1
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
1.1
Depth (ft)
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
5.5
6
6.5
7
7.5
8
8.5
9
Load Case 1
Sand

LPile for Windows, Version 2019-11.002

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

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Files Used for Analysis

Path to file locations:
\Users\akmccranie\Desktop\Desert Peak LPILE\

Name of input data file:
PLT-2A.lp11

Name of output report file:
PLT-2A.lp11

Name of plot output file:
PLT-2A.lp11

Name of runtime message file:
PLT-2A.lp11

Date and Time of Analysis

Date: November 9, 2021 Time: 13:18:48

Problem Title

Project Name: Desert Peak

Job Number: 60215222

Client: NextEra Energy Resources LLC

Engineer: AKM

Description: PLT-2A

Program Options and Settings

Computational Options:
 - Conventional Analysis
Engineering Units Used for Data Input and Computations:
 - US Customary System Units (pounds, feet, inches)

Analysis Control Options:
 - Maximum number of iterations allowed = 500
 - Deflection tolerance for convergence = 1.0000E-05 in
 - Maximum allowable deflection = 100.0000 in
 - Number of pile increments = 100

Loading Type and Number of Cycles of Loading:
 - Static loading specified

 - Analysis uses p-y modification factors for p-y curves
 - Analysis uses layering correction (Method of Georgiadis)
 - No distributed lateral loads are entered
 - Loading by lateral soil movements acting on pile not selected
 - Input of shear resistance at the pile tip not selected
 - Input of moment resistance at the pile tip not selected
 - Computation of pile-head foundation stiffness matrix not selected
 - Push-over analysis of pile not selected
 - Buckling analysis of pile not selected

Output Options:
 - Output files use decimal points to denote decimal symbols.
 - Values of pile-head deflection, bending moment, shear force, and
   soil reaction are printed for full length of pile.
 - Printing Increment (nodal spacing of output points) = 1
 - No p-y curves to be computed and reported for user-specified depths
 - Print using wide report formats

Pile Structural Properties and Geometry

Number of pile sections defined = 1
Total length of pile = 8.500 ft
Depth of ground surface below top of pile = 2.5000 ft

Pile diameters used for p-y curve computations are defined using 2 points.

p-y curves are computed using pile diameter values interpolated with depth over
the length of the pile. A summary of values of pile diameter vs. depth follows.

Point No.	Depth Below Pile Head feet	Pile Diameter inches
1	0.000	3.9400
2	8.500	3.9400

Input Structural Properties for Pile Sections:

Pile Section No. 1:

Section 1 is a AISC strong axis steel pile

Length of section	=	8.500000 ft
AISC Section Type	=	W
AISC Section Name	=	W6X9
Pile width	=	3.940000 in
Shear capacity of section	=	0.0000 lbs

Ground Slope and Pile Batter Angles

Ground Slope Angle	=	0.000 degrees
	=	0.000 radians
Pile Batter Angle	=	0.000 degrees
	=	0.000 radians

Soil and Rock Layering Information

The soil profile is modelled using 1 layers

Layer 1 is sand, p-y criteria by Reese et al., 1974

Distance from top of pile to top of layer	=	2.500000 ft
Distance from top of pile to bottom of layer	=	8.500000 ft
Effective unit weight at top of layer	=	115.000000 pcf
Effective unit weight at bottom of layer	=	115.000000 pcf
Friction angle at top of layer	=	38.000000 deg.
Friction angle at bottom of layer	=	38.000000 deg.
Subgrade k at top of layer	=	0.0000 pci
Subgrade k at bottom of layer	=	0.0000 pci

NOTE: Default values for subgrade k will be computed for this layer.

(Depth of the lowest soil layer extends 0.000 ft below the pile tip)

Summary of Input Soil Properties

Layer Num.	Soil Type Name (p-y Curve Type)	Layer Depth ft	Effective Unit Wt. pcf	Angle of Friction deg.	kpy pci
1	Sand	2.5000	115.0000	38.0000	default
	(Reese, et al.)	8.5000	115.0000	38.0000	default

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p-y Modification Factors for Group Action

Distribution of p-y modifiers with depth defined using 2 points

Point No.	Depth X ft	p-mult	y-mult
1	2.500	3.5000	1.0000
2	8.500	3.5000	1.0000

Static Loading Type

Static loading criteria were used when computing p-y curves for all analyses.

Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load No.	Load Type	Condition 1	Condition 2	Axial Thrust Force, lbs	Compute Top y vs. Pile Length	Run Analysis
1	1	V = 4180. lbs	M = 0.0000 in-lbs	0.0000000	No	Yes

V = shear force applied normal to pile axis
M = bending moment applied to pile head
y = lateral deflection normal to pile axis
S = pile slope relative to original pile batter angle
R = rotational stiffness applied to pile head
Values of top y vs. pile lengths can be computed only for load types with
specified shear loading (Load Types 1, 2, and 3).
Thrust force is assumed to be acting axially for all pile batter angles.

Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Axial thrust force values were determined from pile-head loading conditions

Number of Pile Sections Analyzed = 1

Pile Section No. 1:

Dimensions and Properties of Steel AISC Strong Axis:

Length of Section	=	8.500000 ft
Flange Width	=	3.940000 in
Section Depth	=	5.900000 in
Flange Thickness	=	0.215000 in
Web Thickness	=	0.170000 in
Yield Stress of Pipe	=	50.000000 ksi
Elastic Modulus	=	29000. ksi
Cross-sectional Area	=	2.680000 sq. in.
Moment of Inertia	=	16.400000 in^4
Elastic Bending Stiffness	=	475600. kip-in^2
Plastic Modulus, Z	=	6.230000in^3
Plastic Moment Capacity = Fy Z	=	311.500000in-kip

Axial Structural Capacities:

Nom. Axial Structural Capacity = Fy As = 134.000 kips
Nominal Axial Tensile Capacity = -134.000 kips

Number of Axial Thrust Force Values Determined from Pile-head Loadings = 1

Number	Axial Thrust Force kips
1	0.000

Definition of Run Messages:

Y = part of pipe section has yielded.

Axial Thrust Force = 0.000 kips

Bending Curvature rad/in.	Bending Moment in-kip	Bending Stiffness kip-in2	Depth to N Axis in	Max Total Stress ksi	Run Msg
0.00001860	8.6276633	463904.	2.9500000	1.5751428	
0.00003720	17.2553266	463904.	2.9500000	3.1502856	
0.00005579	25.8829899	463904.	2.9500000	4.7254285	
0.00007439	34.5106532	463904.	2.9500000	6.3005713	
0.00009299	43.1383165	463904.	2.9500000	7.8757141	
0.0001116	51.7659798	463904.	2.9500000	9.4508569	
0.0001302	60.3936431	463904.	2.9500000	11.0259997	
0.0001488	69.0213064	463904.	2.9500000	12.6011426	
0.0001674	77.6489697	463904.	2.9500000	14.1762854	
0.0001860	86.2766330	463904.	2.9500000	15.7514282	
0.0002046	94.9042963	463904.	2.9500000	17.3265710	
0.0002232	103.5319596	463904.	2.9500000	18.9017138	
0.0002418	112.1596229	463904.	2.9500000	20.4768567	
0.0002604	120.7872862	463904.	2.9500000	22.0519995	
0.0002790	129.4149495	463904.	2.9500000	23.6271423	
0.0002976	138.0426128	463904.	2.9500000	25.2022851	
0.0003162	146.6702761	463904.	2.9500000	26.7774279	
0.0003348	155.2979394	463904.	2.9500000	28.3525708	
0.0003534	163.9256027	463904.	2.9500000	29.9277136	
0.0003720	172.5532660	463904.	2.9500000	31.5028564	
0.0003906	181.1809293	463904.	2.9500000	33.0779992	
0.0004092	189.8085926	463904.	2.9500000	34.6531420	
0.0004278	198.4362559	463904.	2.9500000	36.2282849	
0.0004464	207.0639192	463904.	2.9500000	37.8034277	
0.0004649	215.6915825	463904.	2.9500000	39.3785705	
0.0004835	224.3192458	463904.	2.9500000	40.9537133	
0.0005021	232.9469091	463904.	2.9500000	42.5288562	
0.0005207	241.5745724	463904.	2.9500000	44.1039990	
0.0005393	250.2022357	463904.	2.9500000	45.6791418	
0.0005579	258.8298990	463904.	2.9500000	47.2542846	
0.0005765	267.4575623	463904.	2.9500000	48.8294274	
0.0005951	275.5359029	462981.	2.9500000	50.0000000	Y
0.0006137	280.7881071	457509.	2.9500000	50.0000000	Y
0.0006323	283.1514522	447791.	2.9500000	50.0000000	Y
0.0006509	284.3368958	436818.	2.9500000	50.0000000	Y
0.0006695	285.4292483	426316.	2.9500000	50.0000000	Y
0.0006881	286.4339483	416254.	2.9500000	50.0000000	Y
0.0007067	287.3549746	406603.	2.9500000	50.0000000	Y
0.0007253	288.2075402	397353.	2.9500000	50.0000000	Y
0.0007625	289.7319958	379969.	2.9500000	50.0000000	Y
0.0007997	291.0512587	363945.	2.9500000	50.0000000	Y
0.0008369	292.1898640	349131.	2.9500000	50.0000000	Y
0.0008741	293.1968369	335426.	2.9500000	50.0000000	Y
0.0009113	294.0729583	322697.	2.9500000	50.0000000	Y
0.0009485	294.8537100	310865.	2.9500000	50.0000000	Y

0.0009857	295.5495620	299840.	2.9500000	50.0000000	Y
0.0010229	296.1703814	289544.	2.9500000	50.0000000	Y
0.0010601	296.7254331	279908.	2.9500000	50.0000000	Y
0.0010973	297.2233791	270873.	2.9500000	50.0000000	Y
0.0011345	297.6722791	262388.	2.9500000	50.0000000	Y
0.0011717	298.0795901	254406.	2.9500000	50.0000000	Y
0.0012089	298.4521663	246886.	2.9500000	50.0000000	Y
0.0012461	298.7962597	239793.	2.9500000	50.0000000	Y
0.0012833	299.1016003	233080.	2.9500000	50.0000000	Y
0.0013205	299.3847278	226729.	2.9500000	50.0000000	Y
0.0013576	299.6519362	220714.	2.9500000	50.0000000	Y
0.0013948	299.8857727	214996.	2.9500000	50.0000000	Y
0.0014320	300.1125935	209570.	2.9500000	50.0000000	Y
0.0014692	300.3133293	204401.	2.9500000	50.0000000	Y
0.0015064	300.5080329	199483.	2.9500000	50.0000000	Y
0.0015436	300.6801271	194788.	2.9500000	50.0000000	Y
0.0015808	300.8513757	190313.	2.9500000	50.0000000	Y
0.0016180	300.9976906	186028.	2.9500000	50.0000000	Y
0.0016552	301.1440055	181936.	2.9500000	50.0000000	Y
0.0016924	301.2763389	178016.	2.9500000	50.0000000	Y
0.0017296	301.3995862	174259.	2.9500000	50.0000000	Y
0.0017668	301.5228335	170660.	2.9500000	50.0000000	Y
0.0018040	301.6279268	167200.	2.9500000	50.0000000	Y
0.0018412	301.7306674	163878.	2.9500000	50.0000000	Y
0.0018784	301.8334080	160687.	2.9500000	50.0000000	Y
0.0019156	301.9214299	157613.	2.9500000	50.0000000	Y
0.0019528	302.0060741	154654.	2.9500000	50.0000000	Y
0.0019900	302.0907184	151806.	2.9500000	50.0000000	Y
0.0020272	302.1703310	149060.	2.9500000	50.0000000	Y
0.0020644	302.2391386	146407.	2.9500000	50.0000000	Y
0.0021016	302.3079461	143849.	2.9500000	50.0000000	Y
0.0021388	302.3767537	141379.	2.9500000	50.0000000	Y
0.0021760	302.4413851	138992.	2.9500000	50.0000000	Y
0.0022132	302.4964650	136681.	2.9500000	50.0000000	Y
0.0023619	302.7091519	128161.	2.9500000	50.0000000	Y
0.0025107	302.8823948	120636.	2.9500000	50.0000000	Y
0.0026595	303.0239282	113940.	2.9500000	50.0000000	Y
0.0028083	303.1517045	107949.	2.9500000	50.0000000	Y
0.0029571	303.2518841	102551.	2.9500000	50.0000000	Y

Summary of Results for Nominal Moment Capacity for Section 1

Load No.	Axial Thrust kips	Nominal Moment Capacity in-kips
1	0.00000000	303.2518840861

Note that the values in the above table are not factored by a strength reduction factor for LRFD.

The value of the strength reduction factor depends on the provisions of the LRFD code being followed.

The above values should be multiplied by the appropriate strength reduction factor to compute ultimate moment capacity according to the LRFD structural design standard being followed.

PLT-2A

for Lateral Loading for Load Case Number 1

Pile-head conditions are Shear and Moment (Loading Type 1)

Shear force at pile head = 4180.0 lbs
Applied moment at pile head = 0.0 in-lbs
Axial thrust load on pile head = 0.0 lbs

Depth X feet	Deflect. y inches	Bending Moment in-lbs	Shear Force lbs	Slope S radians	Total Stress psi*	Bending Stiffness in-lb^2	Soil Res. p lb/inch	Soil Spr. Es*h lb/inch	Distrib. Lat. Load lb/inch
0.00	1.0039	-1.49E-06	4180.	-0.02115	1.78E-07	4.64E+08	0.00	0.00	0.00
0.08500	0.9823	4264.	4180.	-0.02115	512.1520	4.64E+08	0.00	0.00	0.00
0.1700	0.9607	8527.	4180.	-0.02114	1024.	4.64E+08	0.00	0.00	0.00
0.2550	0.9392	12791.	4180.	-0.02111	1536.	4.64E+08	0.00	0.00	0.00
0.3400	0.9177	17054.	4180.	-0.02108	2049.	4.64E+08	0.00	0.00	0.00
0.4250	0.8962	21318.	4180.	-0.02104	2561.	4.64E+08	0.00	0.00	0.00
0.5100	0.8747	25582.	4180.	-0.02099	3073.	4.64E+08	0.00	0.00	0.00
0.5950	0.8534	29845.	4180.	-0.02093	3585.	4.64E+08	0.00	0.00	0.00
0.6800	0.8321	34109.	4180.	-0.02085	4097.	4.64E+08	0.00	0.00	0.00
0.7650	0.8108	38372.	4180.	-0.02078	4609.	4.64E+08	0.00	0.00	0.00
0.8500	0.7897	42636.	4180.	-0.02069	5122.	4.64E+08	0.00	0.00	0.00
0.9350	0.7686	46900.	4180.	-0.02059	5634.	4.64E+08	0.00	0.00	0.00
1.0200	0.7477	51163.	4180.	-0.02048	6146.	4.64E+08	0.00	0.00	0.00
1.1050	0.7268	55427.	4180.	-0.02036	6658.	4.64E+08	0.00	0.00	0.00
1.1900	0.7061	59690.	4180.	-0.02024	7170.	4.64E+08	0.00	0.00	0.00
1.2750	0.6856	63954.	4180.	-0.02010	7682.	4.64E+08	0.00	0.00	0.00
1.3600	0.6651	68218.	4180.	-0.01995	8194.	4.64E+08	0.00	0.00	0.00
1.4450	0.6449	72481.	4180.	-0.01980	8707.	4.64E+08	0.00	0.00	0.00
1.5300	0.6247	76745.	4180.	-0.01964	9219.	4.64E+08	0.00	0.00	0.00
1.6150	0.6048	81008.	4180.	-0.01946	9731.	4.64E+08	0.00	0.00	0.00
1.7000	0.5850	85272.	4180.	-0.01928	10243.	4.64E+08	0.00	0.00	0.00
1.7850	0.5655	89536.	4180.	-0.01909	10755.	4.64E+08	0.00	0.00	0.00
1.8700	0.5461	93799.	4180.	-0.01889	11267.	4.64E+08	0.00	0.00	0.00
1.9550	0.5269	98063.	4180.	-0.01868	11779.	4.64E+08	0.00	0.00	0.00
2.0400	0.5080	102326.	4180.	-0.01845	12292.	4.64E+08	0.00	0.00	0.00
2.1250	0.4893	106590.	4180.	-0.01823	12804.	4.64E+08	0.00	0.00	0.00
2.2100	0.4708	110854.	4180.	-0.01799	13316.	4.64E+08	0.00	0.00	0.00
2.2950	0.4526	115117.	4180.	-0.01774	13828.	4.64E+08	0.00	0.00	0.00
2.3800	0.4346	119381.	4180.	-0.01748	14340.	4.64E+08	0.00	0.00	0.00
2.4650	0.4169	123644.	4180.	-0.01721	14852.	4.64E+08	0.00	0.00	0.00
2.5500	0.3995	127908.	4177.	-0.01694	15365.	4.64E+08	-6.8312	17.4404	0.00
2.6350	0.3824	132164.	4162.	-0.01665	15876.	4.64E+08	-21.0039	56.0266	0.00
2.7200	0.3656	136399.	4133.	-0.01636	16385.	4.64E+08	-37.4120	104.3900	0.00
2.8050	0.3490	140595.	4085.	-0.01605	16889.	4.64E+08	-54.9243	160.5118	0.00
2.8900	0.3328	144733.	4020.	-0.01574	17386.	4.64E+08	-72.7681	223.0195	0.00
2.9750	0.3169	148796.	3937.	-0.01541	17874.	4.64E+08	-89.9307	289.4378	0.00
3.0600	0.3014	152766.	3837.	-0.01508	18351.	4.64E+08	-107.1956	362.8121	0.00
3.1450	0.2862	156623.	3719.	-0.01474	18814.	4.64E+08	-123.2596	439.3611	0.00
3.2300	0.2713	160353.	3586.	-0.01439	19262.	4.64E+08	-138.2879	519.9331	0.00
3.3150	0.2568	163939.	3438.	-0.01404	19693.	4.64E+08	-150.9264	599.4977	0.00
3.4000	0.2427	167367.	3277.	-0.01367	20104.	4.64E+08	-165.8445	697.1263	0.00
3.4850	0.2289	170623.	3101.	-0.01330	20496.	4.64E+08	-179.1124	798.1551	0.00
3.5700	0.2155	173693.	2908.	-0.01292	20864.	4.64E+08	-198.9921	941.7791	0.00
3.6550	0.2025	176556.	2695.	-0.01254	21208.	4.64E+08	-218.5188	1101.	0.00
3.7400	0.1899	179191.	2463.	-0.01215	21525.	4.64E+08	-237.4592	1275.	0.00
3.8250	0.1778	181579.	2210.	-0.01175	21812.	4.64E+08	-257.0021	1475.	0.00
3.9100	0.1660	183700.	1934.	-0.01135	22066.	4.64E+08	-285.8258	1757.	0.00
3.9950	0.1546	185524.	1627.	-0.01094	22285.	4.64E+08	-315.9661	2085.	0.00
4.0800	0.1436	187019.	1292.	-0.01053	22465.	4.64E+08	-339.9621	2414.	0.00
4.1650	0.1331	188160.	939.5500	-0.01012	22602.	4.64E+08	-351.3778	2692.	0.00
4.2500	0.1230	188935.	575.3140	-0.00971	22695.	4.64E+08	-362.8106	3009.	0.00
4.3350	0.1133	189334.	200.1882	-0.00929	22743.	4.64E+08	-372.7302	3355.	0.00
4.4200	0.1040	189344.	-184.2863	-0.00887	22744.	4.64E+08	-381.1414	3736.	0.00
4.5050	0.09521	188958.	-576.5836	-0.00846	22698.	4.64E+08	-388.0689	4158.	0.00
4.5900	0.08679	188168.	-975.2129	-0.00804	22603.	4.64E+08	-393.5573	4625.	0.00
4.6750	0.07880	186968.	-1379.	-0.00763	22459.	4.64E+08	-397.6691	5148.	0.00

4.7600	0.07122	185355.	-1786.	-0.00722	22265.	4.64E+08	-400.4844	5735.	0.00
4.8450	0.06407	183325.	-2195.	-0.00682	22021.	4.64E+08	-402.0694	6401.	0.00
4.9300	0.05732	180877.	-2605.	-0.00642	21727.	4.64E+08	-401.7275	7149.	0.00
5.0150	0.05098	178011.	-3013.	-0.00602	21383.	4.64E+08	-399.0665	7985.	0.00
5.1000	0.04503	174730.	-3418.	-0.00563	20989.	4.64E+08	-394.0116	8924.	0.00
5.1850	0.03948	171038.	-3816.	-0.00525	20545.	4.64E+08	-386.4914	9984.	0.00
5.2700	0.03432	166945.	-4205.	-0.00488	20054.	4.64E+08	-376.4338	11189.	0.00
5.3550	0.02952	162460.	-4583.	-0.00452	19515.	4.64E+08	-363.7622	12567.	0.00
5.4400	0.02510	157597.	-4946.	-0.00417	18931.	4.64E+08	-348.3880	14160.	0.00
5.5250	0.02102	152371.	-5292.	-0.00383	18303.	4.64E+08	-330.2006	16023.	0.00
5.6100	0.01729	146801.	-5618.	-0.00350	17634.	4.64E+08	-309.0504	18235.	0.00
5.6950	0.01388	140910.	-5921.	-0.00318	16926.	4.64E+08	-284.7206	20918.	0.00
5.7800	0.01080	134723.	-6197.	-0.00288	16183.	4.64E+08	-256.8761	24271.	0.00
5.8650	0.00801	128269.	-6443.	-0.00259	15408.	4.64E+08	-224.9624	28649.	0.00
5.9500	0.00551	121580.	-6643.	-0.00232	14604.	4.64E+08	-167.2471	30953.	0.00
6.0350	0.00329	114718.	-6780.	-0.00206	13780.	4.64E+08	-102.1684	31716.	0.00
6.1200	0.00132	107749.	-6854.	-0.00181	12943.	4.64E+08	-41.9541	32479.	0.00
6.2050	-4.09E-04	100736.	-6868.	-0.00158	12101.	4.64E+08	13.3282	33241.	0.00
6.2900	-0.00191	93738.	-6829.	-0.00137	11260.	4.64E+08	63.6607	34004.	0.00
6.3750	-0.00320	86805.	-6741.	-0.00117	10427.	4.64E+08	109.0716	34766.	0.00
6.4600	-0.00430	79986.	-6609.	-9.86E-04	9608.	4.64E+08	149.6310	35529.	0.00
6.5450	-0.00521	73323.	-6438.	-8.18E-04	8808.	4.64E+08	185.4463	36292.	0.00
6.6300	-0.00596	66853.	-6233.	-6.64E-04	8031.	4.64E+08	216.6580	37054.	0.00
6.7150	-0.00657	60608.	-5998.	-5.24E-04	7280.	4.64E+08	243.4353	37817.	0.00
6.8000	-0.00703	54617.	-5738.	-3.97E-04	6561.	4.64E+08	265.9716	38580.	0.00
6.8850	-0.00738	48902.	-5458.	-2.83E-04	5874.	4.64E+08	284.4803	39342.	0.00
6.9700	-0.00761	43483.	-5160.	-1.81E-04	5223.	4.64E+08	299.1906	40105.	0.00
7.0550	-0.00775	38375.	-4849.	-9.15E-05	4610.	4.64E+08	310.3434	40867.	0.00
7.1400	-0.00780	33590.	-4529.	-1.24E-05	4035.	4.64E+08	318.1876	41630.	0.00
7.2250	-0.00777	29137.	-4202.	5.66E-05	3500.	4.64E+08	322.9760	42393.	0.00
7.3100	-0.00768	25019.	-3871.	1.16E-04	3005.	4.64E+08	324.9622	43155.	0.00
7.3950	-0.00753	21240.	-3540.	1.67E-04	2551.	4.64E+08	324.3974	43918.	0.00
7.4800	-0.00734	17797.	-3211.	2.10E-04	2138.	4.64E+08	321.5270	44680.	0.00
7.5650	-0.00711	14690.	-2885.	2.46E-04	1765.	4.64E+08	316.5880	45443.	0.00
7.6500	-0.00684	11912.	-2566.	2.75E-04	1431.	4.64E+08	309.8067	46206.	0.00
7.7350	-0.00655	9456.	-2254.	2.98E-04	1136.	4.64E+08	301.3960	46968.	0.00
7.8200	-0.00623	7314.	-1952.	3.17E-04	878.5196	4.64E+08	291.5537	47731.	0.00
7.9050	-0.00590	5475.	-1660.	3.31E-04	657.6212	4.64E+08	280.4608	48494.	0.00
7.9900	-0.00556	3927.	-1380.	3.41E-04	471.7734	4.64E+08	268.2795	49256.	0.00
8.0750	-0.00520	2659.	-1113.	3.48E-04	319.4539	4.64E+08	255.1526	50019.	0.00
8.1600	-0.00484	1657.	-859.9091	3.53E-04	199.0219	4.64E+08	241.2017	50781.	0.00
8.2450	-0.00448	905.1982	-621.3674	3.56E-04	108.7342	4.64E+08	226.5273	51544.	0.00
8.3300	-0.00412	389.2429	-398.1227	3.57E-04	46.7566	4.64E+08	211.2073	52307.	0.00
8.4150	-0.00375	93.0278	-190.8054	3.58E-04	11.1747	4.64E+08	195.2974	53069.	0.00
8.5000	-0.00339	0.00	0.00	3.58E-04	0.00	4.64E+08	178.8308	26916.	0.00

* This analysis computed pile response using nonlinear moment-curvature relationships. Values of total stress due to combined axial and bending stresses are computed only for elastic sections only and do not equal the actual stresses in concrete and steel. Stresses in concrete and steel may be interpolated from the output for nonlinear bending properties relative to the magnitude of bending moment developed in the pile.

Output Summary for Load Case No. 1:

```
Pile-head deflection             =     1.00387707 inches
Computed slope at pile head      =    -0.02115479 radians
Maximum bending moment           =        189344. inch-lbs
Maximum shear force              =         -6868. lbs
Depth of maximum bending moment  =     4.42000000 feet below pile head
Depth of maximum shear force     =     6.20500000 feet below pile head
Number of iterations             =             13
Number of zero deflection points =              1
```

Summary of Pile-head Responses for Conventional Analyses

Definitions of Pile-head Loading Conditions:

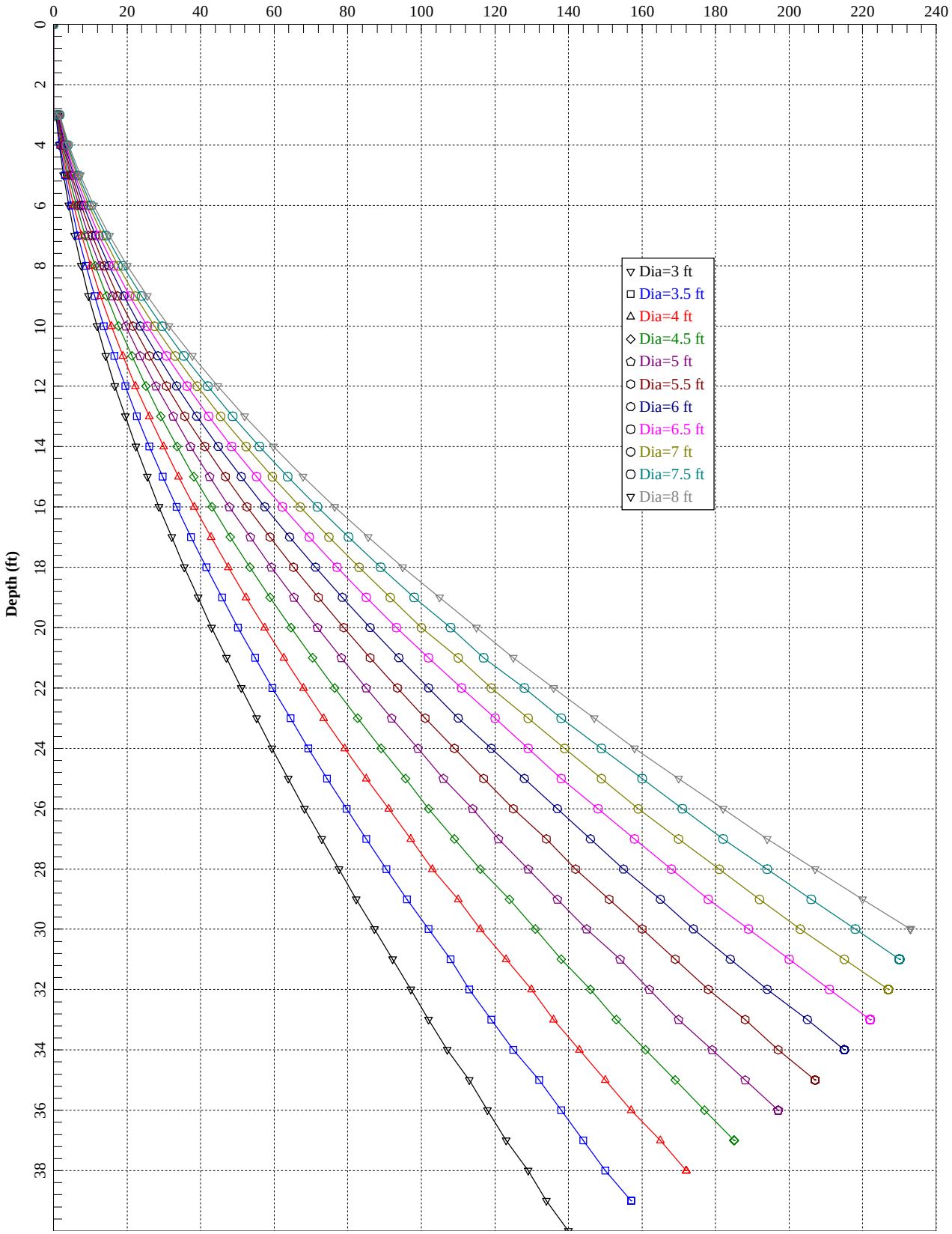
Load Type 1: Load 1 = Shear, V, lbs, and Load 2 = Moment, M, in-lbs
Load Type 2: Load 1 = Shear, V, lbs, and Load 2 = Slope, S, radians
Load Type 3: Load 1 = Shear, V, lbs, and Load 2 = Rot. Stiffness, R, in-lbs/rad.
Load Type 4: Load 1 = Top Deflection, y, inches, and Load 2 = Moment, M, in-lbs
Load Type 5: Load 1 = Top Deflection, y, inches, and Load 2 = Slope, S, radians

Load Case No.	Load Type 1	Pile-head Load 1	Load Type 2	Pile-head Load 2	Axial Loading lbs	Pile-head Deflection inches	Pile-head Rotation radians	Max Shear in Pile lbs	Max Moment in Pile in-lbs
1	V, lb	4180.	M, in-lb	0.00	0.00	1.0039	-0.02115	-6868.	189344.

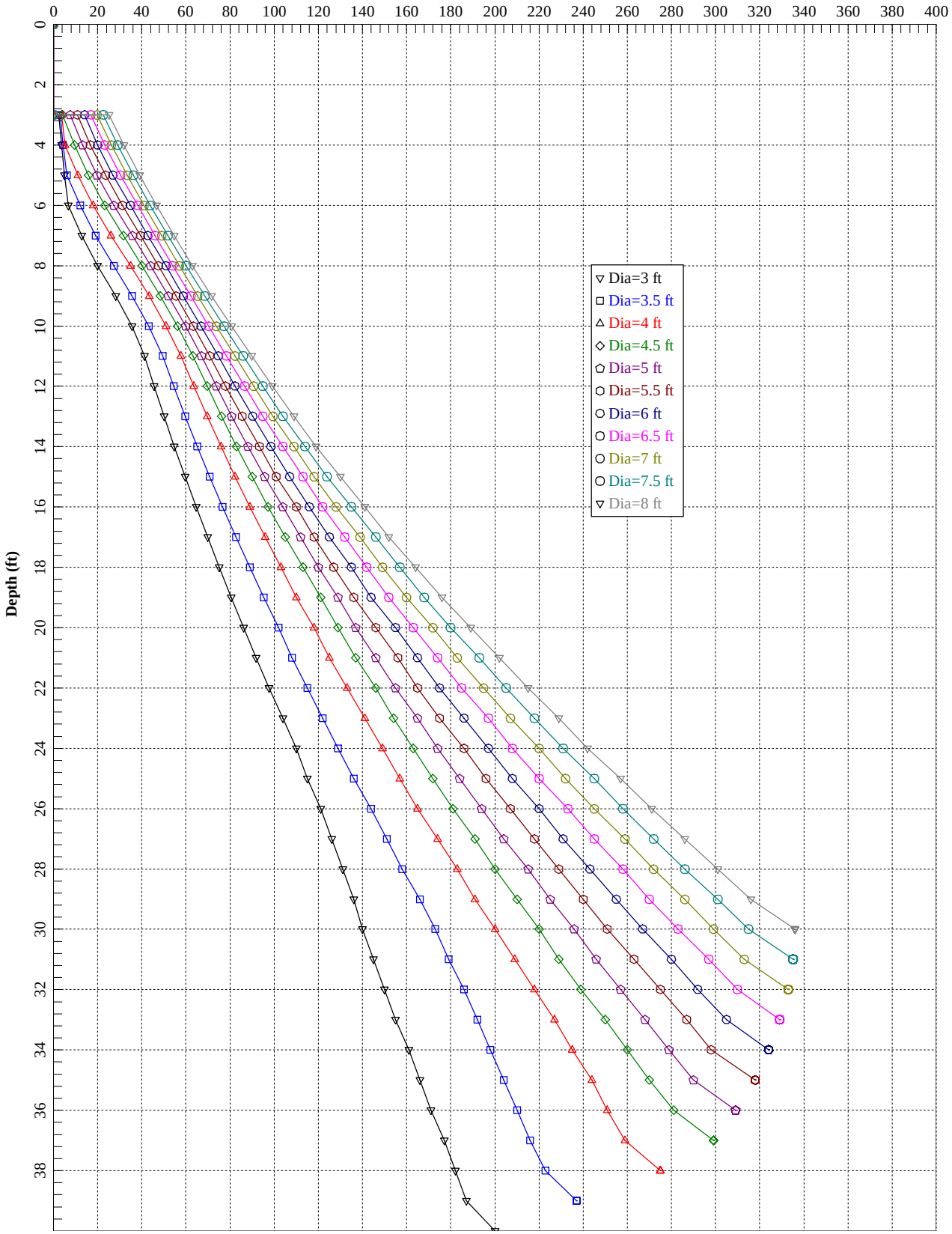
Maximum pile-head deflection = 1.0038770673 inches
Maximum pile-head rotation = -0.0211547904 radians = -1.212080 deg.

The analysis ended normally.

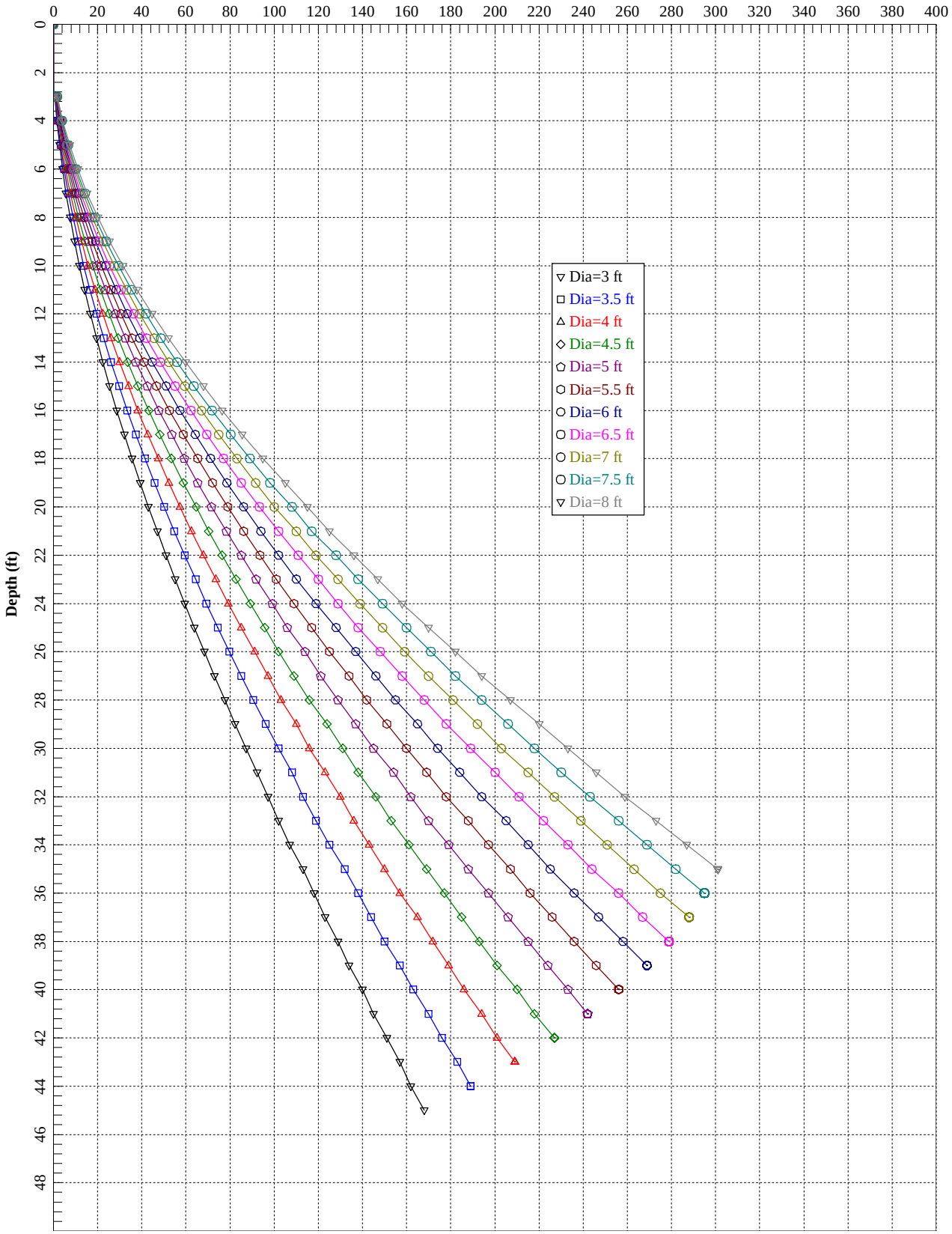
Substation Allowable Side Resistance
Side Resistance/F.S. (tons)



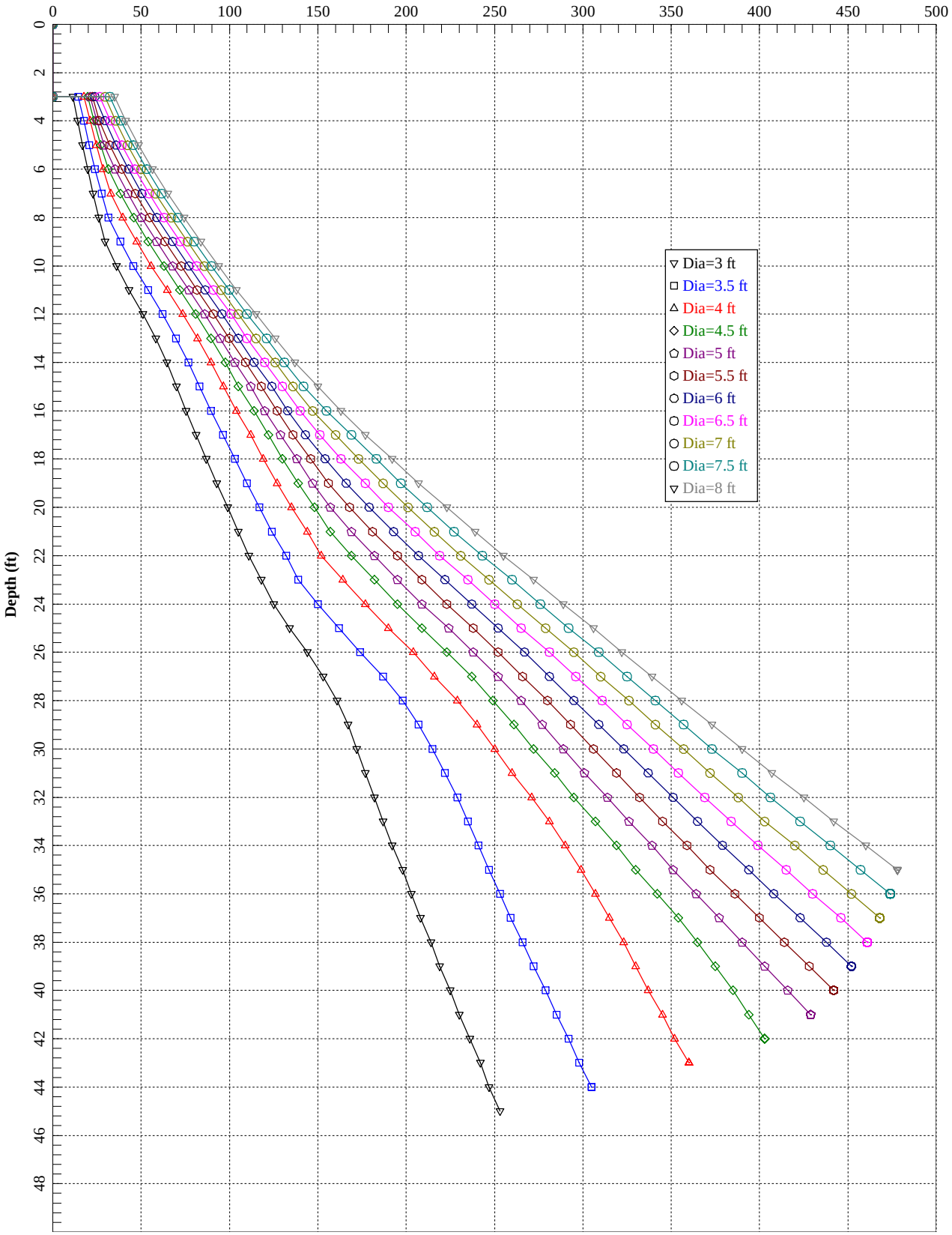
Substation Allowable Downward Capacity
Total Resistance/F.S. (tons)



Transmission Tower Allowable Side Resistance
Side Resistance/F.S. (tons)



Transmission Tower Allowable Downward Capacity
Total Resistance/F.S. (tons)



January 27, 2022

NextEra Energy Resources LLC
700 Universe Boulevard
Juno Beach, Florida 33408

Attn: Mr. Kenneth Spranzo
P: (561) 304-5686
E: Kenneth.Spranzo@nextaenergy.com

Re: Fault Hazard Evaluation – Desktop Study (revised)
Desert Peak 230-34.5kV Collector Substation, BESS, and Transmission
Palm Springs, California
Terracon Project No. 60215222

Dear Mr. Spranzo:

We have completed the Fault Hazard Evaluation services for the above referenced project. This study was performed in general accordance with our proposal dated September 20, 2021. This report presents the findings of the geological evaluation of faulting based on publications research to address considerations of the Alquist-Priolo Earthquake Fault (AP) zoning of the site and provides findings and conclusions concerning potential for surface fault rupture and mitigation for construction of the proposed project.

A. PROJECT INFORMATION

ITEM	DESCRIPTION
Location	The project occupies a square-shaped parcel located near the intersection of Dillon Rd and Diablo Rd near Palm Springs and Desert Hot Springs, Riverside County, California. 33.92863°N 116.57527°W (approximate center)
Existing Improvements	Based on our review of aerial imagery, the majority of the parcel appears to be undeveloped, with portions being utilized by five (5) large wind turbine generators (WTG). The eastern portion of the site is currently a graded gravel-surfaced parking/laydown area. Several transmission lines also traverse the site.
Project Description	It is our understanding that the Client intends to develop a 230-34.5kV Substation, Battery Energy Storage System (BESS), and overhead transmission line point of connection. The proposed Desert Peak parcel will occupy approximately 60 acres.
Existing Topography (from USGS 1978)	The site occupies an alluvial apron that slopes southeastward from approximate elevation 1055 feet at the northwest corner to 820 feet at the southeast corner. The native sediments within the site include areas of dissected older alluvial fan sediments.

ITEM	DESCRIPTION
Anticipated Geologic Hazards	The project parcel is traversed by an Alquist-Priolo Earthquake Fault Zone designated by the State of California for the South Branch of the San Bernardino Mountains Section - San Andreas Fault Zone. Furthermore, the County of Riverside has mapped the fault zone as the San Andreas Fault Zone traversing the site from the Northwest corner to the midpoint of the eastern boundary.

B. Site Description and Geologic Setting

The subject site consists of a desert land parcel within the city limits of Palm Springs, California. The parcel is bounded on the south by Dillon Road, the east by Melissa Lane, the north by 16th Avenue, and the west by Diablo Road. Several wind turbines with associated access roads are located with the parcel. Parcels to the west include scattered residential properties. Parcels to the south and east are developed with wind turbines. The Devers Substation is located north of the project boundary. An AP Fault zone trends through the northern half of the project boundary footprint (see attached AP Map). Mapped and documented traces of the San Andreas Fault Zone cross the site. Portions of the site and adjacent parcels have previously been investigated for fault rupture hazard as documented in prior consultant's reports.

The San Andreas fault zone (SAFZ) extends from southeastern California to the offshore area north of San Francisco and forms a land-based transform tectonic margin with the potential to affect a large portion of the highly populated west coast of the United States. The site region lies at the eastern end of the SAFZ section termed the 'Big Bend' in reference to a change in trend of the zone from north-northwest to northwest through a region extending from the Palm Desert area westward to the Tehachapi area. The Big Bend is characterized as a region of transpression resulting in crustal uplift forming the Transverse Ranges of southern California. In the site area, the SAFZ includes two major mapped splays that include the North and South branch segments of the San Bernardino Mountains section. The North and South Branch faults are also known as the Mission Creek and Banning splays, respectively. Both splays are considered Holocene active faults. The South Branch segments traverse the site as a zone of west-northwest striking subparallel surface breaks. Based on trenching studies within and near the site, sense of slip is primarily right-lateral strike slip but includes a significant component of compression/thrust offset. This is illustrated by a short north-northeast striking fault located north of the site known as the Devers Hill Fault. The Devers Hill Fault is interpreted to form within a zone of compression between the North and South Branch faults.

The site is located in a highly active seismic region as attested by the magnitude 6.0 1986 North Palm Springs earthquake and paleoseismic data from studies along the SAFZ. The North Palm Springs earthquake caused damage due to strong ground shaking to insulators and other components in the Devers Substation located adjacent to the northern site boundary. The following table summarizes selected historical seismicity in the site region.

Event	Year	Magnitude	Distance to Site (miles)	Direction
NW of San Bernardino	1812	7.5	68	NW
Cajon Pass area	1899	6.4	60	WNW
WSW of Morongo Valley	1944	5.2	8.6	NW
NNE of Desert Hot Springs	1947	5.3	7	NE
Tehachapi	1952	7.3	155	WNW
NNE of Thousand Palms	1992	6.1	15	E
Landers	6/28/1992	7.3	20	NE
Big Bear	6/28/1992	6.4	24	NW
North Palm Springs	1986	6.0	5	NNW

A scenario earthquake model for the San Andreas fault with an epicenter located 1¼ mile north of the site and magnitude of 7.64 yields an estimated PGA value of 0.56g for the site (BSSC 2014).

Prior geologic mapping of the site region includes Dibblee (2004, 1982), Proctor (1968) and works summarized in Fault-Evaluation Reports (FER) 086 and 185. The site is underlain by sediments that include younger valley alluvium (Qal) and dissected older alluvium (Qc – Cabezon Fanglomerate) mantled by a thin veneer of terrace deposits (Qt) (Proctor, 1968). Dibblee (2004) combines units Qt and Qc of Proctor into a single older alluvium unit (Qoa). Site-specific geologic mapping is also available in prior consultant's reports. A **Geologic Map** based on the Dibblee map is attached.

Fault-Evaluation Report 086 includes information related to designation of the AP zone in the Desert Hot Springs quadrangle (CDMG/Smith, 1979). Geologic mapping and aerial photographic features are used by the State of California to define zoned traces of the San Andreas Fault. Numerous scarps and fault features are documented in FER 086 within the site and adjacent areas along the South Branch fault trace. These include offset of Holocene age alluvium and a compression ridge in the eastern portion of the site that forms a wide zone of faulting. The AP fault traces designated on the Official Map for the Desert Hot Springs map quadrangle are shown on the attached **AP Map** detail. Faults are shown within the footprint of the proposed BESS system in the eastern portion of the site.

Fault Evaluation Report 185 (Kahle and others, 1987) documents surface rupture features associated with the 1986 North Palm Springs earthquake. A majority of such features were noted along the South Branch (Banning) splay even though the epicenter was closer to the North Branch fault. Of interest were observations of ground failure focused along the mapped Banning (South Branch) fault trace resulting in extensional cracks in surface soils and compressional features indicating reverse displacement east of Highway 62. The following is a description of the Banning fault zone features adopted from Kahle and others (1987):

> *That the observed ruptures may reflect a relatively wide zone of complex faulting is suggested by two other lines of evidence. First, the geomorphic evidence for recent faulting locally suggests a relatively wide zone with several faults dominated by right-lateral displacements. Second, and perhaps more compelling, are the trench logs of Gary Rasmussen (1981, 1983) which are based on trenches excavated in Section 9 north of Dillon Road. These logs clearly show that the Banning fault is a complex zone of faults that is 50 meters to more than 100 meters wide. Although most of the faults are steeply-dipping, some dip to the south and north as gently as 17 degrees. The mismatched strata across the faults indicate that strike-slip displacement is dominant, although some faults show significant normal and reverse offsets.*

The Rasmussen (1981) trenches described above were located within the project site. The Rasmussen (1983a) trenches were located within the parcel east of the site. Rasmussen (1983b) excavated three test pits east of the site to confirm fault trends from prior investigations. Further discussion of the fault zone within the site is presented in the following section.

C. Prior Investigations

Several investigations of the AP-mapped fault zone have been performed within and near the site. We obtained consultant reports cataloged with California Geological Survey (CGS) through a web-based data portal hosted by CGS. Consultant's reports on file with the County of Riverside near the site were provided by Mr. Dan Walsh. LiDAR (light detection and ranging) hillshade model information were obtained from the B4 LiDAR Project database hosted by Ohio State University (see attached **LiDAR Map**). Trench explorations and site evaluations in the vicinity of the site are listed in the attached **Summary of AP & Consultant's Reports** table, are shown on the **Prior Investigations** and **Prior Explorations and Setbacks** maps (attached), and include the following:

- AP 2858 – within site boundary, includes three reports by Rasmussen (1981, 1983a, 1983b), includes trenches, faulting documented, setback established for occupancy structures.
- AP 1524 – east of site, includes three test pits, faults reported; location of southern fault coincides with southern AP fault trace at eastern boundary of project site. Fault location defined by south-facing scarp in topography and LiDAR model.
- GEO 2459 – parcel northeast of project site, geotechnical and fault investigations, various authors, Devers Hill fault located.
- GEO 2458 – parcel to east, various authors, multiple trenches, faults reported, setback established.

The consultant's reports and field exploration data, geologic mapping, and LiDAR model define a fault zone traversing the site along a west-northwest trend. Trench data are available for the eastern portion of the site where battery racks are planned within the AP Zone. Trench data were

not identified in the western portion of the site. The South Branch (Banning) fault zone is defined by:

- A LiDAR and topographic rise/pressure ridge up to 400 feet wide in the eastern portion of the site bounded by faults along the north and south
- Northeast-facing topographic and LiDAR modeled scarps in the northwestern portion of the site
- Post-North Palm Springs earthquake mapping reports of surface cracking near the trend of the South Branch fault near western site boundary
- Mapped offset of older alluvial sediments consistent with right-lateral strike-slip faulting
- Mapped fault locations/trends encountered in trenches and documented in prior consultant's reports.

In general, the prior explorations and establishment of setbacks are consistent with the current standard of practice for exploration and evaluation of faulting for AP fault studies.

D. Fault Rupture Potential and Project Considerations

The South Branch (Banning) fault zone is a Holocene active fault capable of surface rupture during future slip events. Modeled surface fault slip at lifeline crossings (powerlines located near the northwest corner of the site) estimated for the San Andreas Fault ShakeOut Scenario earthquake (Appendix E – USGS Open-File Report 2008-1150) is between 0.89 and 1.08 meters (2.9 to 3.5 feet). Based on estimated earthquake recurrence intervals for the SAFZ in southern California, there is significant potential for surface rupture to occur during the lifetime of the proposed project within the setback zones established by prior consultants and within approximately 100 feet of the mapped fault trace in the unexplored western portion of the site.

The approximate boundaries of previously established setback zones are depicted on the **Prior Explorations and Setbacks** map. If determination of structural setback zones becomes necessary for the project, the locations and limits of previously established setback zones, fault trenches, and observed faults should be closely established and their application to the proposed project evaluated. Exploration by trenching should be conducted for the portions of the site within the AP Zone where improvements are subject to setback and sufficient information is not now available.

As depicted on the site layout plan we note the following:

- a portion of the east battery array is within established fault setback areas
- the northern limit of the west battery array is within approximately 180 feet of a mapped AP fault
- the southern limit of the setback zones established by N.O. Anderson projects through the west battery array

Site improvements, including overhead and buried utilities, that lie within or cross through the fault zones would be subject to fault slip effects during future earthquakes along the South Branch fault that may include tensional strain, compressional strain and/or shear strain.

E. Geologic Hazards Summary

The site is located in the Desert Hot Springs topographic quadrangle that has not been evaluated by the State of California for seismic hazards. According to the County of Riverside, the site is included with an area of 'moderate' liquefaction potential. The potential for liquefaction should be considered, and if warranted, evaluated for the proposed site improvements.

The site is located in a highly active seismic region. Project design should include consideration of applicable portions of the seismic design requirements of 2019 CBC and consideration of the information documented for strong shaking of local infrastructure during the North Palm Springs earthquake.

F. 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. Natural 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 or collaboration through this system 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.

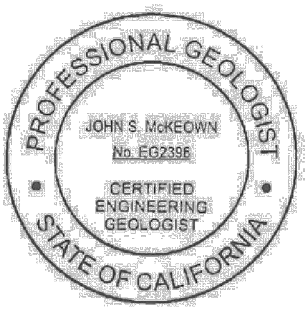
Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation 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. 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.

This report reflects the testing conducted on the site as the site existed during the preparation of, this report. However, changes in conditions can occur with the passage of time, due to natural processes or the works of man, on this or adjacent properties.

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 Consultants, Inc.

John S. McKeown, E.G. 2396
Senior Geologist



Jay J. Martin, E.G. 1529
Principal

Attachments:

- References
- AP Map Desert Hot Springs Quadrangle Detail
- County Fault Zone Map
- Geologic Map
- Prior Investigations
- Prior Explorations and Setbacks
- LiDAR Map
- Table - Summary of AP & Consultant's Reports

ATTACHMENTS

REFERENCES:

California Division of Mines and Geology, Fault Evaluation Report FER-86, dated March 21,1979.

Dibblee, T.W., Minch, J.A., 2004, Geologic map of the Desert Hot Springs quadrangle, Riverside County, California, Dibblee Geologic Foundation, Dibblee Foundation Map DF-121, 1:24,000.

Dibblee, T.W., 1982, Geologic map of the Palm Springs (15 minute) quadrangle, California, South Coast Geological Society, Inc., Geologic map SCGS-3, 1:62,500.

Gary S. Rasmussen & Associates, 1983, Engineering Geology Investigation of the NE ½ , Section 9, T3S, R4E SBB&M, North Palm Springs, California, dated June 27, 1983.

Gary S. Rasmussen & Associates, 1981, Engineering Geology Investigation 1,171 Foot (East-West) by 2,700 Foot (North-South) Rectangular Parcel Tentative Tract No. 16847, Lots 1-67, North Palm Springs, California, dated January 30, 1981.

Kahle, J.E, Hart, E.W., Borchardt, G., Manson, M.W., Surface Rupture Associated with the North Palm Springs Earthquake of July 8, 1986—Banning and Related Faults, Riverside County, California Division of Mines and Geology, Fault Evaluation Report FER-185, dated August 7, 1987.

LandMark Geo-Engineers and Geologists, 2006, Preliminary Fault Hazard Evaluation, APN 666-090-007 & 010 (9.1-acre Property), NEC Dillon Road and Karen Street, North Palm Springs, California, dated July 12, 2006.

Neil O. Anderson and Associates, 2010, Geotechnical Investigation Palm Springs Wind Farm, Interstate 10 and State Route 62, Palm Springs, California, dated July 23, 2010.

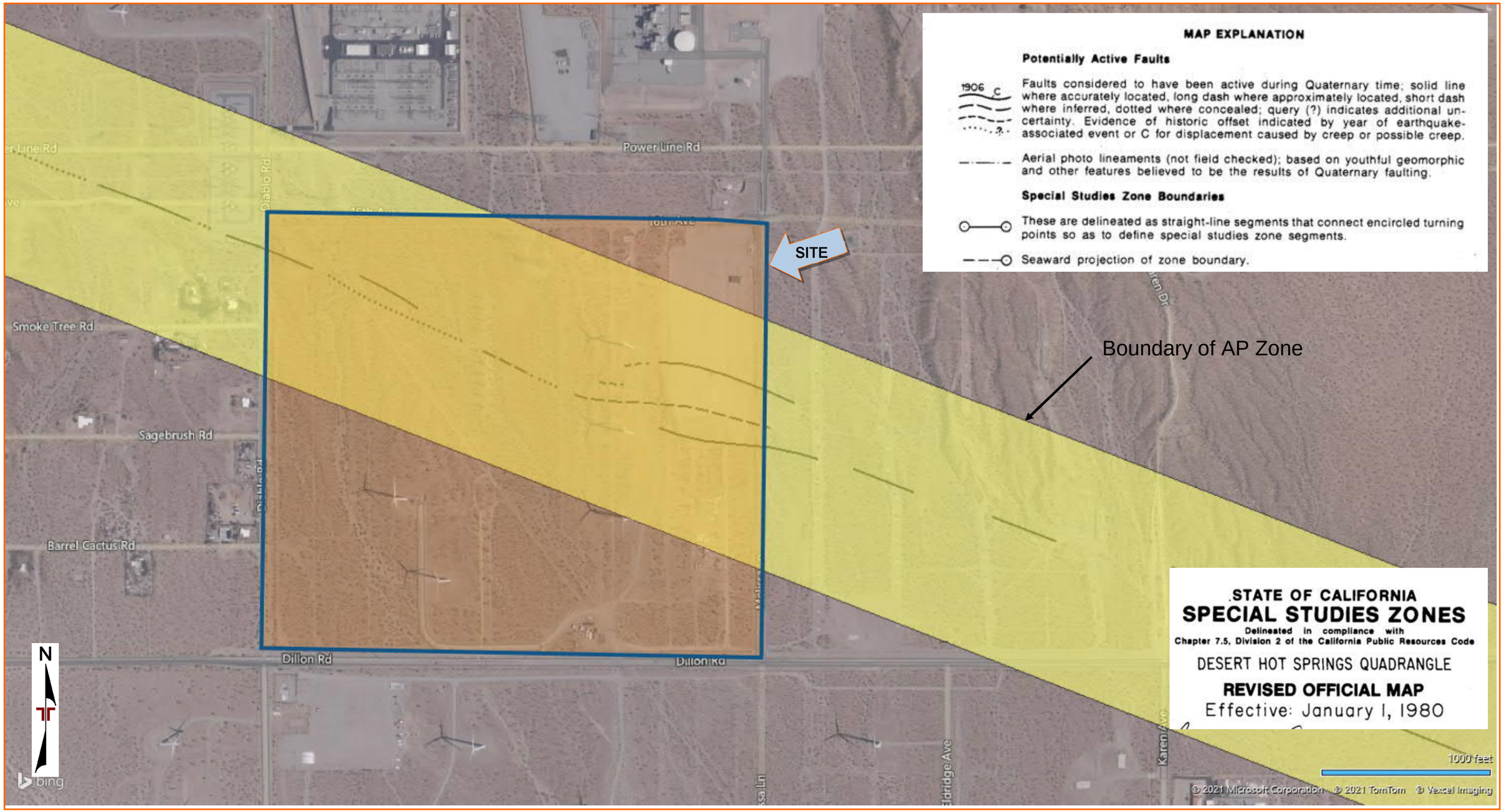
Neil O. Anderson and Associates, 2014, Subsurface Fault Investigation Update Letter Devers Fault System Westwind Wind Turbine Replacement Project, North Palm Springs, California, dated August 29, 2014.

Neil O. Anderson and Associates, 2015, Subsurface Fault Investigation Phase II Smoke Tree Repower Project Banning and Devers Fault System, North Palm Springs, California, dated August 31, 2015.

Proctor, R.J., 1968, Geology of the Desert Hot Springs – Upper Coachella Valley area, California, California Division of Mines and Geology, Special Report 94.

Smith, D.P., 1979, California Division of Mines and Geology Fault Evaluation Report FER 086, dated March 21, 1979.

Treiman, J.T., Real, C.R., Wilson, R.I., Silva, M.A., Pridmore, C.L., McCrink, T.P., Loyd, R.C. and Reichle, M.S., 2008, ShakeOut Scenario Appendix E: Fault Rupture Impacts at Areas of Lifeline Concentration, U.S. Geological Survey Open-File Report 2008-1150, CGS Preliminary Report 25E.


MAP EXPLANATION
Potentially Active Faults
1906 C
Faults considered to have been active during Quaternary time; solid line where accurately located, long dash where approximately located, short dash where inferred, dotted where concealed; query (?) indicates additional uncertainty. Evidence of historic offset indicated by year of earthquake-associated event or C for displacement caused by creep or possible creep.
Aerial photo lineaments (not field checked); based on youthful geomorphic and other features believed to be the results of Quaternary faulting.
Special Studies Zone Boundaries
These are delineated as straight-line segments that connect encircled turning points so as to define special studies zone segments.
Seaward projection of zone boundary.
SITE
Boundary of AP Zone
Power Line Rd
Smoke Tree Rd
Sagebrush Rd
Barrel Cactus Rd
Dillon Rd
Diablo Rd
Eldridge Ave
Karen Ave
N
bing
STATE OF CALIFORNIA
SPECIAL STUDIES ZONES
Delineated in compliance with
Chapter 7.5, Division 2 of the California Public Resources Code
DESERT HOT SPRINGS QUADRANGLE
REVISED OFFICIAL MAP
Effective: January 1, 1980
1000 feet
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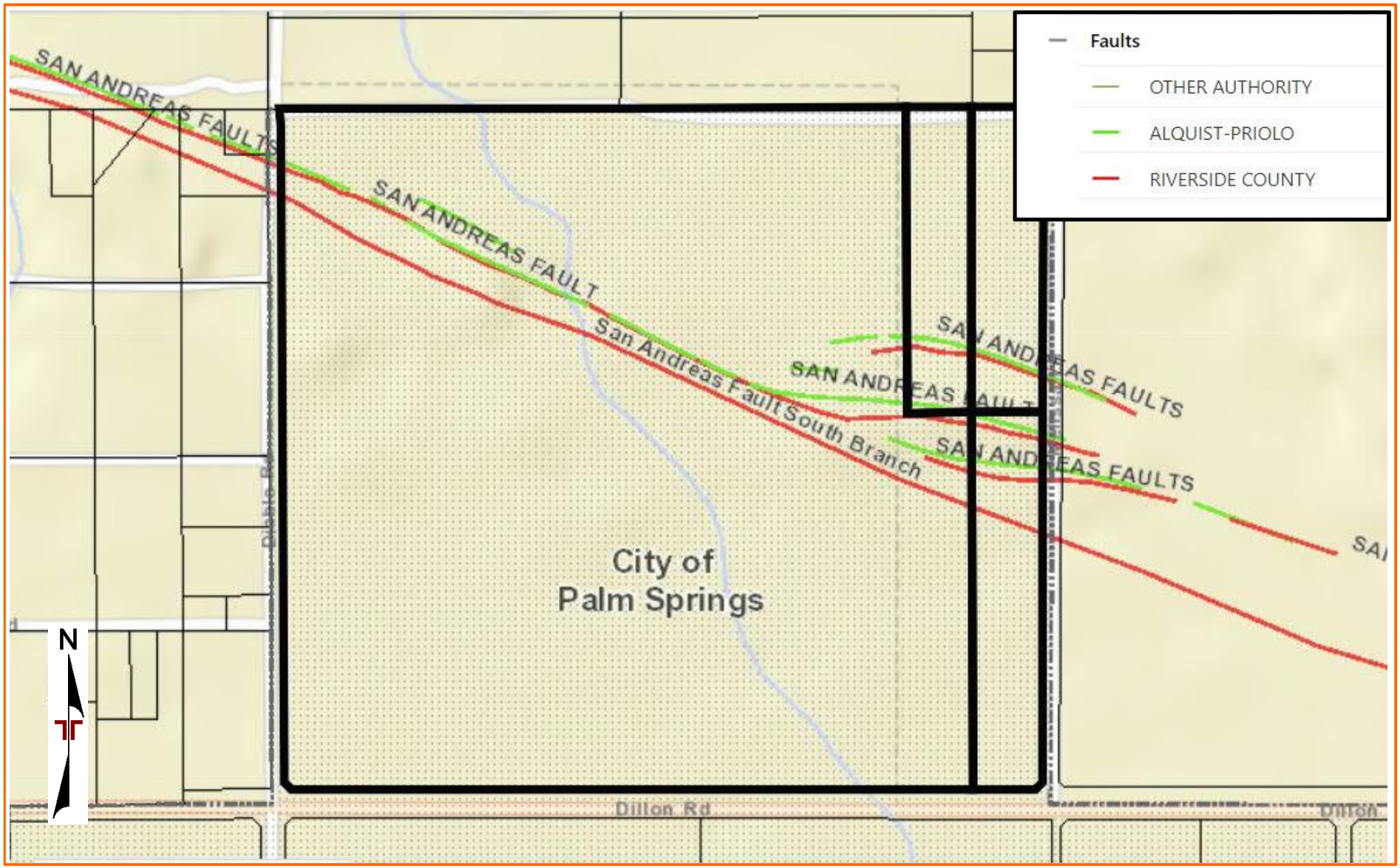
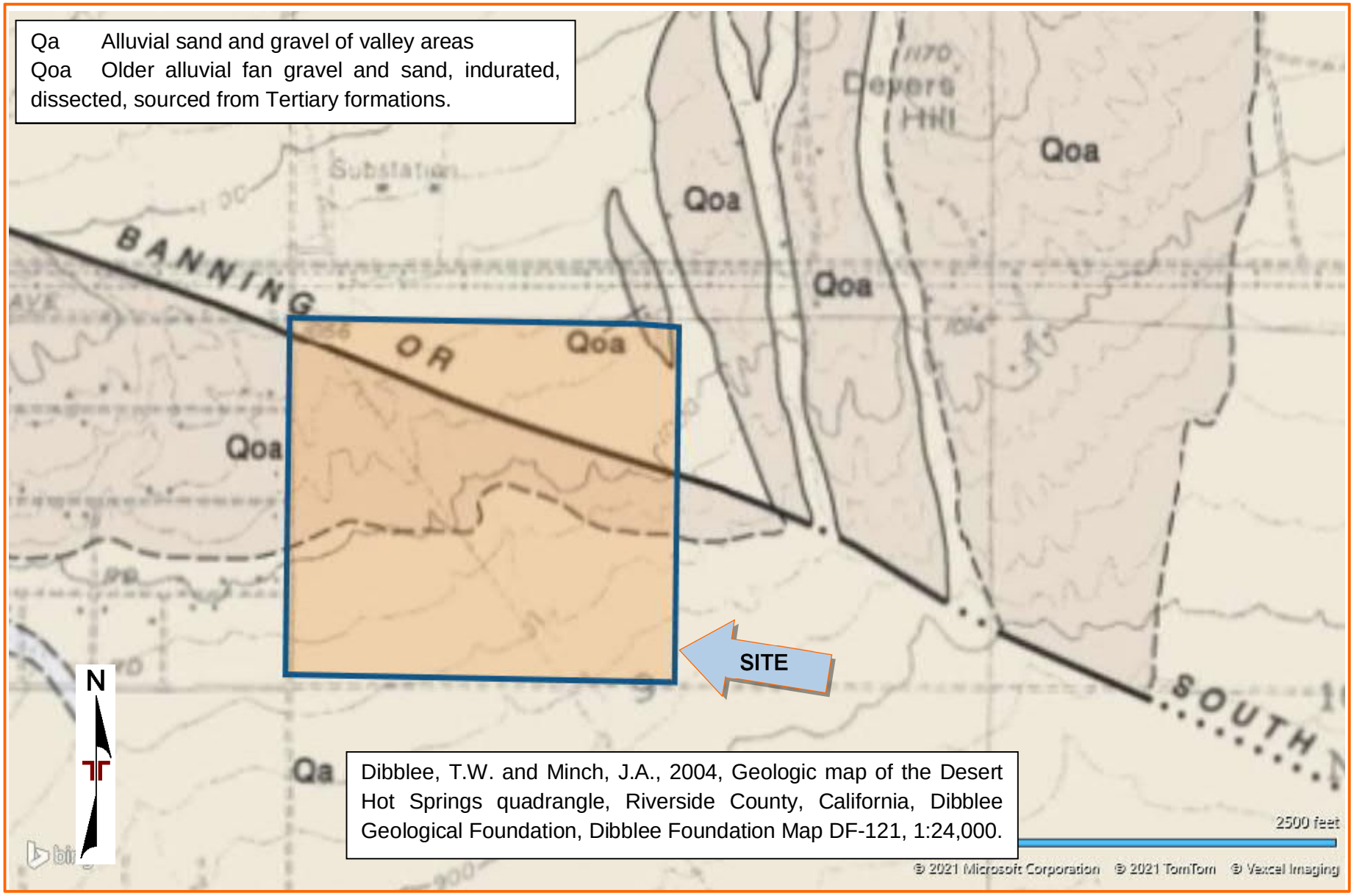

Faults
OTHER AUTHORITY
ALQUIST-PRIOLO
RIVERSIDE COUNTY
SAN ANDREAS FAULTS
SAN ANDREAS FAULT
San Andreas Fault South Branch
City of
Palm Springs
N
Dillon Rd


Qa Alluvial sand and gravel of valley areas
Qoa Older alluvial fan gravel and sand, indurated, dissected, sourced from Tertiary formations.
Qoa
Qoa
Qoa
Qoa
Qoa
Qa
BANNING
SOUTH
SITE
N
Dibblee, T.W. and Minch, J.A., 2004, Geologic map of the Desert Hot Springs quadrangle, Riverside County, California, Dibblee Geological Foundation, Dibblee Foundation Map DF-121, 1:24,000.
2500 feet
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Approximate project boundary
Ogin 3/26/2014 south
Ogin 3/26/2014 north
GEO 2459
Rasmussen 1983 (AP 1524) & GEO 2458
Rasmussen 1981 (AP 2858)
SITE
AP ZONE BOUNDARY
Orma Vista
Orma Vista Dr
Rooney Rd
2 Bunch Palms Terrace
Karen Ave
Diablo Rd
Power Line Rd
16th Ave
Sagebrush Rd
Barrel Cactus Rd
Dillon Rd
Melissa Ln
Eldridge Ave
Tiffany Way
18th Ave
N
bing
2500 feet
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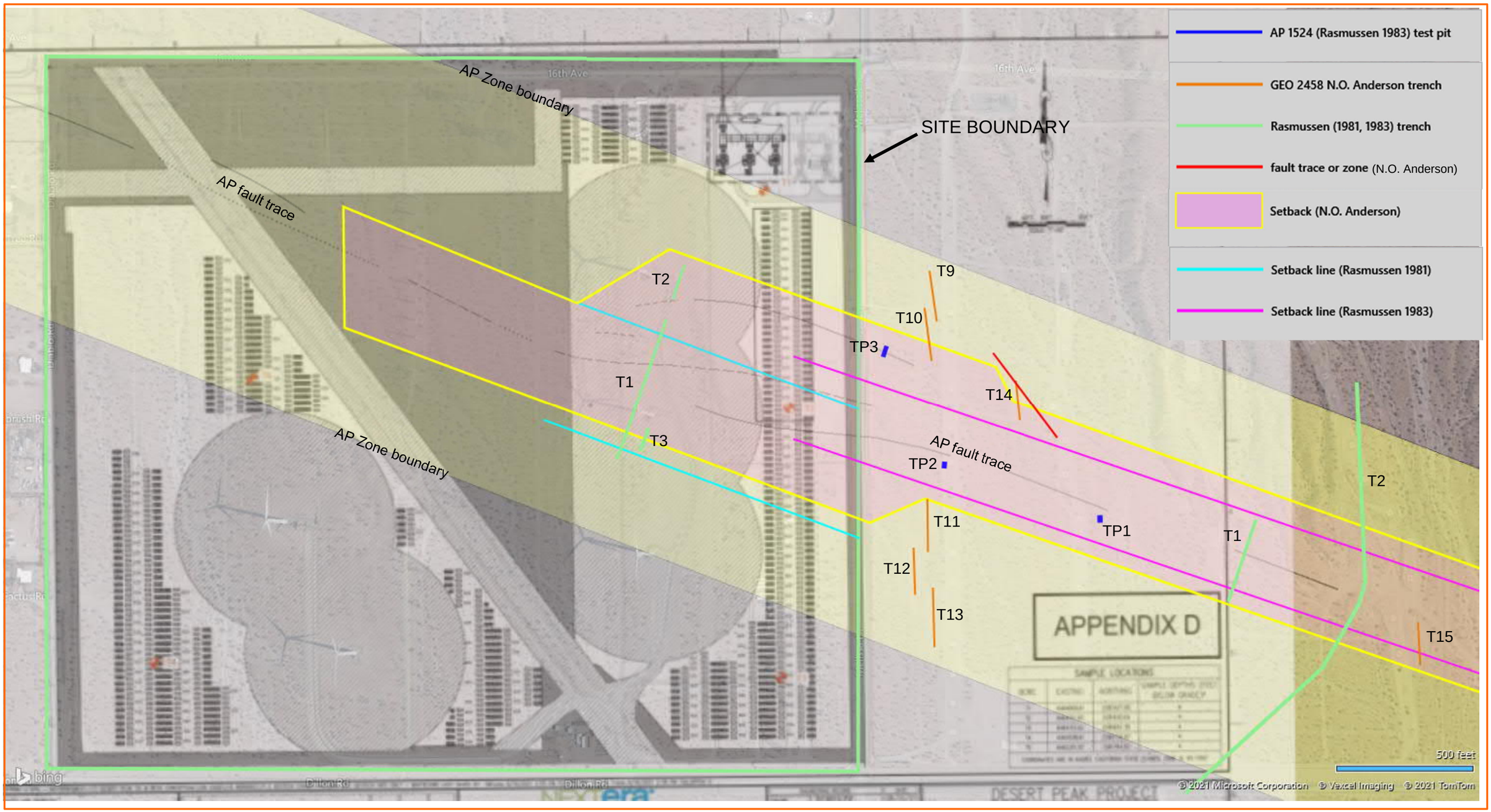
AP 1524 (Rasmussen 1983) test pit
GEO 2458 N.O. Anderson trench
Rasmussen (1981, 1983) trench
fault trace or zone (N.O. Anderson)
Setback (N.O. Anderson)
Setback line (Rasmussen 1981)
Setback line (Rasmussen 1983)
AP Zone boundary
AP fault trace
SITE BOUNDARY
16th Ave
T1
T2
T3
T9
T10
T11
T12
T13
T14
T15
TP1
TP2
TP3
APPENDIX D
SAMPLE LOCATIONS
DESERT PEAK PROJECT
Dillon Rd
500 feet
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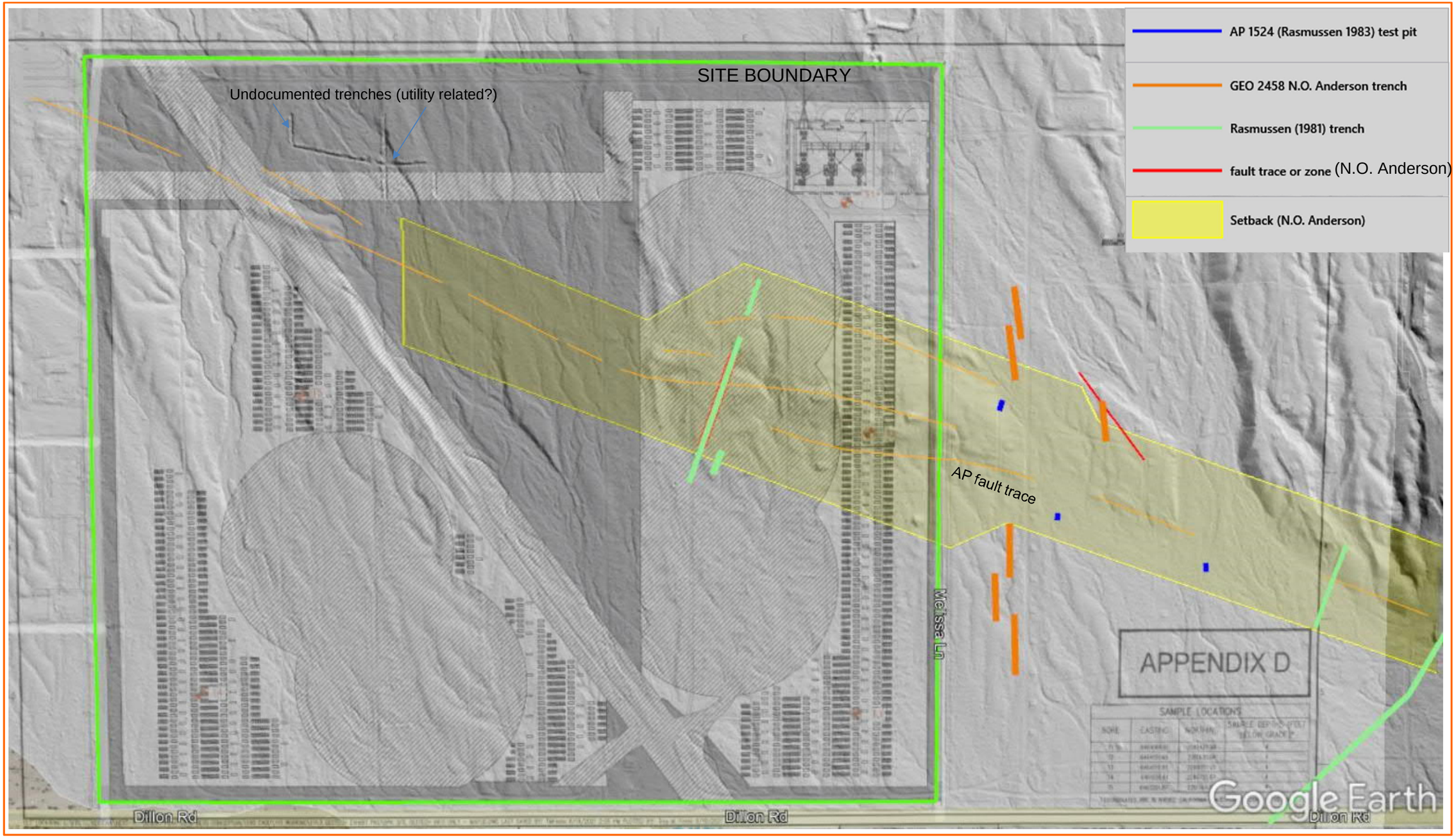
SITE BOUNDARY
Undocumented trenches (utility related?)
AP 1524 (Rasmussen 1983) test pit
GEO 2458 N.O. Anderson trench
Rasmussen (1981) trench
fault trace or zone (N.O. Anderson)
Setback (N.O. Anderson)
AP fault trace
Melissa Ln
APPENDIX D
SAMPLE LOCATIONS
Dillon Rd
Dillon Rd
Dillon Rd
Google Earth

Summary of AP & Consultant's Reports					
Riverside County GEO File no.	Report Date	Author	Site	Trenches	Comments
02459	6/28/2013	Tetra Tech	Northern Parcel	N	GI report. Devers Hill fault. Low surface rupture potential for turbine locations
02459	3/26/2014	Ogin	north and south parcels	N	GI report. Cover two separate parcels. Recommend no turbines on active faults.
02459	8/29/2014	N.O. Anderson	northern parcel only	6 trenches	Fault study for Devers fault. NW directed thrusting in T1 thru T3. back thrust in T4 indicating compressional feature. Note: the Devers is a NE trending feature between WNW trending strike slip faults.
02458	7/29/2015	N.O. Anderson	Jaques property	N	GI report. Revision to sec. 2.3.
02458	8/31/2015	N.O. Anderson	Phase II Smoketree Repower Project	15 trenches	fault study. Original report. Same as below. The file included text revisions stapled and signed with same date as original report.
02458	8/31/2015	N.O. Anderson	northern and southern sites (same report as above)	15 trenches	fault study. Revision to sec. 3.5 (aerials) and 3.11 (seismic design parameters). North boundary same as Tetra Tech 2013. southern boundary same as Ogin south. T 14 fault is south-directed very low angle thrust oriented oblique to Banning trend and may be conjugate to Devers. Not evaluated further by NOA due to no structures proposed. we can assume this fault may continue past the north end of T9 for planning purposes.
AP File No.	Report Date	Author	Site	Trenches	Comments
2858	1/30/1981	Rasmussen	East 1/2 of NW1/4 of Section 9. Lots 1-67 of TT 16847	3 trenches	portion of current site (east of Rasmussen 1983). Faulting documented. Width of fault zone ~320 feet on site. Setback zone established.
2858	7/19/1983	Rasmussen	West 1/2 of NW1/4 of Section 9.	no trenches. Field reconnaissance only	portion of current site (west of Rasmussen 1981). Banning (South Branch) fault crosses site and defined by norht-facing scarp. No setback for wind turbine project.
2858	7/27/1983	Rasmussen	West 1/2 of NW1/4 of Section 9.		Addendum to 7/19/1983 report. Specifies no human occupancy structures planned. No setback recommended for wind turbines.
1524	6/27/1983	Rasmussen	NE 1/4 of Section 9	3 test pits	Engineering Geology Investigation. Cite Proctor (1965) trace for location of Banning fault. Recovered locations of prior trenching from Rasmussen (1981) study. Described width of faulting as 340 feet.