Appendix 21-1:

Preliminary Geotechnical Engineering Report

Preliminary Geotechnical Engineering Report

Garnet Solar
Cayuga County, New York
May 20, 2021
Terracon Project No. J5205196

Prepared for:
NextEra Energy Resources
Juno Beach, FL

Prepared by:
Terracon Consultants - NY, Inc.
Rochester, New York

May 20, 2021

NextEra Energy Resources
700 Universe Boulevard
Juno Beach, FL 33408

Attn: Ms. Amanda Klaristenfeld – Project Manager
P: (561) 694 4529
E: Amanda.Klaristenfeld@nexteraenergy.com

Re: Preliminary Geotechnical Engineering Report
Garnet Solar
Town of Conquest
Cayuga County, New York
Terracon Project No. J5205196

Dear Ms. Klaristenfeld:

We have completed the Preliminary Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PJ5205196 dated July 21, 2020. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of solar panel foundations, substation foundations, unpaved access roads and ancillary structures for the proposed project.

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 - NY, Inc.

Zeru B. Kiffle, E.I.T.
Staff Engineer

Michele A. Fiorillo, P.E.
Geotechnical Department Manager

SME Review By: James M. Jackson, P.E. (FL)

REPORT TOPICS

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

Note: Refer to each individual Attachment for a listing of contents.

REPORT SUMMARY

Topic [1]	Overview Statement [2]
Project Description	The approximately 830-acre site is to be developed with a 200-megawatt (MW) solar photovoltaic electric generating facility.
Geotechnical Characterization	In general, the borings encountered glacial till and glacio-lacustrine deposits (mainly silt, sand and clay soils) underlain by weathered bedrock to an explored maximum depth of about 50 feet.
Pile Load Testing	This section provides the results of the full-scale compression, uplift, and lateral pile load testing.
PV Array	Based on preliminary information, solar panel racking systems and other miscellaneous structures may be supported on driven steel piles. Shallow or mat foundations may also be used for support of miscellaneous structures.
Substation	The proposed substation structures may be supported on drilled shaft or shallow foundations using the soil properties presented in this section. Other ancillary structures may be supported on mat/slab foundations or spread footings.
Access Roads	Substation Access Road: ■ 6 to 12 inches of Aggregate Base potentially stabilized with geogrid. Array Access Roads: ■ 6 inches of Aggregate Base over compacted subgrade.
General Comments	This section contains important information about the limitations of this geotechnical engineering report.

1. If the reader is reviewing this report as a pdf, the topics above can be used to access the appropriate section of the report by simply clicking on the topic itself.
2. This summary is for convenience only. It should be used in conjunction with the entire report for design purposes.

Preliminary Geotechnical Engineering Report

Garnet Solar
Town of Conquest
Cayuga County, New York

Terracon Project No. J5205196

May 20, 2021

INTRODUCTION

Terracon Consultant-NY, Inc. (Terracon) is pleased to submit this preliminary report detailing the completed pile load testing and geotechnical engineering services performed for the proposed 200-Megawatt (MW) AC photovoltaic (PV) solar power facility to be located in the Town of Conquest, Cayuga County, New York. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Site preparation and earthwork
- Thermal resistivity
- Unpaved access roads
- Pile load test results
- Groundwater conditions
- Foundation design and construction
- Electrical resistivity for grounding design
- Seismic Considerations

Our preliminary geotechnical engineering scope of work for this phase of the project included the following:

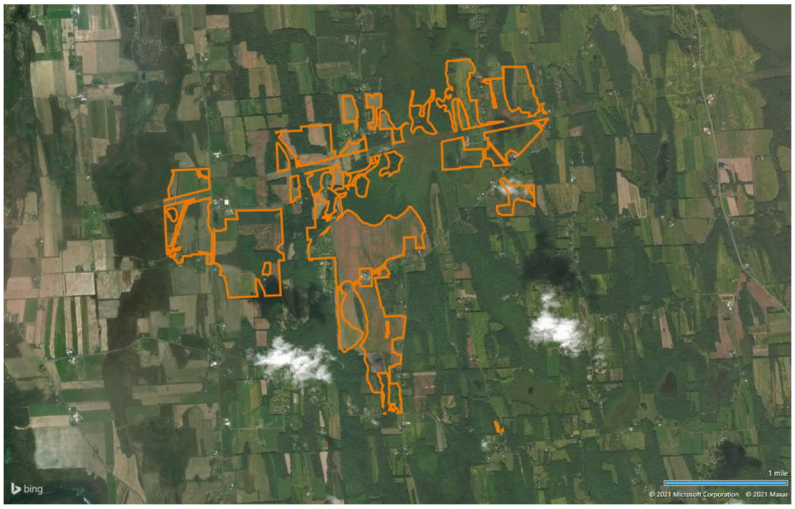
- Drilling 24 SPT borings (GB-B1 through GB-24) within solar array areas and three SPT borings (GBS-1 through GBS-3) within the substation area to depths ranging from approximately 18 to 49.5 feet below the existing ground surface (bgs).
- Test pits (GTP-1 through GTP-12) completed at 12 locations to depths ranging from 6 to 11 feet.
- Pile load testing at 15 locations with groups of three piles. This included 30 axial tension tests, 30 lateral load tests, and 15 axial compression tests.
- Field soil electrical resistivity testing at 13 locations within the solar array and substation areas.
- Laboratory thermal resistivity dry-out curve testing conducted on bulk and undisturbed (tube) samples obtained from 10 locations within the solar array and substation areas. The samples were obtained from depths of approximately 1 to 4 feet bgs.
- Laboratory corrosion tests performed on bulk samples obtained at 16 locations within the solar array and substation areas from depths of approximately 1 to 4 feet BGS.
- Laboratory California Bearing Ratio (CBR) testing on bulk samples obtained at three locations from depths of approximately 1 to 4 feet bgs;

- Infiltration tests at 10 locations within the solar array and substation areas to a depth of about 5 feet bgs.
- Monitoring wells at seven locations within the solar array and substation areas.
- Laboratory classification and index property testing of soil samples;
- Preparation of this report.

The site location and locations of the borings and test pits are shown on the Plans (Exhibit A-001 through A-003) in **Appendix A**. The GeoModel and logs of each boring and test pit are also included in **Appendix A**. Laboratory testing results, including corrosion, performed on soil samples obtained from the borings are included in **Appendix B**. The location and results the thermal resistivity tests are provided in **Appendix C**. The location and results of the field soil electrical resistivity tests are provided in **Appendix D**. The pile load testing locations are shown on the Pile Load Test Location Plan and Analysis Zones (Exhibit E-001) in **Appendix E**. The pile load testing results are included in Appendices **F, G** and **H**.

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	The project is located in the Town of Conquest, Cayuga County, New York. Based upon the Google Earth Files received by NextEra, the site covers approximately 830 acres. The center of the overall target site is located at: ■ Latitude: 43.1328 N (approximate) ■ Longitude: -76.6259 W (approximate)  (Approximate project limits are shown by Orange lines)

Item	Description
Existing Improvements and Current Ground Cover	The proposed solar power facility is spread over a mixture of private undeveloped land and farmland.
Existing Topography (from USGS topographic maps)	A topographic site plan was not provided. Our review of USGS topographic maps indicate a gentle rolling topography, with numerous drumlins hills furnishing much of the local relief. The elevation of the project area ranges from about elevations (El.) +400 feet to +560 feet above mean sea level (amsl).

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. Our final understanding of the project conditions is as follows:

Item	Description
Information Provided	The following documents were provided by NextEra through email by July 07, 2020: ■ Scope of Work document (Garnet Solar – Geotech Investigation – SOW.doc) ■ Google Earth (kmz) file (Garnet_Buildable_Area_20200714.kmz")
Project Description	The project site will be developed as a 200-megawatt photovoltaic (PV) solar power facility spread over approximately 830 non-contiguous parcels. The actual array footprint is unknown at this time. Ultimately, the power plant will consist of solar panels installed on steel structures and various other equipment and appurtenances associated with the power plant (e.g. switchgear, transformers, inverters, overhead and underground electrical conveyance, substation, and operations and maintenance (O&M) building). The site will be accessed by 20-feet wide unpaved gravel access roads.
Proposed Construction	We anticipate the proposed project will include the construction of ground-mounted solar panels on steel racks founded on driven W-Section steel beams (W6x9 or similar). Electrical equipment and substation elements (including transmission lines) are anticipated to be supported on concrete slabs-on-grade (mat foundations), spread footings or drilled shafts.

Item	Description
Maximum Loads (Assumed)	Structural loads were not provided, but the following loads have been estimated based on our experience with similar projects using fixed rack systems: ■ Downward: 3 to 7 kips ■ Uplift: 2 kips (does not include frost heave loads) ■ Lateral: 3.5 kips ■ Slab supported substation structures: 250
Grading/Slopes	It is anticipated that the site work may involve cuts and fills within +/- 2 feet of existing grade. Localized high and low areas may require greater depths/heights of cut and/or fill; however, a site grading plan has not been developed at this time.
Unpaved Access Roads (Based on NextEra)	We understand that access road cross sections used for construction of the project will be the responsibility of the EPC, and that only post construction traffic with an allowable rut depth of 2 inches is what we are to design for in this report. We anticipate low-volume, aggregate-surfaced and native soil access roads based on a design loading of 75,000 pounds (gross vehicle weight) and will have travel over the access roads only once per week.

SUBSURFACE CONDITIONS

Geology

Physiography

The project site is located amongst the Finger Lakes region of central New York, throughout the town of Conquest in Cayuga County; an area which rests south of Lake Ontario and east of Lake Erie (Figure 1).

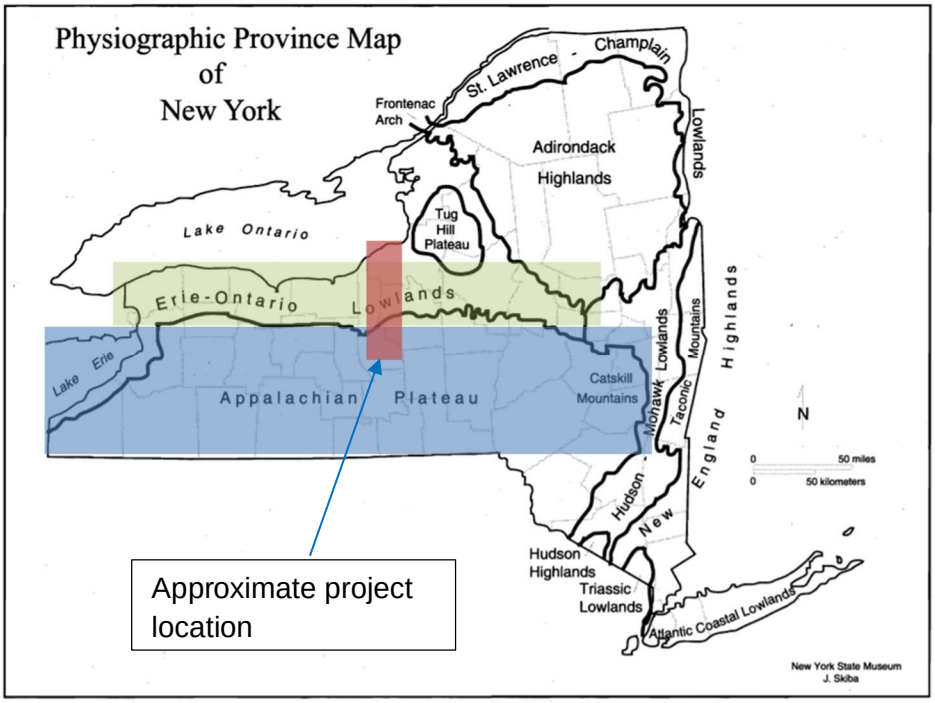


Figure 1: Geologic Map showing Cayuga County within the central Finger Lakes Region of New York. Notice the Erie-Ontario Plain (or Lowlands), is represented by areas shaded in green, while the Appalachian Plateau is recognized by areas shaded in blue, and Cayuga County, in red. Modified from Cremeens and Hart (2003).

Cayuga County extends approximately 55 miles from north to south, and from east to west, narrows in width from nearly 22 miles at the southern-most boundary, to approximately 6 miles in areas north and proximal to Lake Ontario (Hutton et al., 1971). The county is bounded by Skaneateles Lake to the east and Cayuga Lake to the west, and in the north, by Lake Ontario (Lewis et al., 1922). It comprises a total surface area of approximately 699 square miles, thereby extending across two major geological provinces; namely the Erie-Ontario Lowlands and Appalachian Plateau (Figure 2). Surface elevations amongst this region range from approximately 246 feet above sea level in areas north nearby Lake Ontario, to nearly 1,200 to 1,500 (up to 1,800) feet above sea level in areas south and proximal to the Appalachian Plateau (Lewis et al., 1922). These changes in elevation coincide with topographic expressions which vary significantly from relatively smooth, flat leveled terraces with lake-laid (i.e., swamp or marsh-like) deposits in areas north, to gently sloped surfaces comprised of rolling hills and drumlin fields in north-central areas, to comparably steep, high rolling hills with undulating relief in areas south and south-east (Lewis et al., 1922).

The town of Conquest occupies the western-most boundary of Cayuga County. The field area consists almost entirely of drumlins, or drumlin fields that are interconnected with relatively flat surface plains (also referred to as inter-drumlin regions). The Seneca River runs in an east-west direction approximately three miles south of the field area, and while it's stream and stream

tributaries occur frequently throughout this geologic region, they are noted particularly along Slayton, Spook Woods, and Lake Roads, and Cooper Street.

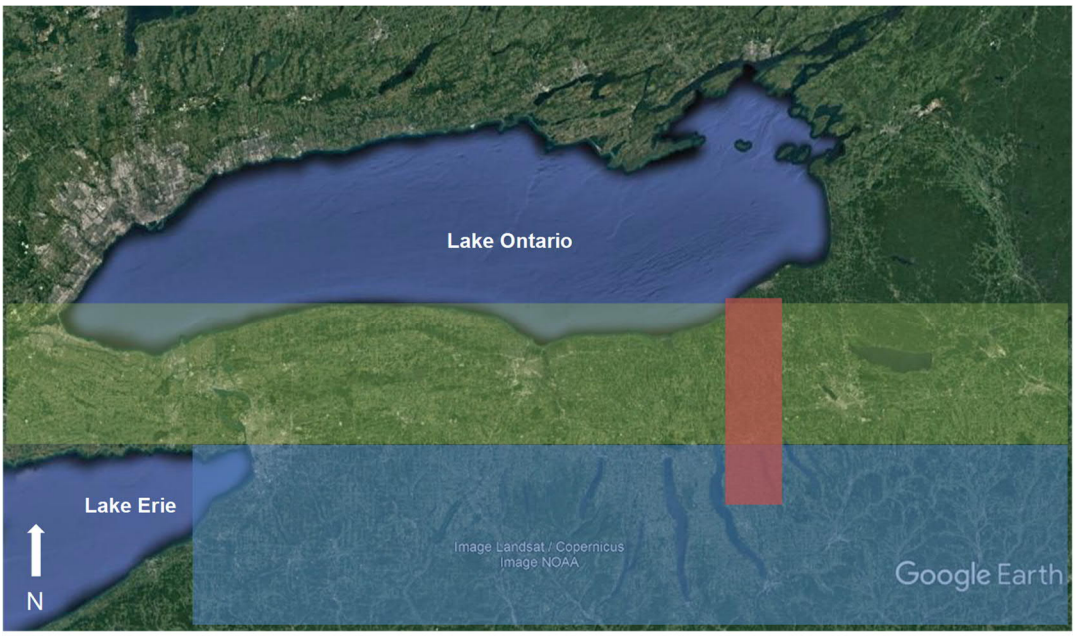


Figure 2: Locality Map depicting Cayuga County resting amongst both the Erie-Ontario Plain and Appalachian Plateau. The Erie-Ontario Plain is recognized here by the green shaded area while the Appalachian Plateau is represented by blue, and Cayuga County, by red. Notice the area lies south of Lake Ontario and northeast of Lake Erie. Note that these areas are general and intended for illustrative purposes only. Photo by courtesy of Google Earth.

Regional Geology

Current topographic expressions, and thus, the development of Cayuga County result from pre- and post-glacial processes such as ice advancement (erosion) and ice recession (deposition) which date back 300,000 years ago (Owens, 1986). These glacial processes coincide in part with those of the Late Wisconsin Ice Stage and reflect largely, a receding ice sheet presumed to have occurred approximately 10,000 years ago, thereby establishing the current topographic expressions (i.e., drumlins, kames, moraines, kettle lakes, eskers, outwash channels, and proglacial lake shorelines) observed throughout Upstate New York today (LaFleur, 1975 year; Young, 2003).

Surficial and Bedrock Geology

The underlying bedrock of Cayuga County consists primarily of black shale with occasional intervals of dolomite (Owens, 1986; USGS).

The underlying bedrock comprising Genesee County is of the Upper Silurian age, and varies in composition from shale, dolostone, salt, and gypsum (Owens, 1986; USGS). Geological maps[1] indicate surficial deposits at the project site to consist of glacial till and glacio-lacustrine deposits underlain by bedrock of shale, which comprises the Vernon Shale Formation of the Salina Group.

Typical Subsurface Profile

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual boring and test pit logs. The individual boring, test pit logs and the GeoModels can be found in Exhibit A-007 through A-052 of the **Appendix A** of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring and test pit locations, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	**Surface**	Topsoil; possible reworked soil
2	**Native Soil**	Mixtures of silt and sand; some clay and gravel; contain rock/cobble fragments; brown to orange brown, red, reddish to grayish green; loose to very dense or medium stiff to hard
3	**Weathered rock**	Weathered Shale; grayish green to gray

1. The sampling equipment utilized may preclude sampling particles larger than 2-inch in dimension. Cobble/ rock fragments and auger refusal was encountered at several locations within the depths explored, indicating the presence of possible cobbles and boulders. The native soils tend to become very dense (hard) with depth.
2. Model Layer 3 (Weathered Bedrock) was encountered in GB-1, GB-2, GB-6, GB-11, GB-14, GB-15, GB-21, GSB-1 and GSB-3 at depths ranging from about 8 to 43 feet below the existing surface.

Specific conditions encountered at each SPT boring and test pit are indicated on the individual boring and test pit logs included in **Appendix A** of this report. Stratification boundaries on the logs and profiles represent the approximate location of changes in soil/rock types; in-situ, the transition between materials may be more gradual.

[1] *Fisher, D.W., Isachsen, Y.W., and Rickard, L.V., 1970, Geologic Map of New York State, consisting of 5 sheets: Niagara, Finger Lakes, Hudson-Mohawk, Adirondack, and Lower Hudson, New York State Museum and Science Service, Map and Chart Series No. 15, scale 1: 250,000.*

Groundwater Conditions

Open boreholes and test pits were observed while drilling/excavation or at completion of sampling/excavation for the presence and level of groundwater. In addition, delayed readings were made in monitoring wells that were installed at seven locations. The readings in the monitor wells were made on March 30, 2021. The groundwater levels at each exploration location can be found on the boring and test pit logs on Exhibit A-011 through A-052 of **Appendix A** of this report. A summary of the groundwater levels at the exploration locations is presented below.

Boring/ Test Pit No.	Groundwater Level while Drilling/Excavation (ft.)	Groundwater Level at Completion of Sampling/ Excavation(ft.)	Groundwater Level from the Monitoring Well (ft.)
GB-1	10.5	7 on 1/18/2021	2.8 on 3/30/21
GB-2	10	6.5	---
GB-3	2	2	---
GB-4	Not encountered	16.5	---
GB-5	15	14	---
GB-6	Not encountered	13.7 on 1/18/2021	2.2 on 3/30/21
GB-10	Not encountered	12	---
GB-11	Not encountered	16	---
GB-12	Not encountered	5.5 on 1/16/2021	9.1 on 3/30/21
GB-13	5	14	---
GB-14	8	16	---
GB-15	4	11	---
GB-18	13	17	---
GB-19	8	5.8	---
GB-20	4	5.7	---
GB-21	2	2.2 on 1/20/2021	0 on 3/30/21
GB-23	2	3.5 on 1/19/2021	1.2 on 3/30/21
GB-24	12	6.1 on 1/19/2021	11.8 on 3/30/21
GSB-1	23	20.5	---
GSB-2	23	22	---
GSB-3	18	16.1 on 1/15/2021	12.4 on 3/30/21
GTP-4	4 (possible perched water)	---	---
GTP-9	---	4	---

Boring/ Test Pit No.	Groundwater Level while Drilling/Excavation (ft.)	Groundwater Level at Completion of Sampling/ Excavation(ft.)	Groundwater Level from the Monitoring Well (ft.)
GTP-11	3 (possible perched water)	---	---

Note: In remaining borings and test pits, groundwater was not encountered at the time of drilling/excavation or at the completion of sampling/excavation.

Based upon the subsurface conditions encountered in the borings and test pits, the soils appear to contain a high percentage of low permeability silt and clay that may release water very slowly, and it may take several days for the groundwater levels to rise within the borings.

The groundwater observations completed in the wells are generally consistent with those reported in the NRCS/USDA publications, which indicate water table at shallow depths (1 to 2 feet bgs) across the project site. For this preliminary investigation, it is our opinion that the Seasonal High Groundwater Level (SHGWL) is expected at depths ranging from less than 1 foot to a depth of 4 feet.

The Seasonal High Groundwater Level (SHGWL) is the highest sustained groundwater elevation during a typical (normal or average rainfall amount) wet season and not the peak groundwater elevation immediately following a major storm event. Therefore, the SHGWL referred to in this report is an average, high value and not necessarily a peak (upper bound) value. The SHGWL generally occurs at the end of the wet season, which typically occurs from end of February to May.

At the time of the Design Level investigation, we should include additional wells at the locations of proposed stormwater management areas, and (if feasible) leave the wells in-place for a longer period of time to allow for multiple stabilized readings.

Infiltration Testing

Ten PVC pipes were installed for infiltration testing in proximity to respective ten test borings to a depth of approximately 5 feet below the existing surface. The infiltration tests are designated as IT-Series. The infiltration test at each location was performed in general accordance with NYDEC Stormwater Management Design Manual - Appendix D. The test results, presented on Exhibit A-065 through A-067 in **Appendix A**, indicated infiltration rates ranging from about 0 to 7 inches per hour.

LABORATORY THERMAL RESISTIVITY

Laboratory thermal resistivity testing was performed by Geotherm-USA on 10 bulk and 10 undisturbed soil samples, obtained during our field exploration from a depth of approximately 1 to 4 feet below the existing ground surface and the locations are shown on Exhibit C-001 in **Appendix C**. The thermal resistivity testing was performed in general accordance with the IEEE standard

442-2017. Dry-out curves were developed from both the soil specimens compacted to 90% of the standard Proctor (ASTM D698) maximum dry density and the undisturbed soils samples recovered at each location. Each sample was incrementally dried back to 0% moisture to allow for a dry-out curve to be developed. The results of the laboratory thermal resistivity testing are presented on Exhibit C-002 to C-013 in **Appendix C**.

CORROSIVITY

Samples for corrosion testing were obtained from 16 locations within the solar array and substation areas from depths of approximately 1 to 4 feet below existing ground surface. The samples were tested for pH, water soluble sulfate, chloride content, sulfides, oxygen reduction potential, total salts, and electrical resistivity. The results of the Corrosion Series Testing are presented on Exhibit B-0019 and B-024 in **Appendix B**.

FIELD SOIL ELECTRICAL RESISTIVITY

Field measurements of soil electrical resistivity were performed by Terracon on December 10 and 11, 2020 at 13 locations within the solar arrays and substation area. Soil resistivity test locations are shown in in Exhibit D-001 in **Appendix D**. The Wenner arrangement (equal electrode spacing) was used with “a” spacings of:

- 2.5, 5, 10, 20, and 50 feet at 10 locations in the array areas
- 0.5, 1, 1.5, 2, 3, 5, 7, 10, 15, 20, 30, 45, 70, 100 feet within the substation area near GSB-3. At this location the spacing was not extended to 500 feet due to the presence of existing structures on one side and forest on the other.
- 0.5, 1, 1.5, 2, 3, 5, 7, 10, 15, 20, 30, 45, 70, 100, 250 and 500 feet near GB-17 and GTP-3. These two locations are close to the substation areas and convenient to perform a full-run test as opposed to the proposed substation area.

The “a” spacing is generally considered to be the depth of influence of the test. The testing was performed in both a north-south and an east-west orientation at each location. Results of the soil resistivity measurements are presented on Exhibit D-002 and D-014 in **Appendix D**.

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 and the International Building Code (IBC).

Based on the soil/bedrock properties encountered at the site and as described on the exploration logs and results, it is our professional opinion that the **Seismic Site Classification** is **D**. Subsurface explorations at this site were extended to a maximum depth of 49.5 feet. The site properties below the boring depth to 100 feet were estimated based on our experience and knowledge of geologic conditions of the general area. Additional deeper borings or geophysical testing may be performed to confirm the conditions below the current boring depth.

PRELIMINARY PILE LOAD TESTING (PLT) PROGRAM

We completed a preliminary pile load testing program that included:

- Pre-augering 12-inch diameter holes to a depth of 2 feet at each location to account for the anticipated depth of frozen soil.
- Directing the installation of a group of three test piles at each of 15 locations.
- Performing full-scale testing under axial compressive loads for one test pile in each group (15 tests).
- Performing full-scale testing under axial tensile loads for two test piles in each group (30 tests).
- Performing full-scale testing under lateral loads for two test piles in each group (30 tests).

These activities are further described in the following sections.

Pile Location Procedures

The field-testing locations are indicated on the attached Pile Load Test Location Plan (Exhibit E-1) in **Appendix E**. These locations were established in the field by using a hand-held GPS (accurate to about 10 feet) and existing site features as reference points. The mapped test locations should be considered accurate only to the degree implied by the means and methods used to define them.

Test Pile Installation

The test piles consisted of wide-flange, bare steel W6x9 sections. A group of three test piles were installed at each of the 15 test locations. The test piles have been identified using an alphanumeric system. The pile identification system for each location begins with “PLT” and is followed by the number corresponding to the test pile group location while the assigned letters “A”, “B”, and “C”.

The piles were advanced on March 16 to 17, 2021 with a track mounted Vermeer PD10 equipped with a hydraulic hammer to embedment depths ranging from approximately 4 to 10 feet below the ground surface (bgs). The time rate of installation was recorded with a stopwatch. The total time and average required to advance each pile to its specified embedment depth was recorded and is summarized in the following table:

Pile Location	Actual Embedment Depth (feet)	Drive Time (seconds)	Average Drive Time (seconds/foot)[1]
PLT-1A	7	207.4	43.7
PLT-1B	10	421.6	54.4
PLT-1C	7	363.5	72.7
PLT-2A	7	187.0	39.4
PLT-2B	8.3*	240.1	39.5
PLT-2C	7	218.5	43.7
PLT-4A	5.3*	240.1	72.1
PLT-4B	6.7*	240.2	51.4
PLT-4C	7	189.1	37.8
PLT-6A	7	262.9	52.6
PLT-6B	10	314.3	39.3
PLT-6C	7	115.4	24.3
PLT-9A	7	110.9	22.2
PLT-9B	6.6*	193.3	47.4
PLT-9C	7	138.6	37.0
PLT-10A	7	195.5	46.0
PLT-10B	7.3*	240.1	49.7
PLT-10C	6.3*	240.2	56.5
PLT-12A	7	104.9	21.0
PLT-12B	10	148.5	18.6
PLT-12C	7	44.7	9.9
PLT-16A	7	211.4	44.5
PLT-16B	6.5*	240.1	56.5
PLT-16C	7	159.6	31.9
PLT-17A	5.8*	240.1	62.7
PLT-17B	5.7*	240.1	65.4
PLT-17C	5.7*	240.3	65.5
PLT-18A	5.9*	240.0	61.2
PLT-18B	6.2*	240.0	57.6
PLT-18C	4*	138.7	69.3
PLT-20A	7	36.3	8.1
PLT-20B	10	171.9	22.9
PLT-20C	7	40.9	8.6
PLT-21A	5.5*	152.5	50.8
PLT-21B	8.1*	240.3	43.1
PLT-21C	7	112.9	23.8
PLT-22A	7	33.2	7.0
PLT-22B	10	138.0	17.3

Pile Location	Actual Embedment Depth (feet)	Drive Time (seconds)	Average Drive Time (seconds/foot)[1]
PLT-22C	7	53.4	10.7
PLT-23A	6.6*	240.1	72.1
PLT-23B	7*	286.1	76.3
PLT-23C	6.5*	240.1	60.0
PLT-24A	5.4*	181.6	62.2
PLT-24B	6.8*	240.1	56.5
PLT-24C	5.8*	240.2	67.1

"*" – Indicates pile encountered refusal prior to reaching the planned embedment depth.
1. Drive Rate = Total Drive Time / ((Embedment Depth - (Pre-Auger+Push Depth))

Pile installation records showing individual pile drive times per foot are included in **Appendix E**. Twenty-five (25) of the 45 piles encountered refusal, with only 1 pile encountering refusal shallower than 5 feet. For purposes of this study, pile driving refusal has been defined as 120 seconds per foot. The average drive time was about 44 seconds per foot, but the maximum was about 76.3 seconds per foot.

Testing Under Axial Tensile ("pull-out") Load

We performed testing under axial tensile load for the piles at each location using the procedures generally outlined in the following paragraphs. The testing was performed in general accordance with to ASTM D3689 – Test Methods for Deep Foundations under Static Axial (uplift) Tensile Load.

Thirty piles, two piles at each PLT location, were tested under axial tensile ("pull-out") load. The test piles with the designations "A" and "B" were tested under axial tensile load with the designation "A" being embedded to depths between 5 and 7 feet below the ground surface, and the designation "B" being embedded to depths between 6 and 10 feet below the ground surface.

The loads were applied with the reactions transferred to the ground surface at an appropriate clear distance from the test pile. A locking "E"- plate clamp was used to grip the web of each section. The load was applied using a 10-ton hydraulic pull cylinder which was connected to the E-clamp using appropriately rated chains and/or shackles. The load was applied in increments of 500 pounds (lbs.) up to a maximum vertical uplift load of 10,000 lbs with each load maintained for at least 1 minute. Testing was concluded upon reaching a displacement failure (defined as displacements exceeding 1 inch) or upon reaching a maximum load of 10,000 lbs, whichever occurred first. In addition, permanent deflection was measured by unloading and allowing the pile to rebound.

A steel reference beam supported at an appropriate clear distance from the test pile and reaction systems was used to facilitate displacement measurements. Two displacement indicators, one attached to each side of the pile, capable of recording displacement to the nearest 0.001 inch or better were used to record displacement. Loads were measured with a Dillon ED Junior Digital Dynamometer 25-kip electronic load cell. The gauges and load cell were read, and the data was recorded manually by Terracon field personnel. Results of the axial tension load tests are provided in **Appendix F**, Exhibits F-001 through F-030.

Testing Under Lateral Load

After testing under axial tensile load, the piles at each location were tested under lateral load as generally described in the following paragraphs. The testing was performed in general accordance with ASTM D3966 – Test Methods for Deep Foundations under Lateral Load.

As the test piles were installed in-line with each other, the piles were connected together to provide a reaction for the opposite post and tested simultaneously in the strong axis direction.

For lateral testing, the pair of piles were pulled towards each other and deflections of each pile were measured. The load for the lateral tests was applied at about 2 feet above the ground surface against the strong axis of the posts. The loads were applied in 500-pound increments in 5 cycles from 0 pounds to a lateral load of 7,000 pounds or until a deflection of about 1-inch was achieved. The limit of soil capacity during the lateral test is defined as movement in excess of 1-inch at 6 inches above the ground surface. Each load increment was held for at least 1 minute and the stabilized deflection reading of both indicator gauge was recorded.

Deflections were measured with digital gauges and loads were measured with a Dillon ED Junior Digital Dynamometer 25-kip electronic load cell. The gauges and load cell were read, and the data was recorded manually by Terracon field personnel. Results of the lateral load tests are provided in **Appendix G**, Exhibits G-001 through G-035.

Testing Under Axial Compressive Load

Fifteen piles were tested under axial compressive load. Please note that test piles with the designation “C” were tested under axial compressive load and were embedded to depths between 4 and 7 feet bgs.

We performed tests under axial compressive loads as generally described below. These procedures were developed with reference to ASTM D1143, *Test Methods for Deep Foundations under Static Axial Compressive Load.*

A Takeuchi TB290 excavator was mobilized to the site to provide a reaction for the applied vertical compression test loads. A load cell on the top of the pile, a hydraulic cylinder (jack) was placed above the load cell and under the excavator counter- weight.

The loads were applied in 500-pound increments up to a maximum load of 10,000 pounds, which is the maximum safe working load of our equipment. Each load increment was held for about 30 seconds and the stabilized deflection reading of both indicator gauges were recorded. The test was ended after the conclusion of the maximum load schedule or after the pile reached 1-inch axial deflection. Axial compression test results are shown in **Appendix H**, Exhibits H-1 through H-15.

Summary of Pile Load Test Results

In general, the axial compressive, tensile, and lateral loads were applied at approximately 500-pound increments. The maximum applied load during the axial compression test was 10,000 pounds or until the deflection exceeded 1 inch. The maximum applied load during the axial tension test was 10,000 pounds or until the deflection exceeded 1 inch. The maximum applied load during the lateral load test was 7,000 pounds or until the deflection exceeded 1 inch when measured at 6 inches above the ground surface.

The individual pile load test results are provided in Appendices F (uplift), G (lateral), and H (compression). The following table provides a summary of each test pile location, embedment depth, total drive time, compressive load at ¼ of an inch of vertical displacement, uplift load at ¼ of an inch of vertical displacement, and the lateral load at ½ of an inch of lateral displacement:

Pile Location	Actual Embedment Depth (feet)	Drive Time (seconds)	Average Drive Time (seconds/foot)	Uplift Load at ¼ of an inch Displacement (lbs.)	Lateral Load at ½ of an inch Displacement (lbs.)	Compressive Load at ¼ of an inch Displacement, (lbs.)
PLT-1A	7	207.4	43.7	4,900	1,750	--
PLT-1B	10	421.6	54.4	9,500	2,300	--
PLT-1C	7	363.5	72.7	--	--	>10,000
PLT-2A	7	187.0	39.4	5,500	2,050	--
PLT-2B	8.3	240.1	39.5	5,050	2,050	--
PLT-2C	7	218.5	43.7	--	--	6,250
PLT-4A	5.3	240.1	72.1	>10,000	2,450	--
PLT-4B	6.7	240.2	51.4	8,350	2,150	--
PLT-4C	7	189.1	37.8	--	--	>10,000
PLT-6A	7	262.9	52.6	3,500	1,850	--
PLT-6B	10	314.3	39.3	6,600	2,750	--
PLT-6C	7	115.4	24.3	--	--	>10,000
PLT-9A	7	110.9	22.2	3,100	1,900	--
PLT-9B	6.6	193.3	47.4	5,600	1,450	--
PLT-9C	7	138.6	37.0	--	--	>10,000

Pile Location	Actual Embedment Depth (feet)	Drive Time (seconds)	Average Drive Time (seconds/foot)	Uplift Load at ¼ of an inch Displacement (lbs.)	Lateral Load at ½ of an inch Displacement (lbs.)	Compressive Load at ¼ of an inch Displacement, (lbs.)
PLT-10A	7	195.5	46.0	7,900	1,850	--
PLT-10B	7.3	240.1	49.7	>10,000	2,350	--
PLT-10C	6.3	240.2	56.5	--	--	>10,000
PLT-12A	7	104.9	21.0	3,550	2,800	--
PLT-12B	10	148.5	18.6	1,550	2,850	--
PLT-12C	7	44.7	9.9	--		6,200
PLT-16A	7	211.4	44.5	8,150	1,900	--
PLT-16B	6.5	240.1	56.5	>10,000	2,300	--
PLT-16C	7	159.6	31.9	--	--	>10,000
PLT-17A	5.8	240.1	62.7	> 10,000	2,800	--
PLT-17B	5.7	240.1	65.4	> 10,000	3,150	--
PLT-17C	5.6	240.3	65.5	--	--	>10,000
PLT-18A	5.9	240.0	61.2	8,250	3,000	--
PLT-18B	6.2	240.0	57.6	>10,000	2,750	--
PLT-18C	4	138.7	69.3	--	--	>10,000
PLT-20A	7	36.3	8.1	4,200	1,700	--
PLT-20B	10	171.9	22.9	7,600	1,450	--
PLT-20C	7	40.9	8.6	--	--	5,450
PLT-21A	5.5	152.5	50.8	2,450	1,200	--
PLT-21B	8.1	240.3	43.1	>10,000	2,000	--
PLT-21C	7	112.9	23.8	--	--	6,000
PLT-22A	7	33.2	7.0	1,750	2,150	--
PLT-22B	10	138.0	17.3	4,300	2,400	--
PLT-22C	7	53.4	10.7	--	--	6,500
PLT-23A	6.6	240.1	72.1	>10,000	2,250	--
PLT-23B	7	286.1	76.3	7,950	2,250	--
PLT-23C	6.5	240.1	60.0	--	--	>10,000
PLT-24A	5.4	181.6	62.2	6,850	1,500	--
PLT-24B	6.8	240.1	56.5	>10,000	2,450	--
PLT-24C	5.8	240.2	67.1	--	--	>10,000

Note: The “>” sign indicates the load was achieved prior to reaching the noted deflection.

CONTRIBUTORY RISK COMPONENTS

ITEM	DESCRIPTION
Suitability Statement	The proposed site appears suitable for the use of driven steel W-Section steel piles for the support of the proposed solar arrays.
Soil Conditions	The project site is separated into five zones based on the subsurface exploration encountered in the borings and response of pile driving during pile load testing. Zone 1, 2 and 3 consist of medium dense to dense or medium stiff to hard silty, sandy and clay soils over weathered shale. Zone 4 and 5 consist loose to medium dense or very stiff silty and sandy soils. Generally, borings were extended to a maximum depth of 50 feet and weathered shale was encountered at depths ranging from 8 to 18 feet.
Access	Wet and loose/soft surface conditions due to rainwater will create access issues for vehicles. The site will generally be more accessible in the summer and early fall due to the improved drying conditions.
Grading	It is anticipated that the site work may involve cuts and fills within +/- 2 feet of existing grade. Localized high and low areas may require greater depths/heights of cut and/or fill; however, a site grading plan has not been developed at this time.
Groundwater	Groundwater was encountered at depths of 2 to 23 feet bgs. Excavations, such as trenches for electrical cable and conduit, will likely encounter groundwater and require dewatering. Excavations for shallow foundations could also encounter groundwater, especially if construction is performed during periods of seasonally high groundwater. While precipitation is relatively constant throughout the year, groundwater levels are expected to be deepest during the late summer due to increased evaporation rates.
Site Drainage	It is likely that the site may have ditches/canals which may have been installed to facilitate farming activities and site access. If encountered, filling the drainage canals or destruction of other site drainage systems will result in increased groundwater levels, softer soils, and generally undesirable subsurface conditions.
Corrosion Hazard	The results of our laboratory testing of soil chemical properties are expected to assist a qualified engineer design corrosion protection for the production piles and other project elements.

ITEM	DESCRIPTION
Excavation Hazards	Based on the results of our borings and our experience with the geology of the project site, we do not expect that difficult excavation conditions or widespread obstructions to pile driving operations will be encountered during construction in Zone 4 and 5. However, in Zone 1, 2 and 3, excavation difficulty may be encountered due to the presence of cobbles/boulders, weathered shale, or dense soil in the area. As previously noted, groundwater is expected to be encountered in excavations. Additionally, we expect general instability in the form of caving, sloughing, and raveling to be encountered in excavations. Excavations will likely require bracing, sloping, and/or other means to create safe and stable working conditions.
Anticipated Pile Drivability	In Zone 4 and 5, there is a low likelihood of encountering difficulties during pile driving. However, piles driven into the native soils and/or weathered bedrock can be expected to encounter localized refusals in Zones 1, 2 and 3. Therefore, we anticipate some pre-drilling in these areas (Zone 1, 2 and 3) will be required.
General Construction Considerations	The near-surface soils are moderately moisture sensitive and subject to degradation with exposure to moisture. To the extent practical, earthwork should be performed during warmer and drier periods of weather to reduce the amount of necessary subgrade remedial measures for soft and unsuitable conditions beneath access roadways, equipment pads, etc.

PV SOLAR ARRAY FIELD – PRELIMINARY RECOMMENDATIONS

Geotechnical Considerations

We have performed preliminary geotechnical analyses for driven pile foundations to support the typical PV panel racking system. Subsequent analyses will be required once design level geotechnical information is available and once other design considerations are more fully defined. **THEREFORE, THE RESULTS OF THE ANALYSES DESCRIBED BELOW ARE NOT SUITABLE FOR FINAL DESIGN.** Instead, this analysis is intended to assist you in roughly evaluating construction costs and development viability for the proposed project. It should also be noted that our analyses are based on short-term conditions based on boring, test pits, and pile load testing information.

The results of the borings, test pits, and pile load tests found variable subsurface conditions throughout the site. We have separated the site into five zones, Zone 1 through Zone 5 based on the response of the subsurface conditions to pile load testing. A map showing the various zones is included as Exhibit E-001 in **Appendix E**. Note that additional load testing of piles should be completed to refine the zones division.

The table below summarizes zones with subsurface condition and pre-drilling expectations.

Zones	PLT Locations	Subsurface Condition Description	Is pre-drilling expected?
Zone 1	4, 10, 16, 17, 18, 23, 24	Medium to very dense soil or medium stiff to hard (silty, sandy soil)	Yes, in localized areas
Zone 2	21	Medium dense to dense or medium stiff to hard (silty, sandy and clay soils) over weathered shale	Yes, in localized areas
Zone 3	1, 2, 6, 9, 20	Medium dense or hard (silty and sandy soil) over weathered shale	Yes, in localized areas
Zone 4	22	Loose to medium dense or very stiff (silty and sandy soil)	No
Zone 5	12	Very Loose to medium dense (silty and sandy soil)	No

In areas of driven pile refusal prior to reaching the desired pile depth, it may be appropriate to pre-drill an undersized hole (typically 80 to 90% of selected W-section diagonal width) at the pile location. The pre-drilled hole may then be backfilled with the cuttings, provided cobbles and boulders are culled from the material, and the pile driven to the design embedment depth. The objective of pre-drilling an undersized hole is to facilitate the driving of the web without disturbing the native soils supporting the flanges. Additional testing should be completed on piles installed in pre-drilled undersized holes to evaluate the impacts to both axial and lateral capacity.

Solar Panel Support Piles

Adfreeze Stress

It is Terracon's professional opinion that the overburden soils encountered in the borings are frost susceptible. In cold weather climates, design embedment depths to resist frost heave forces exerted on foundations is often the limiting factor in the foundation design. Specifically, pile lengths will need to be long enough to counteract potential frost heave forces.

Frost heave is the upward ground movement that may occur as soil freezes. The main cause of soil displacement due to frost heave is the formation of ice lenses. As the frost penetrates deeper in the ground, ice lenses may grow, and their growth displaces the soil above them. The amount of upward force depends on the following:

- The thickness of ice lenses formed in the seasonal frozen ground
- The bond between the steel pile surface and the frozen ground (adfreeze stress)
- The surface area of the steel pile in the seasonally frozen ground

We have prepared the following table of estimated frost depths for various ground surface conditions[2]:

Surface	Return Period[1]	Frost Depth (feet)
Snow-covered Bare Soil	25-year	1.3
	50-year	1.8
	100-year	2.2
Snow-covered Sod	25-year	0.8
	50-year	1.0
	100-year	1.2
Snow-free Bare Soil	25-year	4.6
	50-year	4.9
	100-year	5.7

1. Return period for the maximum annual depth of soil freezing

Terracon recommends using the 100-year return period under snow covered bare soil to determine the frost depth at the site. However, the 50-year or 25-year return period frost depth could also be used. The design frost depth should be determined based on discussions with the owner and design engineer considering the desired level of risk that the owner is willing to accept, construction costs, and the long-term maintenance program.

Based on our review of soil samples, we recommend an adfreeze stress of 1,500 psf be considered when determining the frost heave load on a pile. The box perimeter of the pile (two times the depth plus two times the flange width) should be considered when determining the frost heave load on a pile along with a load factor of 1.0.

Preliminary Axial Capacity Recommendations

The axial uplift capacity of driven piles may be estimated based on skin friction developed along the perimeter of the pile, while the compression capacity may be estimated using the skin friction and end bearing. When determining embedment depths, the perimeter of a wide flange beam should be taken as twice the sum of the flange width and section depth. The upper 2.2 feet of soil for each pile should be neglected in the axial capacity analyses.

Based on the results of the pile load testing program, we have divided the site into five areas as shown on Exhibit E-001. Below is a table of values recommended for the different zones:

[2] *The frost depth analysis is based on the publication entitled "Atlas of Soil Freezing Depth Extremes for the Northeastern United States", prepared by the Northeast Regional Climate Center of Cornell University, funded by a grant from the National Oceanic and Atmospheric Administration (NOAA). The Atlas is dated March 1996.*

Zones	Minimum Drive Time (seconds/foot)	Embedment Depth (ft.-bgs)	Ultimate Uplift and Compression Skin Friction q_s (psf)[1]	Ultimate End Bearing (lbs)
Zone 1	32	7	1,200	4,500
Zone 2	24	6	425	3,500
		6 to 8	1,500	
Zone 3	8.1	10	560	4,500
Zone 4	7	7	210	4,500
		7 to 10	510	
Zone 5	9.9	7	430	2,500 (2.1 to 7 ft.)
		7 to 10	110	500 (7 to 10 ft.)

1. Values applicable to piles embedded between 5 and 10 feet bgs.

The above values are to be used in the following equations to obtain the ultimate uplift or compression load capacity of a pile:

$$Q_{ult\ (compressive)} = Q_{ult\ (end)} + H \times P \times q_s$$

$$Q_{ult\ (uplift)} = H \times P \times q_s$$

Q_{ult} = Ultimate uplift or compression capacity of post (lbs.)
$Q_{ult\ (end)}$ = Ultimate end bearing capacity per table above (lbs.)
H = Depth of embedment of pile (ft.)
P = Perimeter area/ft. of pile. (i.e. W6x9 = 1.64 sf/ft.)
q_s = Unit skin friction per table above (psf).

The provided skin friction values are applicable for piles that are driven using equipment similar to a Vermeer PD10 pile driver with a hydraulically operated hammer. If a smaller or larger drive hammer is used, we recommend that Terracon be consulted to determine the minimum drive time based on the actual equipment to be used.

For Allowable Stress Design (ASD), we recommend the allowable skin friction values be determined by applying a factor of safety of at least 1.5 to the ultimate value and the allowable end bearing be determined by applying a factor of safety of at least 2.0 to the ultimate value.

Piles should have a minimum center-to-center spacing of at least 3 times their largest cross-sectional dimension to prevent reduction in the axial capacities due to group effects. Final pile

design to be completed by an engineering licensed in the State of New York based upon information contained in this geotechnical report and independent pile load testing.

Preliminary Lateral Capacity Recommendations

Lateral load response of pile foundations was calculated using the computer program *L-Pile 2019*, by Ensoft, Inc. The stiffness of the pile and the stress-strain properties of the surrounding soils determine the lateral resistance of the foundation. We modeled the lateral response of the tested piles to evaluate L-Pile input parameters that can be used for design of the production piles. Recommended L-Pile input parameters for lateral load analysis for driven pile foundations are shown in the following table:

Depth Interval of Layer (feet)	(P-y) Curve Type Model	Effective Unit Weight (pcf)	Cohesion (psf)	Friction Angle (degree)
0 to 10	Sand (Reese) [1]	120	--	34

1. Use default value for Soil Modulus, k

The lateral load test results were varied between the different embedment depths. Therefore, we are providing the following table of p-multiplier values that should be used for the corresponding embedment depth:

Embedment Depth (feet-bgs)	P-multiplier
5	2
6	4.5
7	1.1
8	1.2
10	2.0

For preliminary design, the p-multiplier in the upper 2.2 feet should be reduced by 30% to account for seasonal freeze/thaw effects. For instance, if the p-multiplier in the table above is 1.0, the p-multiplier should be reduced to a value of 0.7 in the upper 2.2 feet of the soil profile.

L-PILE analyses were performed by applying the field test load that resulted in approximately ½-inch deflection at a point about six inches above the ground surface. The shear load was applied at approximately 2 feet above the ground surface. The effective unit weight, friction angle and modulus of subgrade reaction (k-value) were based on the results of the SPT borings. The p-multiplier was then adjusted (by trial and error method) such that the applied load resulted in a

deflection value that matched the load test results. Please note that this procedure was based on only one discrete set of data determined at about six inches from the ground surface during the field load testing. These results should be used for L-PILE analysis only using the 2019 version of L-Pile. These parameters are only applicable to piles embedded between five and ten feet below grade. In our evaluation, the piles were modeled as a Steel AISC Section Strong Axis.

The structural engineer should evaluate the moment capacity of the pile as part of their structural evaluation. Piles should have a minimum center-to-center spacing of at least five times their largest cross-sectional dimension in the direction of the lateral loads, or the lateral capacities should be reduced due to group effects. If piles will be spaced closer than five times their largest cross-sectional dimension, we should be notified to provide supplemental recommendations regarding resistance to lateral loads.

Construction Considerations

Split-spoon sampler refusal was encountered at several locations within the depths explored, indicating the presence of possible cobbles and boulders, and weathered bedrock. Pile installation via conventional methods – such as driving into a virgin subgrade may encounter difficulty and may result in early refusal and inadequate penetration, or else may cause excessive pile deflection, rotation or torsional rotation. Auger drilling typically is unsuccessful for subgrades containing appreciable cobbles and boulders and competent bedrock. We expect that percussive drilling methods such as ODEX or air-rotary could then be necessary to complete pre-drilled holes to their design depth.

In areas of driven pile refusal prior to reaching the desired pile depth, it may be appropriate to predrill an undersized hole (typically 80 to 90% of selected W-section diagonal width) at the pile location. The predrilled hole may then be backfilled with the cuttings, provided cobbles and boulders are culled from the material, and the pile driven to the design embedment depth.

Based on the field exploration and laboratory testing, it is our opinion that the soils on the site are suitable for pile installation. However, localized pile driving refusal should be anticipated throughout the site. Supplemental testing of piles installed in pre-drilled undersized holes should be completed to better evaluate the impacts on the uplift and lateral capacity.

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

Preliminary Slab/Mat Foundation Recommendations

Several pieces of equipment for the project may be supported on concrete slabs or mats, constructed near the finished grade surface.

The following sections present design recommendations and construction considerations for the shallow foundations for proposed lightly-loaded structures and related structural elements.

Description	Mat
Net allowable bearing pressure[1]	2,000 psf
Modulus of subgrade reaction for slab-on-grade design (K_{v1})	150 pounds per square inch per in (psi/in) for point loading conditions
Bearing material	Minimum 6-inch thickness of NFS material, Structural Fill, or Crushed Stone placed on either the native material or compacted fill placed for site grading, the surface of which should be proof-rolled. The Structural Fill should extend a minimum lateral distance of 6 inches beyond the edges of the foundations.
Foundation dimensions	N/A
Minimum embedment below finished grade[2]	Slab foundations may move due to freeze-thaw effects. NFS material will need to be placed at least 24 inches deep to significantly reduce the effects of freeze-thaw. Alternately, the slab could be designed to allow movement due to frost action.
Approximate total settlement [3]	1 inch
Estimated differential settlement	About 2/3 of total settlement
Ultimate coefficient of sliding friction[4]	0.45 – Structural fill 0.50 – Crushed Stone or NFS

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. The allowable bearing pressure may be increased by ⅓ when considering the alternative load combinations of Section 1605.3.2 of the *2012 International Building Code*, however, it should not be increased when loads are determined by the basic allowable stress design load combinations of Section 1605.3.1.
2. Required for the allowable bearing pressure, erosion protection and to reduce the effects of seasonal moisture variations in the subgrade soils.
3. The foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of compacted fill, and the quality of the earthwork operations. Footings should be proportioned to relatively constant dead-load pressure in order to reduce differential movement between adjacent footings.
4. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to uplift conditions. A factor of safety of at least 1.5 should be applied to the sliding resistance.

The allowable foundation bearing pressures apply to dead loads plus design live load conditions. The weight of the foundation concrete below grade may be neglected in dead load computations.

The subgrade modulus (K_v) for the mat is affected by the size of the mat foundation and would vary according to 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.

Foundation excavations should be observed by the Geotechnical Engineer. If the soil conditions encountered differ significantly from those presented in this report, Terracon should be contacted to provide additional evaluation and supplemental recommendations.

Mat/Slab Foundation Construction Considerations

Finished subgrade within and for at least 10 feet beyond the slab/mat should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition. If the subgrade should become damaged or desiccated prior to construction of slabs/mats, the affected material should be removed, and Structural Fill should be added to replace the resulting excavation. Final conditioning of the finished subgrade should be performed immediately prior to placement of the slab/mat support course.

The Geotechnical Engineer should approve the condition of the subgrades immediately prior to placement of the slab/mat support course, reinforcing steel and concrete. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

RECOMMENDATIONS FOR SUBSTATION

Geotechnical Considerations

Recommended parameters and construction procedures are based on the average data gathered from SPT borings within the proposed substation area. We would expect several small structures to house equipment and provide storage to be constructed as part of the substation portion of the project. The proposed structure types and loading information were not available at the time of this report. Settlement potential was analyzed using soil the average compressibility properties derived from the SPT borings drilled at the project site. We estimate total settlements to be less than one inch provided column loads are less than 150 kips and the applied bearing pressure of small isolated slabs or mats is less than about 2,500 psf. Shallow foundation systems for support of lightly-loaded buildings and equipment pads will be acceptable provided these maximum loads are not exceeded. Once loading for these ancillary structures is better known, detailed settlement analyses can be performed to finalize design parameters for shallow foundations.

Topsoil, organic matter, stumps, existing fill, or other unsuitable materials should not be left in place below any new structure. All structure foundations should bear on suitable natural soil, or on properly compacted structural fill placed upon stable native soils.

Recommendation for Spread Footing and Mat/Slab Foundation

General

We understand within the substation that some equipment may be supported on mat/slab foundations, while other building(s) may be supported on shallow footing foundations. Transmission line structures are anticipated to be constructed as poles on drilled shafts or as direct embed poles.

Loose to medium dense (soft to medium stiff) silty, sandy with some clay soils were encountered near the surface. Based on the anticipated types of structures and the expected magnitude of loading, surface compaction using a moderate to heavy vibratory roller as discussed earlier in this report should provide adequate improvement for shallow foundation support of these structures.

The following sections present design recommendations and construction considerations for the shallow foundations for proposed lightly loaded structures and related structural elements.

Spread Footing Design Recommendations

Item	Description
Maximum net allowable bearing pressure [1, 2]	2,500 psf
Required bearing stratum [3]	Minimum 6 inches of compacted Structural Fill placed upon stable native soils. The Structural Fill should extend a minimum lateral distance of 6 inches beyond the edges of the foundations
Minimum foundation dimensions	Isolated: 30 inches Continuous: 18 inches
Ultimate passive resistance [4] (equivalent fluid pressures)	250 pcf
Ultimate coefficient of sliding friction [5]	0.50 (Concrete on compacted Structural Fill)
Minimum embedment below finished grade [6]	30 inches
Estimated total settlement from structural loads [2]	Less than about 1 inch
Estimated differential settlement [2, 7]	About ¾ of total settlement

Item	Description
1.	The maximum net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. The allowable bearing pressure may be increased by one-third when considering the alternative load combinations of Section 1605.3.2 of the 2015 International Building Code, however, it should not be increased when loads are determined by the basic allowable stress design load combinations of Section 1605.3.1.
2.	Values provided are for maximum loads noted in **Project Description**.
3.	Unsuitable or soft soils should be overexcavated and replaced according to the recommendations presented in **Earthwork**.
4.	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.
5.	Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to net uplift conditions. Should be neglected if passive pressure is used to resist lateral loads.
6.	Embedment necessary to resist the effects of frost and/or seasonal water content variations. For sloping ground, maintain depth below the lowest adjacent exterior grade within 10 horizontal feet of the structure.
7.	Differential settlements are as measured over a span of up to 50 feet.

The allowable foundation bearing pressures apply to dead loads plus design live load conditions. The weight of the foundation concrete below grade may be neglected in dead load computations.

Spread Footing Construction Considerations

The bottom of all foundation excavations should be free of water and loose soil prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Extremely wet or dry material or any loose or disturbed material in the bottom of the footing excavations should be removed before foundation concrete is placed.

If unsuitable bearing soils are encountered in footing excavations, the excavations should be extended deeper to suitable soils and the footings could bear directly on those soils at the lower level. Alternatively, the over-excavations could be backfilled with compacted Structural Fill, clean gravel or lean concrete. More complete foundation design and construction recommendations can be provided as the design of the facility progresses.

Foundation excavations should be observed by the Geotechnical Engineer. If the soil conditions encountered differ significantly from those presented in this report, Terracon should be contacted to provide additional evaluation and supplemental recommendations.

Mat/Slab Foundation Design Recommendations

Reinforced concrete support slabs (mat foundations) may be required to support some equipment. We recommend concrete slabs have thickened edges with a minimum embedment depth to bottom of edge of 18 inches below finished grade. It is our opinion the thickened edge

may help in both confining the aggregate placed beneath the slab and minimizing the potential for erosion and foundation damage from storm runoff.

Description	Mat
Net allowable bearing pressure[1]	2,000 psf
Modulus of subgrade reaction for slab-on-grade design (K_{v1})	150 pounds per square inch per in (psi/in) for point loading conditions
Bearing material	Minimum 9-inch thickness of NFS material, Structural Fill, or Crushed Stone placed on either the native material or compacted fill placed for site grading, the surface of which should be proof-rolled. Bearing material should extend a minimum of 9 inches beyond the edges of the foundations.
Foundation dimensions	N/A
Minimum embedment below finished grade[2]	Slab foundations may move due to freeze-thaw effects. NFS material will need to be placed at least 30 inches deep to significantly reduce the effects of freeze-thaw. Alternately, the slab could be designed to allow movement due to frost action.
Approximate total settlement [3]	1 inch
Estimated differential settlement	About 2/3 of total settlement
Ultimate coefficient of sliding friction[4]	0.45 – Structural Fill 0.50 – Crushed Stone or NFS

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. The allowable bearing pressure may be increased by ⅓ when considering the alternative load combinations of Section 1605.3.2 of the *2012 International Building Code*, however, it should not be increased when loads are determined by the basic allowable stress design load combinations of Section 1605.3.1.
2. Required for the allowable bearing pressure, erosion protection and to reduce the effects of seasonal moisture variations in the subgrade soils.
3. The foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of compacted fill, and the quality of the earthwork operations. Footings should be proportioned to relatively constant dead-load pressure in order to reduce differential movement between adjacent footings.
4. Can be used to compute sliding resistance where foundations are placed on suitable soil/materials. Should be neglected for foundations subject to uplift conditions. A factor of safety of at least 1.5 should be applied to the sliding resistance.

The allowable foundation bearing pressures apply to dead loads plus design live load conditions. The weight of the foundation concrete below grade may be neglected in dead load computations.

The subgrade modulus (K_v) for the mat is affected by the size of the mat foundation and would vary according to 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.

Foundation excavations should be observed by the Geotechnical Engineer. If the soil conditions encountered differ significantly from those presented in this report, Terracon should be contacted to provide additional evaluation and supplemental recommendations.

Mat/Slab Foundation Construction Considerations

On most sites, the site grading is generally accomplished early in the construction phase. However, as construction proceeds, the subgrade may be disturbed by foundation excavations, construction traffic, rainfall, etc. As a result, the subgrade may not be suitable for placement of fill, and corrective action will be required.

We recommend the area underlying the mat foundation be rough graded and proof-rolled with a vibratory roller or heavy plate compactor prior to final grading and placement of Structural Fill. Subgrades with fine-grained soils may need to be proof-rolled/compacted in static mode to avoid disturbance. Attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas previously filled or backfilled. Areas where unsuitable or unstable conditions are located should be repaired by replacing the affected material with properly compacted Structural Fill, as necessary. Surface drainage should be provided away from the edge of foundations to reduce moisture transmission into the subgrade.

Recommendation for Drilled Shaft Foundations

General

Compressive axial loads on drilled shaft foundations are resisted by both skin friction along the shaft and by end bearing at the base of the shaft, while uplift loads are resisted by skin friction along the shaft, the weight of the shaft, and the dead load acting on the foundation itself.

We have provided in the tables the preliminary allowable side resistance (skin friction) and end bearing values, along with the lateral load parameters discussed below. Generally, a factor of safety of three was applied to end bearing, two to side resistance in compression, and two to side resistance in uplift (tension). We recommend ignoring the side resistance in the upper 5 feet as a result of disturbance during construction. The actual factor of safety should be chosen by the foundation designer and will depend on several factors including: the type of structure, location of

the structure, intended performance of the structure, use of the structure, and applicable code requirements. We recommend a minimum shaft diameter of 30 inches be used in order to permit cleaning and testing of the shaft bottoms. The drilled shaft should have a minimum embedded length of 10 feet.

It is our understanding that the designer for this project may use LPile to evaluate lateral capacities for substation foundation structures and MFAD for transmission line structures. Recommended **preliminary** LPile and MFAD soil parameters are provided in the table provided below and are based on the average data gathered from SPT borings (GSB-1, 2 and 3) within the proposed substation area.

Depth[1] (feet)	Layer Description & LPile Soil p-y Model	Effective Unit Weight[1] (pcf)	Allowable Skin Friction[2] (ksf)	Allowable End Bearing Pressure[2] (ksf)	Friction angle (degrees)	Deformation Modulus, (ksi)
0 to 5[3]	Silt and Sand[4] / Sand (Reese)	110	---	---	30	1.0
5 to 8		115	0.5	3	31	1.0
8 to 15		65	0.9	4	34	2.0
15 to 30		73	1.7	6	37	5.0

1. Depth below ground surface (BGS) at boring location. Estimated groundwater table is 8 feet BGS.
2. End bearing values include a safety factor of 3; skin friction values include a safety factor of 2.
3. Straight-sided drilled shafts cast in direct contact with adjacent soil (uncased). Ignore side resistance in upper 4 feet due to disturbance during drilling.
4. For LPile analysis, take a default value for Static Lateral Subgrade Modulus, k (lbs./ in^3).

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

PRELIMINARY EARTHWORK RECOMMENDATIONS

The site work conditions will be largely dependent on the weather conditions and the contractor's means and methods in controlling surface drainage and protecting the subgrade. The near-surface silt, clay and sand encountered in the borings may provide relatively wet subgrade during construction. Site preparation where inverter mat foundations will be installed should include clearing and grubbing, installation of a site drainage system (where necessary), subgrade preparation, proof-rolling and vibratory densification as necessary. Site preparation is not

necessary in the PV Array field or where inverters will be supported on driven piles except to improve site drainage where necessary.

We would expect typical earthmoving equipment (bulldozers, excavators, steel drum vibratory rollers) to be suitable for completion of earthwork activities on the site. The most challenging obstacle for earthwork construction will be the control of surface and groundwater, especially during the typical wet season. The site should be graded to prevent ponding of surface water. Additionally, dewatering (rim ditches, sump pumps, well points, etc.) may be needed to lower the groundwater and allow for adequate compaction in trenches.

PRELIMINARY UNPAVED ACCEESS ROADS

Surficial materials below the topsoil at the site primarily consists of mixtures of silt, sand, and clay. It is expected that the proposed site grades will be established near the existing site grades using small amounts of engineered fill material similar to the surficial soils to level the planned access road areas. Reportedly, the planned access roads will experience light traffic load, primarily during construction stage, with very little maintenance traffic thereafter.

Typical unpaved access roads in the lightly loaded array areas consisting of about 6 inches of Aggregate Base on compacted native soil should be suitable. The substation access road will likely require 6 to 12 inches of Aggregate Base compacted native soils or native soils reinforced with a geogrid. Based upon the soil conditions at the time of construction, additional Aggregate Base and/or multiple layers of high-strength geotextile may be required to stabilize the aggregate section.

The access road area subgrades should be properly sloped to direct water from beneath the drive area gravel section toward the edge, and/or down gradient. Collected water should be channeled away from the access road. Adequate sloping of the gravel surface will minimize the potential for ponding of water on or within proximity to the drive area, which will shorten the life of the unpaved roadways.

Access road subgrades should be proof-rolled or compacted with a heavy vibratory roller in static mode on cohesive soil. Unstable subgrades should be replaced with compacted Structural Fill, as necessary. Structural Fill may then be placed to attain the required grade. These subgrades should be prepared immediately prior to the time of aggregate placement to reduce the risk of disturbance due to weather or construction vehicle traffic. If this cannot be done, the subgrades should be reevaluated by a qualified Geotechnical Engineer for disturbance or softening immediately prior to aggregate placement.

Regardless of the design, unsurfaced roadways will display varying levels of wear and deterioration. We recommend 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 regrading. An initial site inspection should be completed approximately three months following construction. For planning purposes, we recommend assuming that over time the placement of additional aggregate material will likely be required to level depressions and long-term rutting. These areas should be filled with additional aggregate rather than scalping of material from adjacent areas.

Shoulder build-up on both sides of proposed roadways should match the road surface elevation and slope outwards at a minimum grade of 10 percent for five feet. Surface drainage should be provided away from the edge of roadways to reduce lateral moisture transmission into the subgrade.

When potholes, ruts, depressions or yielding subgrades develop, they must be repaired prior to applying additional traffic loads. Typical repairs could consist of placing additional Crushed Stone in ruts or depressed areas and, in some cases, complete removal of Crushed Stone surfacing, repair of unstable subgrade, and replacement of the Crushed Stone surfacing. Potholes and depressions should not be filled by blading adjacent ridges or high areas into the depressed areas. New material should be added to the depressed areas as they develop. Failure to make timely repairs will result in more rapid deterioration of the roadways, making more extensive repairs necessary.

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.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration and Laboratory Testing

Number of Explorations	Type of Exploration	Depth or "a" Spacing (feet)[1]	Planned Location
24	SPT Boring	18 to 20	Array Area
3		48 to 49.5	Substation Area
6	Groundwater Monitoring Wells	18 to 20	Array Area
1		48	Substation Area
12	Test Pits	6 to 11	Array Area
10	Infiltration Tests	5	Proposed Infiltration BMPs
10	Field Electrical Resistivity[2]	2.5, 5, 10, 20, and 50 feet	Array Area
1		0.5, 1, 1.5, 2, 3, 5, 7, 10, 15, 20, 30, 45, 70, and 100 feet	Substation Area
2		0.5, 1, 1.5, 2, 3, 5, 7, 10, 15, 20, 30, 45, 70, 100, 150, 250, and 500 feet	In proximity to Substation Area
8 (2 per location)	Thermal Resistivity[2,3]	1 to 4 (Two samples at each location: one undisturbed sample and one bulk sample)	Array Area
2 (2 per location)			Substation Area
16	Corrosion Testing	1 to 4 feet bgs	Array and Substation Area
45 (3 per location)	Pile Load Testing	4 to 10	Array Area

1. Below the existing ground surface.
2. We were not able to perform a full-run test at the substation area due to constraints. In conversation with NextEra, we completed two addition full-run tests in proximity to the substation area.

Boring Layout and Elevations: Terracon personnel provided the exploration layout. Coordinates were obtained with a handheld GPS unit (estimated horizontal accuracy of about ±10 feet) and approximate elevations were obtained by interpolation from the USGS. If elevations and a more precise exploration layout are desired, we recommend explorations be surveyed following completion of fieldwork.

SPT Borings: The SPT soil borings utilized an ATV-mounted, rotary drilling rig equipped with an automatic hammer. Soil samples were obtained by thin-walled tube or split spoon sampling procedure in general accordance with the Standard Penetration Test (SPT) procedure. In the thin-walled tube sampling procedure, a thin-walled, seamless steel tube with a sharp cutting edge was pushed hydraulically into the soil to obtain a relatively undisturbed sample. In the split spoon

sampling procedure, the number of blows required to advance the sampling spoon the last 12 inches of an 18-inch penetration or the middle 12 inches of a 24-inch penetration by means of a 140-pound hammer with a free fall of 30 inches, is the standard penetration resistance value (N). This value is used to estimate the in-situ relative density of cohesionless soils and the consistency of cohesive soils. The sampling depths and penetration distance, plus the standard penetration resistance values, are shown on the boring logs.

Portions of the samples from the borings were sealed in jars to reduce moisture loss, and then the jars were taken to our laboratory for further observation and classification. Upon completion, the boreholes were backfilled with soil cuttings.

Field logs of each boring were prepared by a geologist. These logs included visual classifications of the materials encountered during drilling as well as the geologist interpretation of the subsurface conditions between samples.

Test Pits: The test pits were excavated using an excavator with an 18-inch wide bucket. Continuous lithologic logs of each test pit were recorded by our field engineer during the field exploration and photographs of the excavated pits were taken. Samples were collected from the test pits and were placed in sealed plastic bags to prevent moisture loss, and then transported to our laboratory for further observation, testing, and classification. The test pits were backfilled with excavated soils upon completion.

Monitoring wells: A total of seven groundwater level observation wells were installed at select boring locations across the project site as part of this geotechnical investigation. Upon completion of the split barrel sampling, a 10-foot length of machine threaded and slotted (0.010-inch slot size) 2-inch ID Schedule 40 PVC well screen equipped with a bottom plug was coupled to the appropriate length of 2-inch ID PVC well riser pipe to allow for approximately 2 feet of above grade stickup. The well pipe was then lowered into the hollow stem augers and gently seated at the bottom of the borehole. The well was then constructed inside the hollow stem augers by slowly filling the annular space with clean graded #1 filter sand while removing the augers. The filter sand pack was completed at a depth of approximately 3 feet above the top of the screened portion of the well. Similar methods were then utilized to install a bentonite chip seal above the filter sand pack. Generally, the bentonite seal ranged from 2 to 3 foot in thickness. The remaining augers were then pulled from the borehole, and the remaining annular space backfilled with excess auger cuttings generated during the advancement of the borehole. A PVC “slip cap” was then placed over the exposed end of the riser pipe. The groundwater observation well was then completed by placing a PVC “slip cap” over the exposed end of the riser pipe.

Infiltration Testing: Ten PVC pipes were installed for infiltration testing in proximity to respective ten test borings to a depth of approximately 5 feet below the existing surface. The infiltration test at each location was performed in general accordance with NYDEC Stormwater Management Design Manual - Appendix D. The infiltration test results are presented on Exhibit A-067 to A-068 in Appendix A.

Soil Electrical Resistivity Testing: Soil electrical resistivity data was obtained in accordance with ASTM G57 Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method. For testing, we performed two mutually perpendicular lines with electrode "a" spacing of:

- 2.5, 5, 10, 20, and 50 feet at 10 locations in the array areas
- 0.5, 1, 1.5, 2, 3, 5, 7, 10, 15, 20, 30, 45, 70, 100 feet within the substation area near GSB-3. The spacing was not extended to 500 feet due to the presence of existing structures on one side and forest on the other.
- 0.5, 1, 1.5, 2, 3, 5, 7, 10, 15, 20, 30, 45, 70, 100, 250 and 500 feet near GB-17 and GTP-3. These two locations are close to the substation areas and convenient to perform a full-run test as opposed to the proposed substation area.

Geotechnical Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil 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.

- Moisture Contest Test
- Atterberg Limit Test
- Grain Size Distribution Test
- Moisture-Density Relationship Test
- California Bearing Ratio (CBR)

Our laboratory testing program also included examination of soil samples by an engineer. Based on observation and test data, the engineer classified the soil samples in accordance with the Unified Soil Classification System (ASTM D2487).

Additional laboratory testing was also completed as described below:

Corrosion Test Samples

Sixteen soil samples were collected from a depth of 1 to 4 feet bgs for laboratory corrosion testing. The corrosion testing consisted of water-soluble sulfate ion content (ASTM C1580), water-soluble chloride ion content (ASTM D512), pH (ASTM D4972), Sulfides (ASTM D4658), Oxidation Reduction Potential (ASTM G200), and electrical resistivity using the "soil box" method (ASTM G187).

Laboratory Thermal Resistivity Testing

Laboratory thermal resistivity testing was performed by Terracon on 10 bulk and 10 undisturbed soil samples obtained during our field exploration from a depth of approximately 1 to 4 feet below the existing ground surface. The thermal resistivity testing was performed in general accordance with the IEEE standard. The dry-out curves were developed from soil specimens compacted to 90 percent of the standard Proctor criteria (ASTM D698) at the optimum moisture content.

APPENDIX A – FIELD EXPLORATION

Contents:

Note: All attachments are one page unless noted above.

SITE LOCATION

Garnet Solar ■ Cayuga County, New York
Project No. J5205196

Terracon GeoReport

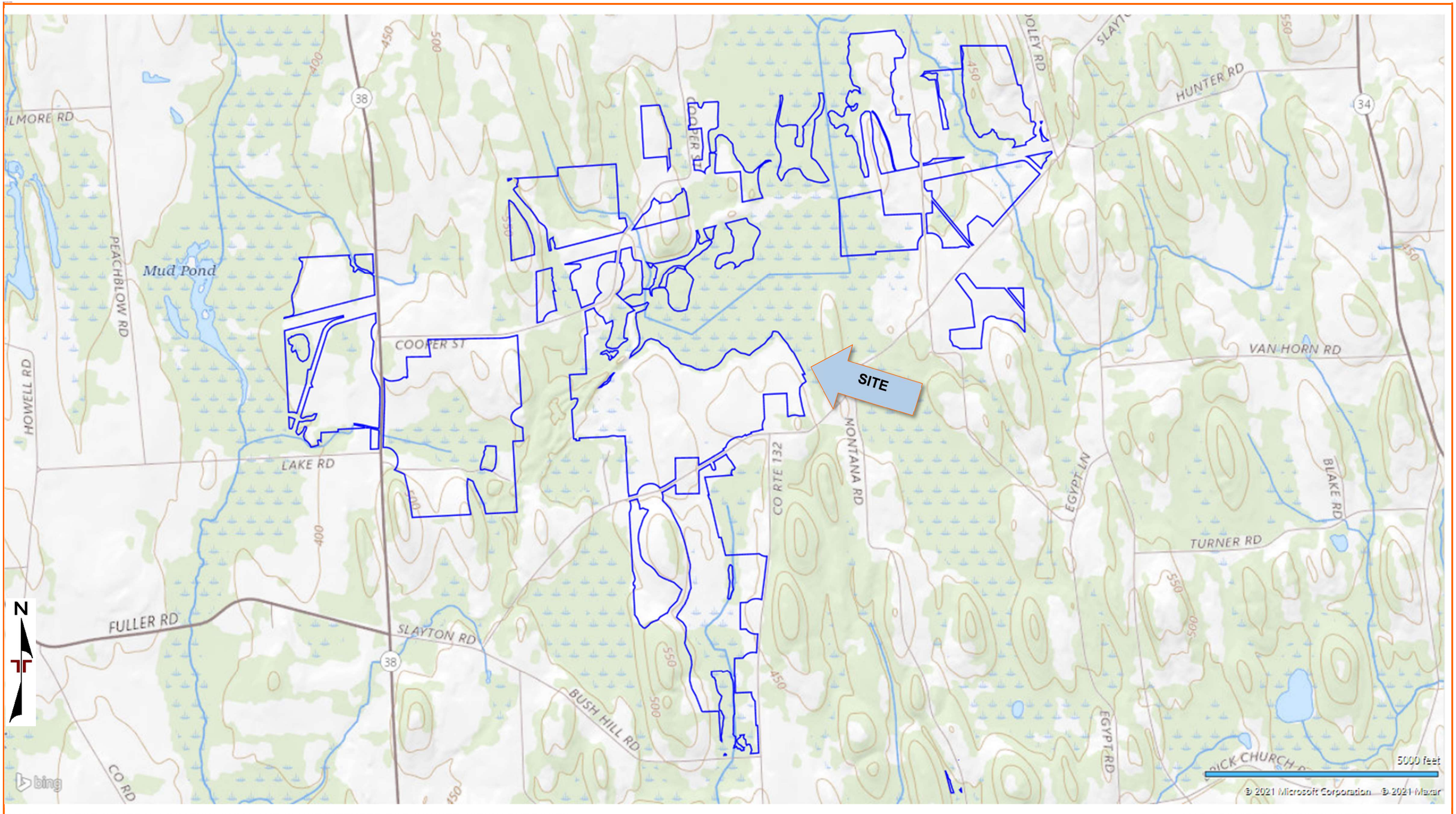


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

Exhibit A-001

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

MAP PROVIDED BY USGS

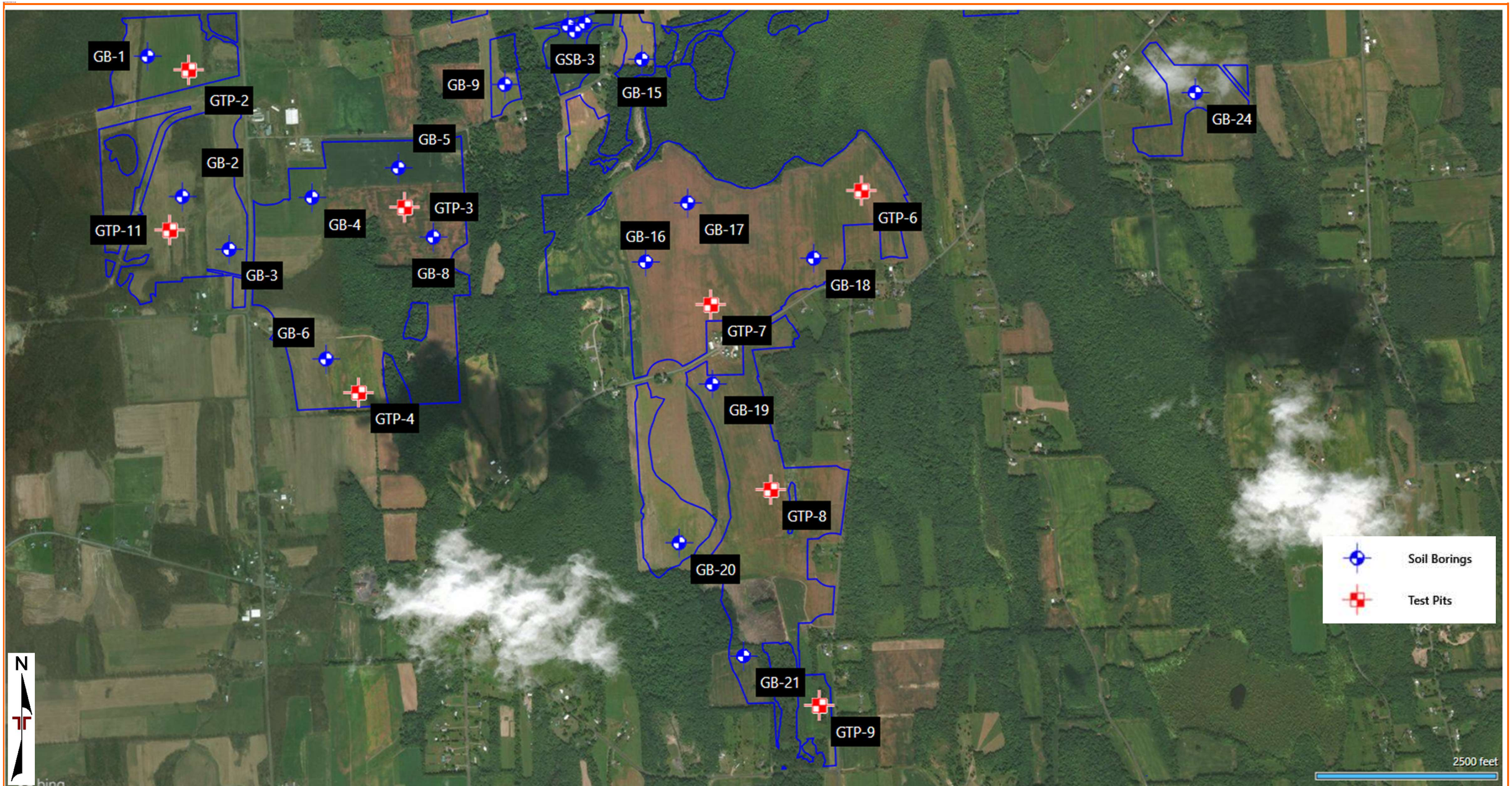


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY USGS

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS
Garnet Solar ■ Cayuga County, NY
Terracon Project No. J5205196

Terracon GeoReport

SAMPLING	WATER LEVEL	FIELD TESTS
Grab Sample Standard Penetration Test	**Water Initially Encountered** **Water Level After a Specified Period of Time** **Water Level After a Specified Period of Time** **Cave In Encountered** 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.	**N** Standard Penetration Test Resistance (Blows/Ft.) **(HP)** Hand Penetrometer **(T)** Torvane **(DCP)** Dynamic Cone Penetrometer **UC** Unconfined Compressive Strength **(PID)** Photo-Ionization Detector **(OVA)** Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

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

LOCATION AND ELEVATION NOTES

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

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength Qu, (tsf)**	**Standard Penetration or N-Value Blows/Ft.**
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

RELEVANCE OF SOIL BORING LOG

The soil boring logs contained within this document are intended for application to the project as described in this document. Use of these soil boring logs for any other purpose may not be appropriate.

UNIFIED SOIL CLASSIFICATION SYSTEM

Terracon GeoReport

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 / Liquid limit - not dried	< 0.75	OL	Organic clay [K, L, M, N] / Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K, L, M]
			PI plots below "A" line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OH	Organic clay [K, L, M, P] / Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

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

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

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

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

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[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.

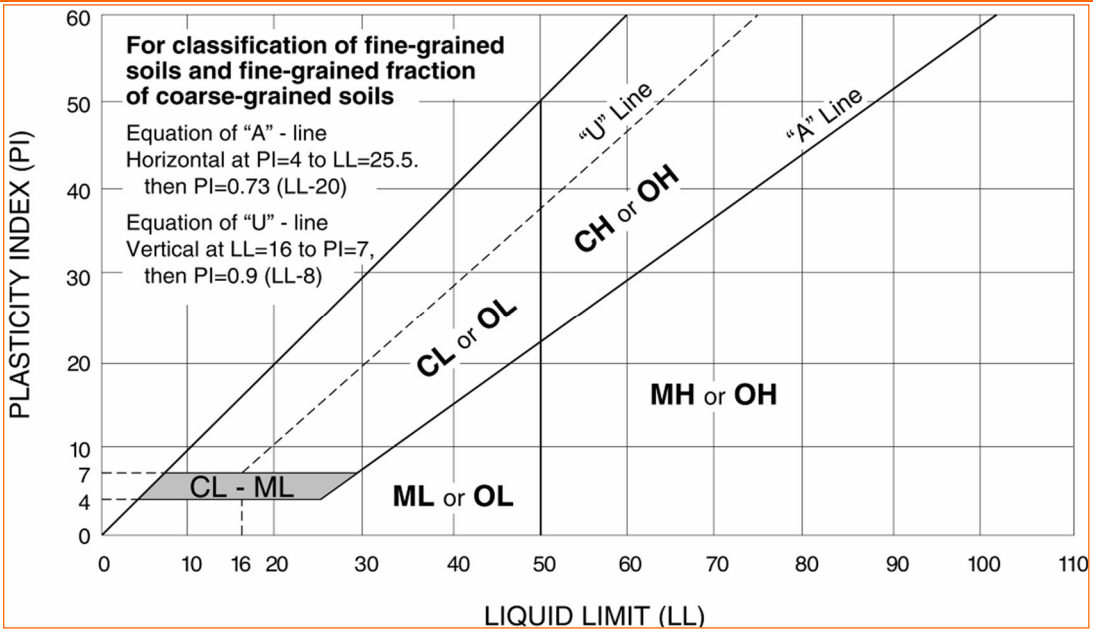
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[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.



WEATHERING	
Term	**Description**
Unweathered	No visible sign of rock material weathering, perhaps slight discoloration on major discontinuity surfaces.
Slightly weathered	Discoloration indicates weathering of rock material and discontinuity surfaces. All the rock material may be discolored by weathering and may be somewhat weaker externally than in its fresh condition.
Moderately weathered	Less than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a continuous framework or as corestones.
Highly weathered	More than half of the rock material is decomposed and/or disintegrated to a soil. Fresh or discolored rock is present either as a discontinuous framework or as corestones.
Completely weathered	All rock material is decomposed and/or disintegrated to soil. The original mass structure is still largely intact.
Residual soil	All rock material is converted to soil. The mass structure and material fabric are destroyed. There is a large change in volume, but the soil has not been significantly transported.

STRENGTH OR HARDNESS		
Description	**Field Identification**	**Uniaxial Compressive Strength, psi (MPa)**
Extremely weak	Indented by thumbnail	40-150 (0.3-1)
Very weak	Crumbles under firm blows with point of geological hammer, can be peeled by a pocket knife	150-700 (1-5)
Weak rock	Can be peeled by a pocket knife with difficulty, shallow indentations made by firm blow with point of geological hammer	700-4,000 (5-30)
Medium strong	Cannot be scraped or peeled with a pocket knife, specimen can be fractured with single firm blow of geological hammer	4,000-7,000 (30-50)
Strong rock	Specimen requires more than one blow of geological hammer to fracture it	7,000-15,000 (50-100)
Very strong	Specimen requires many blows of geological hammer to fracture it	15,000-36,000 (100-250)
Extremely strong	Specimen can only be chipped with geological hammer	>36,000 (>250)

DISCONTINUITY DESCRIPTION			
Fracture Spacing (Joints, Faults, Other Fractures)		**Bedding Spacing (May Include Foliation or Banding)**	
Description	**Spacing**	**Description**	**Spacing**
Extremely close	< ¾ in (<19 mm)	**Laminated**	< ½ in (<12 mm)
Very close	¾ in – 2-1/2 in (19 - 60 mm)	**Very thin**	½ in – 2 in (12 – 50 mm)
Close	2-1/2 in – 8 in (60 – 200 mm)	**Thin**	2 in – 1 ft. (50 – 300 mm)
Moderate	8 in – 2 ft. (200 – 600 mm)	**Medium**	1 ft. – 3 ft. (300 – 900 mm)
Wide	2 ft. – 6 ft. (600 mm – 2.0 m)	**Thick**	3 ft. – 10 ft. (900 mm – 3 m)
Very Wide	6 ft. – 20 ft. (2.0 – 6 m)	**Massive**	> 10 ft. (3 m)

Discontinuity Orientation (Angle): Measure the angle of discontinuity relative to a plane perpendicular to the longitudinal axis of the core. (For most cases, the core axis is vertical; therefore, the plane perpendicular to the core axis is horizontal.) For example, a horizontal bedding plane would have a 0-degree angle.

ROCK QUALITY DESIGNATION (RQD) [1]	
Description	**RQD Value (%)**
Very Poor	0 - 25
Poor	25 – 50
Fair	50 – 75
Good	75 – 90
Excellent	90 - 100

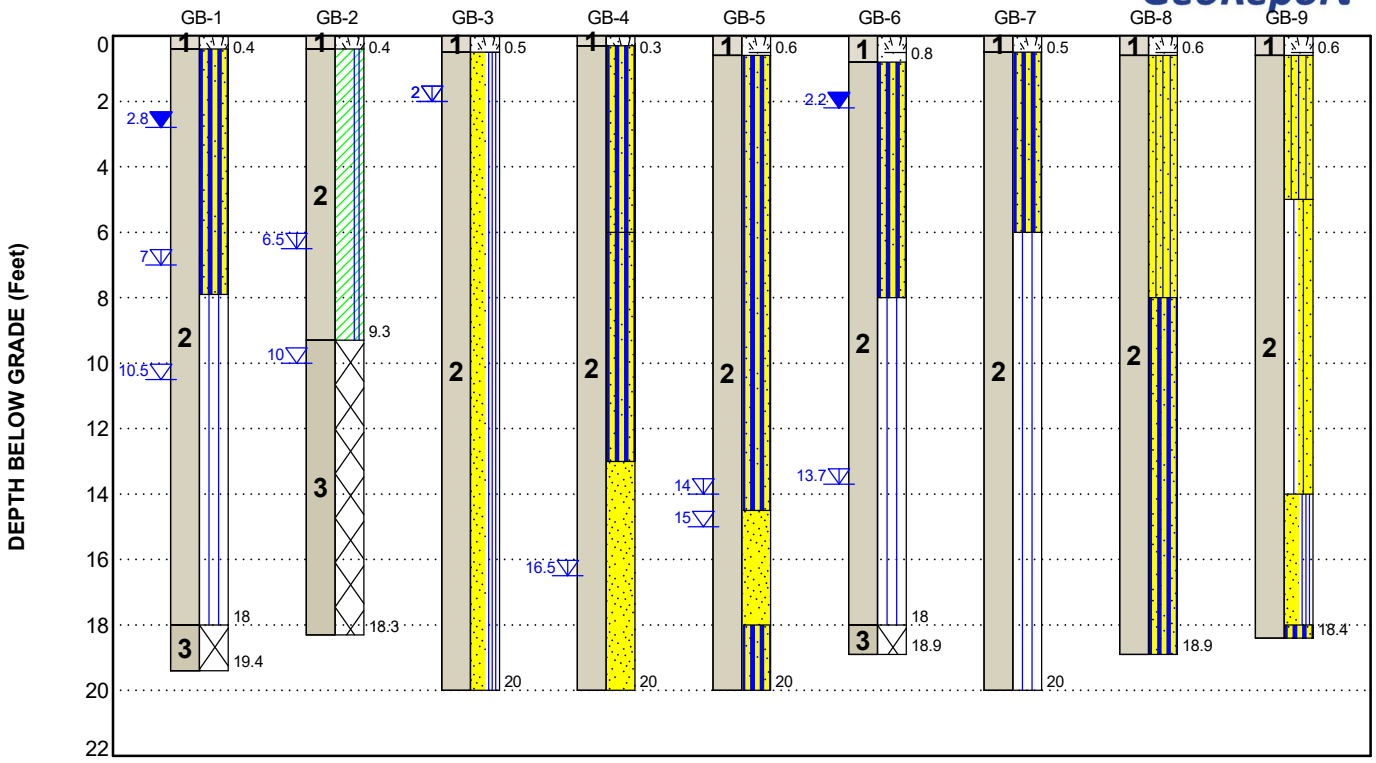
1. The combined length of all sound and intact core segments equal to or greater than 4 inches in length, expressed as a percentage of the total core run length.

Reference: U.S. Department of Transportation, Federal Highway Administration, Publication No FHWA-NHI-10-034, December 2009 Technical Manual for Design and Construction of Road Tunnels – Civil Elements

GEOMODEL

Garnet Solar ■ Cayuga County, NY
Terracon Project No. J5205196

Terracon GeoReport



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Surface	Topsoil; possible reworked soil
2	Native Soil	Mixtures of silt and sand; some clay and gravel; contain rock/cobble fragments; brown to orange brown, red, reddish to grayish green ; loose to very dense or medium stiff to hard
3	Weathered rock	Weathered Shale; Weathered Shale; grayish green to gray green to gray

LEGEND

- Topsoil
- Sandy Silt
- Silt
- Weathered Rock
- Lean Clay with Silt
- Poorly-graded Sand with Silt
- Poorly-graded Sand
- Silty Sand
- Silt with Sand

- First Water Observation
- Second Water Observation
- Third Water Observation

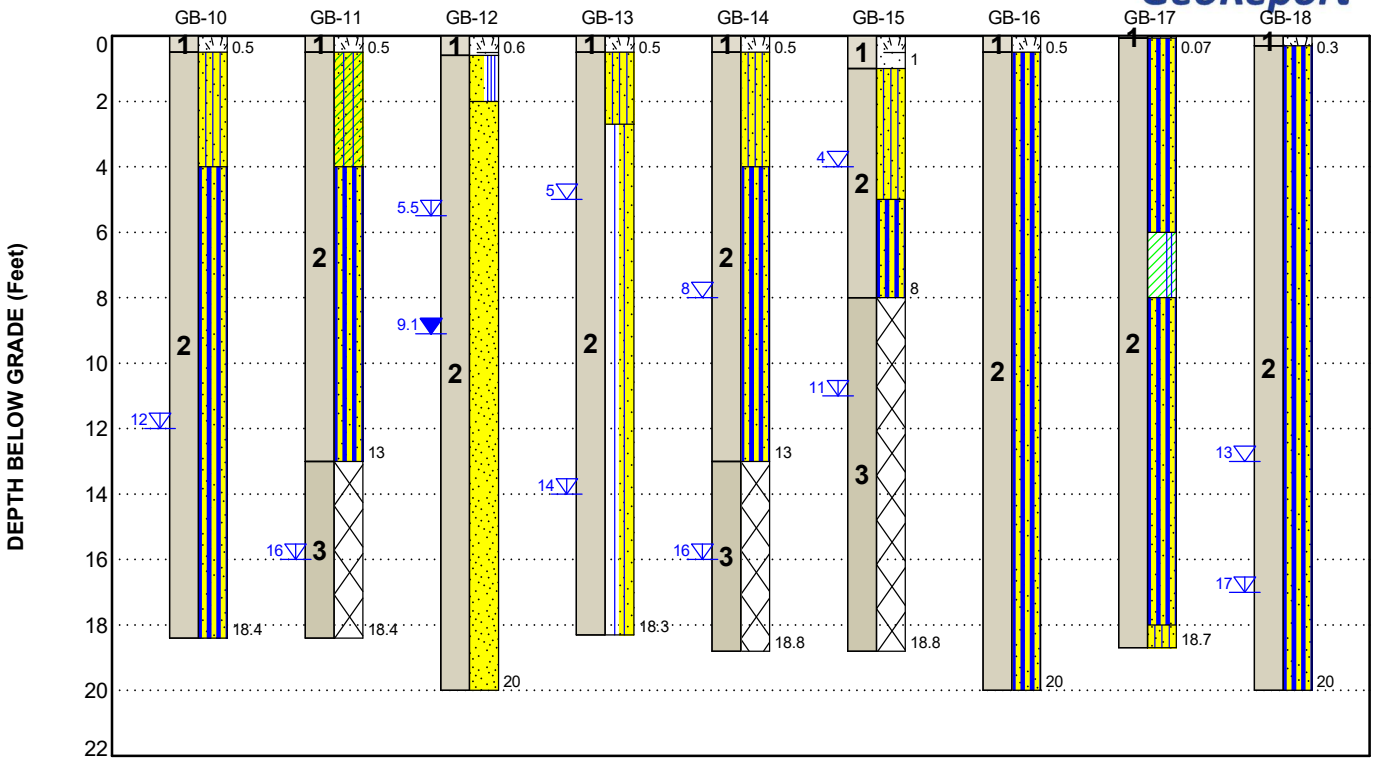
Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

GEOMODEL

Garnet Solar ■ Cayuga County, NY
Terracon Project No. J5205196

Terracon GeoReport



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2	Native Soil	Mixtures of silt and sand; some clay and gravel; contain rock/cobble fragments; brown to orange brown, red, reddish to grayish green ; loose to very dense or medium stiff to hard
3	Weathered rock	Weathered Shale; Weathered Shale; grayish green to gray green to gray

LEGEND

- Topsoil
- Silty Sand
- Sandy Silt
- Sandy Silty Clay
- Weathered Rock
- Poorly-graded Sand with Silt
- Poorly-graded Sand
- Silt with Sand
- Lean Clay with Silt

- First Water Observation
- Second Water Observation
- Third Water Observation

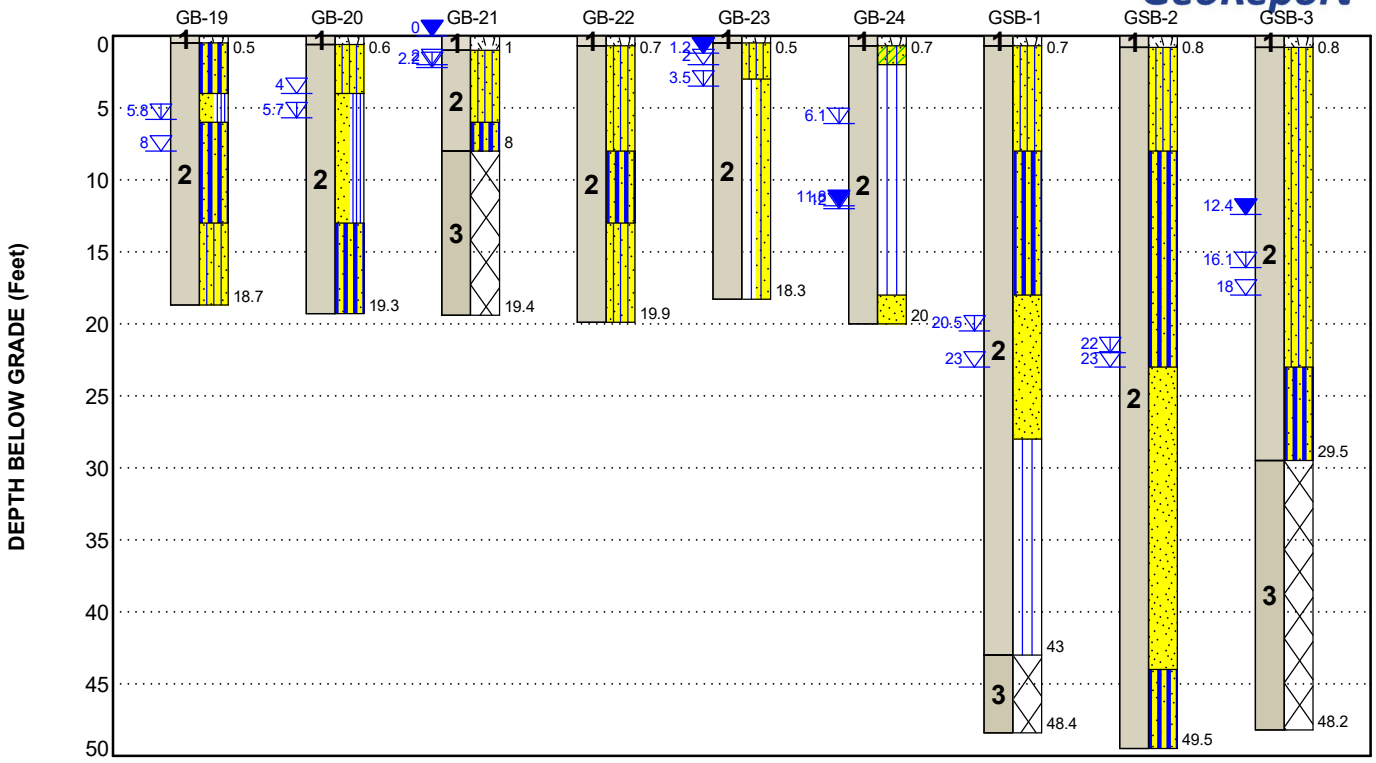
Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

GEOMODEL

Garnet Solar ■ Cayuga County, NY
Terracon Project No. J5205196

Terracon GeoReport



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Surface	Topsoil; possible reworked soil
2	Native Soil	Mixtures of silt and sand; some clay and gravel; contain rock/cobble fragments; brown to orange brown, red, reddish to grayish green ; loose to very dense or medium stiff to hard
3	Weathered rock	Weathered Shale; Weathered Shale; grayish green to gray green to gray

LEGEND

- Topsoil
- Sandy Silt
- Poorly-graded Sand with Silt
- Silty Sand
- Weathered Rock
- Silt with Sand
- Sandy Silty Clay
- Silt
- Poorly-graded Sand

- First Water Observation
- Second Water Observation
- Third Water Observation

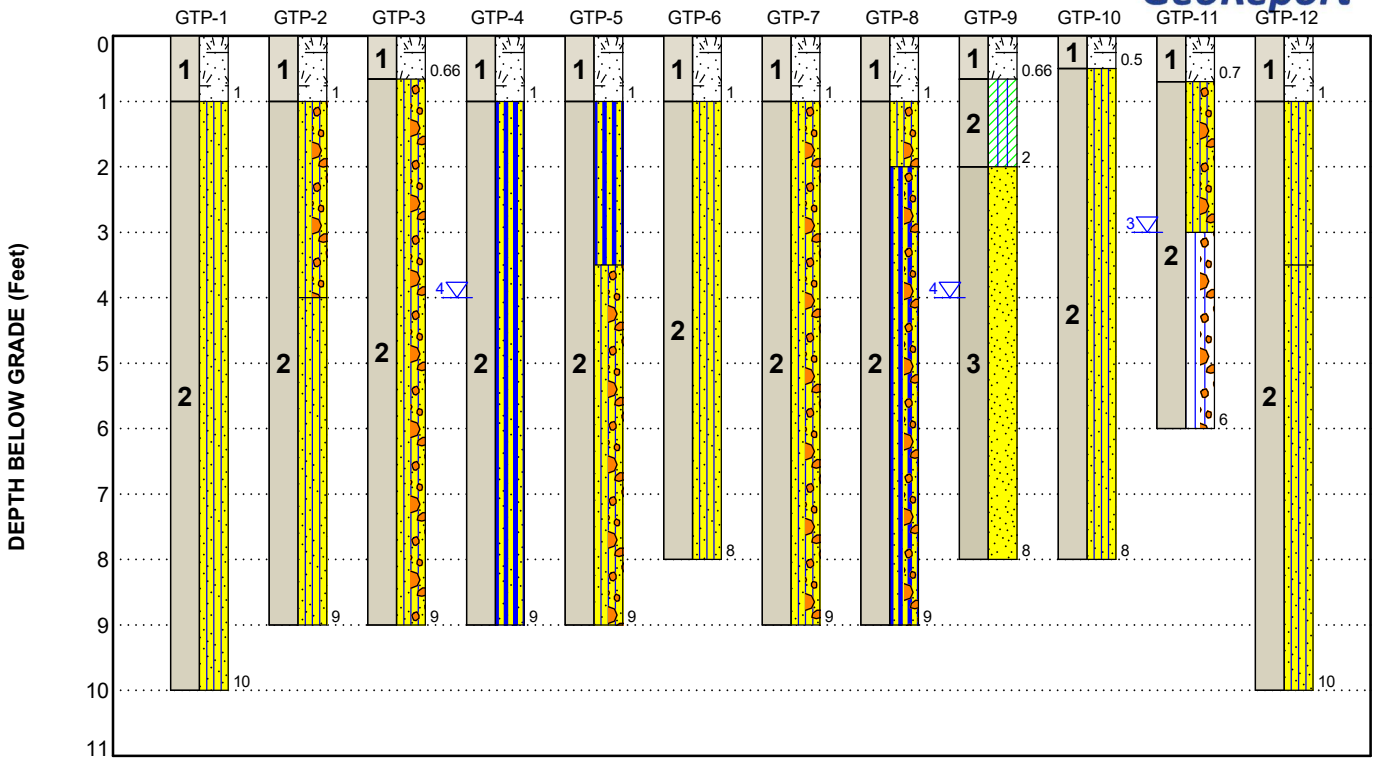
Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

GEOMODEL

Garnet Solar ■ Cayuga County, NY
Terracon Project No. J5205196

Terracon GeoReport



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	Surface	Topsoil; possible reworked soil
2	Native Soil	Mixtures of silt and sand; some clay and gravel; contain rock/cobble fragments; brown to orange brown, red, reddish to grayish green ; loose to very dense or medium stiff to hard
3	Weathered rock	Weathered Shale; Weathered Shale; grayish green to gray green to gray

LEGEND

- Topsoil
- Silty Sand
- Silty Sand with Gravel
- Sandy Silt
- Sandy Silt with gravel
- Silty Clay
- Poorly-graded Sand
- Silt with Gravel

- First Water Observation
- Second Water Observation
- Third Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

BORING LOG NO. GB-1

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1413° Longitude: -76.6539°

Approximate Surface Elev.: 425 (Ft.) +/-

MODEL LAYER	DEPTH	ELEVATION (Ft.)	
1	0.4	424.5+/-	**TOPSOIL**
			SANDY SILT (ML), orange brown, medium stiff
			Becomes very stiff
			Contains trace clay and gravel
			Becomes reddish brown; contains rock/cobble fragments, trace gravel
	7.9	417+/-	
2			**SILT (ML)**, red, hard, contains rock/cobble fragments, trace gravel
			Becomes soft and gray; trace clay and sand.
	18.0	407+/-	
3			**WEATHERED SHALE**, grayish green
	19.4	405.5+/-	
			Auger Refusal at 19.4 Feet

INSTALLATION DETAILS

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			7	2-2-4-5 N=6			
	▼		24	2-6-9-11 N=15	20.7		
5			16	3-6-9-10 N=15			
	▽		20	5-11-18-25 N=29	11.0		
			6.5	50	13.8		
10	▽						
			9	2-2-2-1 N=4	14.7		
15							
			12	14-37-50/5"			

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *10.5' BGS while drilling*
▽ *7' BGS at completion of sampling on 1/18/21*
▼ *2.8' on 3/30/21*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-18-2021 | Boring Completed: 01-18-2021
Drill Rig: CME-850 | Driller: A. Schenkel
Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

Exhibit A-011

BORING LOG NO. GB-2

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1360° Longitude: -76.6521°
Approximate Surface Elev.: 425 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS
1		0.4	424.5+/-	
2		9.3	415.5+/-	
3		18.3	406.5+/-	

TOPSOIL

LEAN CLAY WITH SILT (ML), grayish green, trace sand, CL, trace clay and sand

Contains rock/cobble fragments

Orange mottling

Becomes medium stiff

WEATHERED SHALE, grayish green

Becomes dark gray, very dense

Auger Refusal at 18.3 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			12	2-5-8-9 N=13		45-25-20	
			11	4-8-10-10 N=18	19.4		
5			21	7-8-13-13 N=21			
	▽		23	9-13-13-22 N=26	11.7		
			21	16-4-4-7 N=8	15.2		
10	▽						
			17	22-40-50/0"	11.1		
15							
			3.5	50/4"			

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *10' BGS while drilling*

▽ *6.5' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-18-2021 | Boring Completed: 01-18-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

Exhibit A-012

BORING LOG NO. GB-3

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1340° Longitude: -76.6496°

Approximate Surface Elev.: 415 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	414.5+/-									
			TOPSOIL									
			POORLY GRADED SAND WITH SILT (SP-SM), orange brown, loose to medium dense, fine grained					13	3-4-4-3 N=8			
								18	3-2-5-6 N=7	23.0		
					5			24	2-5-7-7 N=12	21.5		
			Becomes grayish brown					16	3-5-5-4 N=10	19.3		
			Becomes fine to medium grained, trace silt					17	2-3-2-4 N=5	20.3		
2					10							
								18	2-4-6-9 N=10	19.7		
					15							
								15	2-4-4-2 N=8			
		20.0	395+/-		20							
			Boring Terminated at 20 Feet									

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

2' BGS while drilling

2' BGS at completion of sampling

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-18-2021 | Boring Completed: 01-18-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GB-4

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1359° Longitude: -76.6454°
Approximate Surface Elev.: 456 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS
1		0.3	455.5+/-	
			TOPSOIL	
			SANDY SILT (ML), reddish brown, stiff, trace clay and gravel	
		6.0	450+/-	
2			**SILT (ML)**, red, hard, contains rock/cobble fragments, trace gravel	
		13.0	443+/-	
			POORLY GRADED SAND (SP), gray, very dense, contains rock/cobble fragments, trace gravel	
			Becomes medium dense	
		20.0	436+/-	
			Boring Terminated at 20 Feet	

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			18	3-3-5-6 N=8			
			20	3-5-6-6 N=11	16.4		
5			20	3-4-8-10 N=12	17.1		
			13	5-11-22-27 N=33	13.0		
			16	7-11-19-23 N=30	12.8		
10							
			14	27-50/5"	8.2		
15	▽						
			24	1-3-11-10 N=14			
20							

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *16.5' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-18-2021 | Boring Completed: 01-18-2021
Drill Rig: CME-850 | Driller: A. Schenkel
Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

BORING LOG NO. GB-5

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1371° Longitude: -76.6409°
Approximate Surface Elev.: 500 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.6	499.5+/-									
			TOPSOIL									
			SANDY SILT (ML), reddish brown, medium stiff					9	2-3-3-5 N=6			
			Becomes hard					23	2-11-20-20 N=31			
					5			21.5	17-11-19-18 N=30	8.6		
								24	11-17-19-22 N=36	8.8		
								24	11-19-19-16 N=38	8.5		
2					10							
						▽		24	10-12-20-21 N=32	19.4		
		14.5	485.5+/-		15	▽						
			POORLY GRADED SAND (SP), orange brown, dense, fine grained									
		18.0	482+/-									
			SANDY SILT (ML), red, hard, contains rock/cobble fragments, trace gravel					24	13-28-29-44 N=57			
		20.0	480+/-		20							
			Boring Terminated at 20 Feet									

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *15' BGS while drilling*

▽ *14' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-16-2021 | Boring Completed: 01-16-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GB-6

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1298° Longitude: -76.6446°
Approximate Surface Elev.: 428 (Ft.) +/-

MODEL LAYER	DEPTH	ELEVATION (Ft.)	
1	0.8	427+/-	**TOPSOIL**
2	8.0	420+/-	**SANDY SILT (ML)**, orangish brown, medium stiff to stiff, loose to medium dense Contains rock/cobble fragments. Becomes very stiff
	18.0	410+/-	**SILT (ML)**, reddish brown, hard, dense to very dense, contains fine grained sand with rock/cobble fragments, trace gravel
3	18.9	409+/-	**WEATHERED SHALE**, gray
			Auger Refusal at 18.9 Feet

DEPTH (Ft.)	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	3.5	2-4-4-8 N=8	
	11	8-14-14-27 N=28	9.5
5	20	6-11-8-9 N=19	
	16	3-6-9-14 N=15	13.0
	22	7-14-18-19 N=32	9.8
10			
	6	50/5"	8.6
15			
	12	27-50/5"	

INSTALLATION DETAILS

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

ATTERBERG LIMITS
LL-PL-PI

PERCENT FINES

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

13.7' BGS at completion of sampling on 1/8/21

2.2' on 3/30/21

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-18-2021 | Boring Completed: 01-18-2021
Drill Rig: CME-850 | Driller: A. Schenkel
Project No.: J5205196

BORING LOG NO. GB-7

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1463° Longitude: -76.6007°

Approximate Surface Elev.: 444 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.5	443.5+/-	**TOPSOIL**
				SANDY SILT (ML), red, stiff to very stiff, contains rock/cobble fragments, trace gravel
				Becomes medium stiff, contains trace clay
		6.0	438+/-	
2				**SILT (ML)**, red, hard, contains rock/cobble fragments, trace sand
		20.0	424+/-	
				Boring Terminated at 20 Feet

DEPTH (Ft.)	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	9	2-4-5-7 N=9	
	14	4-8-11-11 N=19	16.6
5	24	3-4-3-3 N=7	10.9
	24	6-19-19-16 N=38	9.5
	23	6-23-25-28 N=48	8.5
10			
	23	10-13-18-50 N=31	8.3
15			
	24	16-22-23-33 N=45	
20			

INSTALLATION DETAILS

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

ATTERBERG LIMITS — LL-PL-PI

PERCENT FINES

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-19-2021 | Boring Completed: 01-19-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GB-8

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1344° Longitude: -76.6391°
Approximate Surface Elev.: 475 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.6	474.5+/-									
			TOPSOIL									
			SILTY SAND (SM), brown, very loose to loose, fine grained					18	2-2-7-9 N=9			
								14	3-3-4-9 N=7	23.5		
			Becomes orangish brown, contains trace clay		5			15	3-1-1-2 N=2	22.7		
			Contains rock/cobble fragments					10	1-1-2-11 N=3	17.8		
		8.0	467+/-									
2			**SANDY SILT (ML)**, reddish brown, hard, trace clay					6	11-29-29-35 N=58	21.8		
					10							
			Contains rock/cobble fragments, trace gravel					12	50/5"	7.3		
					15							
		18.9	456+/-					15	35-50/5"			
			Auger Refusal at 18.9 Feet									

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-18-2021 | Boring Completed: 01-18-2021
Drill Rig: CME-850 | Driller: A. Schenkel
Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

BORING LOG NO. GB-9

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1402° Longitude: -76.6354°
Approximate Surface Elev.: 479 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.6	478.5+/-	**TOPSOIL**
2				**SILTY SAND (SM)**, reddish brown, loose, contains rock/cobble fragments, fine grained Contains trace gravel Becomes medium dense
		5.0	474+/-	
				SILT WITH SAND (ML), red, very stiff to hard, orange mottling, contains rock/cobble fragments, trace clay and gravel Becomes reddish brown Becomes very dense
		14.0	465+/-	
				POORLY GRADED SAND WITH SILT (SP-SM), brown, dense, contains rock/cobble fragments, fine to medium grained
		18.0	461+/-	
		18.4	460.5+/-	**SANDY SILT (ML)**, brown, very dense, contains rock/cobble fragments ***Auger Refusal at 18.4 Feet***

INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
				9	2-3-5-6 N=8			
				22	3-2-3-3 N=5	14.0		
	5			20	4-9-12-20 N=21	10.4		
				19	3-16-18-21 N=34			
				10	12-28-28-30 N=56	8.0		
	10							
				23	10-19-22-40 N=41	20.4		
	15							
				1	50/5"			

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-16-2021 | Boring Completed: 01-16-2021
Drill Rig: CME-850 | Driller: A. Schenkel
Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

BORING LOG NO. GB-10

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1467° Longitude: -76.6313°

Approximate Surface Elev.: 451 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	450.5+/-	**TOPSOIL**									
				SILTY SAND (SM), brown, loose to medium dense, trace clay					11	2-2-2-3 N=4			
				Becomes reddish brown, contains rock/cobble fragments, trace gravel					11	2-3-7-14 N=10	9.9		
		4.0	447+/-	**SANDY SILT (ML)**, red, hard, contains rock/cobble fragments, trace clay and gravel		5			23	4-15-18-27 N=33	12.9		
									24	11-18-16-14 N=34	9.5		
				Becomes very stiff					20	7-11-18-50/4" N=29	12.2		
2						10	▽						
									16	20-39-50/5"	12.2		
						15							
		18.4	432.5+/-						7.5	50/5"			
				Auger Refusal at 18.4 Feet									

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *12' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-15-2021 | Boring Completed: 01-15-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GB-11

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1492° Longitude: -76.6266°

Approximate Surface Elev.: 474 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	473.5+/-									
2			**TOPSOIL** **SANDY SILTY CLAY (CL-ML)**, orange brown, contains rock/cobble fragments, CL-ML, contains rock/cobble fragments Becomes very stiff					13	2-2-2-3 N=4		23-16-7	
		4.0	470+/-					6	2-6-10-14 N=16	18.2		
			SANDY SILT (ML), red and brown, hard, contains rock/cobble fragments, trace gravel		5			21	8-17-19-21 N=36	12.1		
								21	15-21-25-27 N=46	8.9		
								24	11-17-22-28 N=39	8.9		
					10							
3		13.0	461+/-					11	50/5"	7.1		
			WEATHERED SHALE, red and brown, trace gravel		15	▽						
		18.4	455.5+/-					12	50/5"			
			Auger Refusal at 18.4 Feet									

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *16' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-16-2021 | Boring Completed: 01-16-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GB-12

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1507° Longitude: -76.6225°
Approximate Surface Elev.: 425 (Ft.) +/-

MODEL LAYER	DEPTH	ELEVATION (Ft.)	
1	0.6	424.5+/-	**TOPSOIL**
	2.0	423+/-	**SILTY SAND (SP-SM)**, orangish brown, loose, fine grained
2	20.0	405+/-	**POORLY GRADED SAND (SP)**, orangish brown, medium dense, fine to medium grained Becomes brown, loose to very loose
			Boring Terminated at 20 Feet

INSTALLATION DETAILS

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			10	3-3-4-6 N=7			
			21	4-7-7-9 N=14	16.7		
5	▽		22	5-11-6-12 N=17	19.5		
			16	2-3-3-2 N=6	23.4		
	▼		17	1-1-1-17 N=2	28.8		
10							
			20	1-1-1-1 N=2	29.4		
15							
			23	2-4-6-5 N=10			
20							

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *5.5' BGS at completion of sampling on 1/16/21*

▼ *9.1' on 3/30/21*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-16-2021 | Boring Completed: 01-16-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GB-13

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1446° Longitude: -76.6083°
Approximate Surface Elev.: 434 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS
1		0.5	433.5+/-	**TOPSOIL**
				SILTY SAND (SM), orange brown, loose to medium dense, fine grained, trace clay and gravel
		2.7	431.5+/-	
2				**SILT WITH SAND (ML)**, red, very stiff to hard, contains rock/cobble fragments, trace gravel
		18.3	415.5+/-	
				Auger Refusal at 18.3 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			4	2-2-3-2 N=5			
			21	5-10-11-8 N=21	20.9		
5	▽		18	5-12-13-19 N=25	10.2		
			18	5-12-13-19 N=25	7.5		
			24	10-22-26-32 N=48	10.4		
10							
	▽		13	38-50/2"	5.7		
15							
			3	50/4"			

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *5' BGS while drilling*

▽ *14' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-19-2021 | Boring Completed: 01-19-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

Exhibit A-023

BORING LOG NO. GB-14

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1452° Longitude: -76.6258°

Approximate Surface Elev.: 515 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.5	514.5+/-	**TOPSOIL**
2		4.0	511+/-	**SILTY SAND (SM)**, orange brown, loose, contains rock/cobble fragments Contains trace clay and gravel
		13.0	502+/-	**SANDY SILT (ML)**, orange brown, stiff, contains rock/cobble fragments, trace gravel Becomes hard
3		18.8	496+/-	**WEATHERED SHALE**, orange brown Becomes reddish brown ***Auger Refusal at 18.8 Feet***

INSTALLATION DETAILS

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			11	2-2-3-3 N=5			
			9	2-2-3-7 N=5	16.7		
5			17	1-7-7-13 N=14	11.4		
	▽		21	8-12-12-17 N=24	9.9		
			16	9-34-39-48 N=73	9.1		
10							
			13	25-50/5"	6.6		
15	▽						
			12	18-20/4"			

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *8' BGS while drilling*

▽ *16' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-16-2021 | Boring Completed: 01-16-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

Exhibit A-024

BORING LOG NO. GB-15

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1412° Longitude: -76.6283°
Approximate Surface Elev.: 436 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS
1		0.0	436+/-	
		TOPSOIL, possible reworked soil		
		1.0	435+/-	
2		**SILTY SAND (SM)**, orange brown, loose, contains rock/cobble fragments, fine grained, trace clay and gravel Becomes dense		
		5.0	431+/-	
		SANDY SILT (ML), red, very stiff to hard, contains rock/cobble fragments, trace gravel		
		8.0	428+/-	
3		**WEATHERED SHALE**, red and green		
		18.8	417+/-	
		Auger Refusal at 18.8 Feet		

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			11.5	2-3-4-4 N=7			
	▽		11	10-18-18-20 N=36	12.1		
5			13	3-10-19-29 N=29	14.1		
			19	15-38-32-30 N=70	9.5		
			13	15-26-45-50/2" N=71	15.6		
10	▽						
			14	23-27-50 N=77	12.4		
15							
			11	27-50/4"			

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *4' BGS while drilling*

▽ *11' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-14-2021 | Boring Completed: 01-14-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GB-16

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1335° Longitude: -76.6281°
Approximate Surface Elev.: 451 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0.5	450.5+/-	**TOPSOIL**
2				**SANDY SILT (ML)**, reddish orange, medium stiff, trace gravel
				Becomes brown, trace clay
				Becomes red, contains rock/cobble fragments
				Becomes very stiff
				Becomes grayish brown; becomes hard
		20.0	431+/-	***Boring Terminated at 20 Feet***

DEPTH (Ft.)	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	6.5	4-4-2-2 N=6	
	22	1-1-6-13 N=7	13.5
5	20.5	2-7-12-13 N=19	10.3
	20	5-9-13-14 N=22	10.2
	22	5-9-12-15 N=21	9.9
10			
	21	8-16-16-30 N=32	15.7
15			
	23	13-12-30-40 N=42	
20			

INSTALLATION DETAILS

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

ATTERBERG LIMITS — LL-PL-PI

PERCENT FINES

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-14-2021 | Boring Completed: 01-14-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GB-17

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1357° Longitude: -76.6260°

Approximate Surface Elev.: 452 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.1	452+/-									
			TOPSOIL									
			SANDY SILT (ML), red, medium stiff to stiff, contains rock/cobble fragments, trace clay and gravel					23	4-3-5-5 N=8			
								20	3-5-6-7 N=11			
					5			18	2-4-6-7 N=10	10.5		
		6.0	446+/-									
			LEAN CLAY WITH SILT (CL-ML), reddish orange, stiff, CL, contains rock/cobble fragments, trace gravel					20.5	5-6-4-3 N=10	8.8	26-16-10	
		8.0	444+/-									
2			**SANDY SILT (ML)**, reddish orange, hard, contains rock/cobble fragments, trace gravel					20	6-12-19-25 N=31	8.9		
					10							
								12	29-50/2"	8.4		
					15							
		18.0	434+/-									
		18.7	433.5+/-					11	35-50/2"			
			SILTY SAND (SM), orange brown, very dense, contains rock/cobble fragments, fine grained, trace gravel									
			Auger Refusal at 18.7 Feet									

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-14-2021 | Boring Completed: 01-14-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

BORING LOG NO. GB-18

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1336° Longitude: -76.6195°

Approximate Surface Elev.: 462 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS
1		0.3	461.5+/-	
2		20.0	442+/-	

TOPSOIL

SANDY SILT (ML), red, stiff, trace gravel

Becomed very stiff to hard; contains rock/cobble fragments

Becomes gray, contains rock/cobble fragments

Boring Terminated at 20 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			21	2-3-6-10 N=9			
			19	10-16-16-17 N=32	9.4		
5			23	10-12-13-12 N=25	8.4		
			23	8-10-12-16 N=22	6.9		
			22	10-15-16-21 N=31	8.8		
10							
	▽		12	19-28-50/3"	17.1		
15							
	▽						
			19	8-10-10-10 N=20			
20							

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *13' BGS while drilling*

▽ *17' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-14-2021 | Boring Completed: 01-14-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

Exhibit A-028

BORING LOG NO. GB-19

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1288° Longitude: -76.6247°
Approximate Surface Elev.: 457 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	456.5+/-	**TOPSOIL**									
2				**SANDY SILT (ML)**, dark brown, medium stiff to stiff					2	2-3-4-6 N=7			
									21	3-6-8-8 N=14	10.7		
		4.0	453+/-	**POORLY GRADED GRAVEL WITH SILT (SP-SM)**, red brown, loose, fine grained		5			14	3-4-5-8 N=9	18.0		
		6.0	451+/-	**SANDY SILT (ML)**, red brown, very stiff, trace gravel					22	6-8-10-13 N=18	9.8		
									20	5-12-16-21 N=28	9.1		
						10							
		13.0	444+/-	**SILTY SAND (SM)**, red brown, very dense, fine grained, trace gravel Becomes grayish brown, contains rock/cobble fragments					14	9-25-50/4"	8.4		
						15							
		18.7	438.5+/-						10	37-50/2"			
				Auger Refusal at 18.7 Feet									

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

8' BGS while drilling

5.8' BGS at completion of sampling

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-14-2021 | Boring Completed: 01-14-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

Exhibit A-029

BORING LOG NO. GB-20

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1228° Longitude: -76.6264°
Approximate Surface Elev.: 463 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.6	462.5+/-									
			TOPSOIL									
			SILTY SAND (SM), orange brown, loose, fine grained, trace gravel					9	1-2-3-5 N=5			
								20	2-2-3-4 N=5			
		4.0	459+/-			▽						
2			**POORLY GRADED SAND WITH SILT (SP-SM)**, red brown, loose to medium dense, fine grained, trace gravel		5	▽		12	1-4-2-2 N=6	14.1		
								7.5	2-2-3-6 N=5	16.7		
								18	4-7-9-12 N=16	15.3		
					10							
		13.0	450+/-									
			SANDY SILT (ML), brown, hard, contains rock/cobble fragments, trace gravel					17	8-33-50/4"	8.8		
					15							
		19.3	443.5+/-					17	18-26-50/4"			
			Auger Refusal at 19.3 Feet									

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *4' BGS while drilling*

▽ *5.7' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-14-2021 | Boring Completed: 01-14-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GB-21

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1185° Longitude: -76.6231°
Approximate Surface Elev.: 447 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS
1		0.0	447+/-	
		TOPSOIL, possible reworked soil		
		1.0	446+/-	
2		**SILTY SAND (SM)**, orange brown, loose to medium dense, fine grained		
		6.0	441+/-	
		SANDY SILT (ML), orange brown, hard, contains rock/cobble fragments, trace gravel		
		8.0	439+/-	
3		**WEATHERED SHALE**, orange brown		
		19.4	427.5+/-	
		Auger Refusal at 19.4 Feet		

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	▽		8	1-2-3-3 N=5			
			13	1-9-11-9 N=20	13.5		
5			12	1-9-11-12 N=20	16.7		
			19	11-19-22-26 N=41	12.4		
			14	15-39-50/5"	10.8		
10							
			8	50/5"	8.0		
15							
			18	23-39-50/5"			

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *2' BGS while drilling*

▽ *2.2' BGS at completion of sampling on 1/18/2021*

0' on 3/30/21

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-20-2021 | Boring Completed: 01-20-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

Exhibit A-031

BORING LOG NO. GB-22

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1535° Longitude: -76.6090°
Approximate Surface Elev.: 449 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.7	448.5+/-									
			TOPSOIL									
			SILTY SAND (SM), red, loose to medium dense, contains rock/cobble fragments, fine grained, trace gravel					11	2-3-3-5 N=6			
								17	2-2-3-6 N=5	14.2		
					5			14	3-8-9-14 N=17	14.4		
								21	7-9-13-19 N=22	11.2		
		8.0	441+/-									
2			**SANDY SILT (ML)**, reddish brown, very stiff, contains rock/cobble fragments, trace gravel					23	9-12-13-13 N=25	10.6		
					10							
		13.0	436+/-									
			SILTY SAND (SM), reddish brown, dense to very dense, contains rock/cobble fragments, fine grained, trace gravel					20	13-18-18-22 N=36	9.5		
					15							
			Becomes fine to medium grained					23	9-17-35-50/5" N=52			
		19.9	429+/-									
			Auger Refusal at 19.9 Feet									

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-19-2021 | Boring Completed: 01-19-2021
Drill Rig: CME-850 | Driller: A. Schenkel
Project No.: J5205196

BORING LOG NO. GB-23

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1522° Longitude: -76.5986°
Approximate Surface Elev.: 490 (Ft.) +/-

MODEL LAYER	DEPTH	ELEVATION (Ft.)	
1	0.5	489.5+/-	**TOPSOIL**
			SILTY SAND (SM), orange brown, loose, contains rock/cobble fragments, trace clay
	3.0	487+/-	
2			**SILT WITH SAND (ML)**, orange brown, medium stiff, contains rock/cobble fragments, trace gravel Becomes very stiff Becomes hard Becomes grayish brown
	18.3	471.5+/-	***Auger Refusal at 18.3 Feet***

DEPTH (Ft.)	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
	8	2-3-2-2 N=5	
	19	1-1-4-11 N=5	9.4
5	11	4-8-9-26 N=17	13.3
	18	8-18-26-41 N=44	9.4
	10	30-50/5"	8.0
10	7	50/5"	9.0
15	6	50/4"	

INSTALLATION DETAILS

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

ATTERBERG LIMITS
LL-PL-PI

PERCENT FINES

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

- *2' BGS while drilling*
- *3.5' BGS at completion of sampling on 1/19/2021*
- *1.2' on 3/30/21*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-19-2021 | Boring Completed: 01-19-2021
Drill Rig: CME-850 | Driller: A. Schenkel
Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

Exhibit A-033

BORING LOG NO. GB-24

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1399° Longitude: -76.5998°
Approximate Surface Elev.: 473 (Ft.) +/-

MODEL LAYER	DEPTH	ELEVATION (Ft.)	
1	0.7	472.5+/-	**TOPSOIL**
	2.0	471+/-	**SANDY SILTY CLAY (CL-ML)**, reddish brown, medium stiff
2			**SILT (ML)**, red, very stiff, contains rock/cobble fragments, trace sand
			Becomes hard
			Becomes grayish brown
			Becomes reddish brown, trace gravel
	18.0	455+/-	
	20.0	453+/-	**POORLY GRADED SAND (SP)**, grayish brown, dense, medium grained, trace silt
			Boring Terminated at 20 Feet

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		6	2-3-2-2 N=5		21-15-6	
		18	8-12-13-16 N=25	10.3		
5		24	6-8-12-21 N=20	9.5		
		23	16-25-29-32 N=54	13.1		
		12	28-50/5"	6.3		
10						
		18	8-14-24-39 N=38	11.2		
15						
		23	16-25-22-21 N=47			
20						

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

Hammer Type: Automatic

Advancement Method:
2 inch Solid Stem Augers and 2 inch Split Spoon Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

- *12' BGS while drilling*
- *6.10' BGS at completion of sampling on 1/19/2021*
- *11.8' on 3/30/21*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-19-2021 | Boring Completed: 01-19-2021
Drill Rig: CME-850 | Driller: A. Schenkel
Project No.: J5205196

BORING LOG NO. GSB-1

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1425° Longitude: -76.6321°
Approximate Surface Elev.: 475 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	INSTALLATION DETAILS	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.7	474.5+/-							16.5	NP	39
			TOPSOIL									
			SILTY SAND (SM), brown, loose, fine grained					8	2-3-2-2 N=5	15.6		
					5			12	1-1-3-3 N=4	15.9		
								16	3-3-4-6 N=7	10.7		
		8.0	467+/-					13	22-50/4"	8.6		
			SANDY SILT (ML), brown, hard, contains rock/cobble fragments		10							
2								24	24-34-41-45 N=75	11.9		
					15							
		18.0	457+/-					23	15-25-26-30 N=51	20.3		
			POORLY GRADED SAND (SP), brown, very dense, fine grained, trace silt		20	▽						
						▽						
			Becomes orangish brown, medium grained					24	15-30-30-41 N=60	26.9		
					25							

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

Hammer Type: Automatic

Advancement Method:
3.25 inch ID Hollow Stem Augers and 2 inch OD Split Barrel Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *23' BGS while drilling*

▽ *20.5' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-14-2021 | Boring Completed: 01-15-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

Exhibit A-035

BORING LOG NO. GSB-1

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1425° Longitude: -76.6321°

Approximate Surface Elev.: 475 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2											
			POORLY GRADED SAND (SP), brown, very dense, fine grained, trace silt *(continued)*								
		28.0	447+/-								
			SILT (ML), orange and gray, hard, contains rock/cobble fragments, trace sand and gravel				11	29-50/4"	17.0		
				30							
							12	21-50/5"	10.8		
				35							
							11	21-50/5"	12.2		
				40							
		43.0	432+/-								
3			**WEATHERED SHALE**, red and gray				8	50/5"	9.8		
				45							
		48.4	426.5+/-				5	50/5"	13.9		
			Auger Refusal at 48.4 Feet								

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

Hammer Type: Automatic

Advancement Method:
3.25 inch ID Hollow Stem Augers and 2 inch OD Split Barrel Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

- *23' BGS while drilling*
- *20.5' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-14-2021 | Boring Completed: 01-15-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GSB-2

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1426° Longitude: -76.6313°
Approximate Surface Elev.: 484 (Ft.) +/-

MODEL LAYER	DEPTH	ELEVATION (Ft.)	Material Description
1	0.8	483+/-	**SILTY SAND (SM)**, orange and brown, loose, fine grained, trace gravel
			Becomes reddish brown, contains rock/cobble fragments, medium dense
	8.0	476+/-	
2			**SANDY SILT (ML)**, orange and brown, hard, contains trace clay
			Contains rock/cobble fragments
	23.0	461+/-	
			POORLY GRADED SAND (SP), orangish brown, dense to very dense, fine grained, trace silt

DEPTH (Ft.)	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		7	1-2-3-5 N=5	17.0	NP	47
		18	3-5-3-4 N=8	16.0		
5		23	2-2-4-3 N=6	17.2		
		22	3-8-14-17 N=22	8.2		
		2	50/5"	18.2		
10		12	22-50/5"	10.2		
15		13	22-50/5"	12.0		
20		20	12-21-26-34 N=47	28.5		
25						

WATER LEVEL OBSERVATIONS: ▽ 23' BGS while drilling; ▽ 22' BGS at completion of sampling

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

Hammer Type: Automatic

Advancement Method:
3.25 inch ID Hollow Stem Augers and 2 inch OD Split Barrel Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *23' BGS while drilling*

▽ *22' BGS at completion of sampling*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-15-2021 | Boring Completed: 01-15-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GSB-2

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1426° Longitude: -76.6313°

Approximate Surface Elev.: 484 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2											
			POORLY GRADED SAND (SP), orangish brown, dense to very dense, fine grained, trace silt *(continued)*								
						X	24	13-21-24-36 N=45	22.9		
				30							
						X	24	17-22-36-50 N=58	23.2		
				35							
						X	13	17-50/5"	22.1		
				40							
		44.0	440+/-			X	17.5	17-40-50/5"	8.8		
			SANDY SILT (ML), red and gray, hard, contains rock/cobble fragments	45							
		49.5	434.5+/-			X	15	17-31-50 N=81	11.9		
			Auger Refusal at 49.5 Feet								

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

Hammer Type: Automatic

Advancement Method:
3.25 inch ID Hollow Stem Augers and 2 inch OD Split Barrel Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

23' BGS while drilling

22' BGS at completion of sampling

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-15-2021 | Boring Completed: 01-15-2021

Drill Rig: CME-850 | Driller: A. Schenkel

Project No.: J5205196

BORING LOG NO. GSB-3

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan
Latitude: 43.1423° Longitude: -76.6318°
Approximate Surface Elev.: 479 (Ft.) +/-

MODEL LAYER	DEPTH	ELEVATION (Ft.)	LOG_DESCRIPTION	DEPTH (Ft.)	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)
1	0.8	478+/-	**SILTY SAND (SM)**, orangish brown, loose to medium dense, fine grained, trace clay and gravel		12	2-4-3-2 N=7	
					21	2-2-4-4 N=6	18.5
				5	9	2-2-2-1 N=4	18.6
					15	5-10-8-8 N=18	18.3
			Contains rock/cobble fragments		20	4-8-10-11 N=18	10.8
				10			
2			Becomes dense to very dense		19	9-20-19-26 N=39	18.8
				15			
					19	18-24-26-36 N=50	18.8
				20			
	23.0	456+/-	**SANDY SILT (ML)**, grayish brown, hard		21	13-28-30-32 N=58	17.7
				25			

INSTALLATION DETAILS

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

ATTERBERG LIMITS — LL-PL-PI

PERCENT FINES

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

Hammer Type: Automatic

Advancement Method:
3.25 inch ID Hollow Stem Augers and 2 inch OD Split Barrel Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

- 18' BGS while drilling
- 16.1' BGS at completion of sampling on 1/15/21
- 12.4' on 3/30/21

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-15-2021 | Boring Completed: 01-15-2021
Drill Rig: CME-850 | Driller: A. Schenkel
Project No.: J5205196

BORING LOG NO. GSB-3

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1423° Longitude: -76.6318°

Approximate Surface Elev.: 479 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	RECOVERY (In.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
2											
			SANDY SILT (ML), grayish brown, hard *(continued)*								
			Contains rock/cobble fragments			X	21	8-16-32-40 N=48	9.5		
		29.5	449.5+/-	30							
3			**WEATHERED SHALE**, grayish brown								
						X	13	15-36-50 N=86	9.4		
				35							
						X	14	16-34-50/5"	9.0		
				40							
						X	5	50/5"	13.8		
				45							
		48.2	431+/-			X	2	50/2"	14.1		
			Auger Refusal at 48.2 Feet								

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

Hammer Type: Automatic

Advancement Method:
3.25 inch ID Hollow Stem Augers and 2 inch OD Split Barrel Sampler

Abandonment Method:
Boring backfilled with cuttings upon completion

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

- *18' BGS while drilling*
- *16.1' BGS at completion of sampling on 1/15/21*
- *12.4' on 3/30/21*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Boring Started: 01-15-2021 | Boring Completed: 01-15-2021
Drill Rig: CME-850 | Driller: A. Schenkel
Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

TEST PIT LOG NO. GTP-1

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1494° Longitude: -76.6071°

Approximate Surface Elev.: 440 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**TOPSOIL**, possible reworked soil							
		1.0	439+/-						
2		**SILTY SAND (SM)**, brown, contains cobbles					16.5	NP	34
				5					
		10.0	430+/-						
		Test Pit Terminated at 10 Feet		10					

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-15-2020
Test Pit Completed: 12-15-2020
Excavator: Backhoe
Operator: T. Wooden
Project No.: J5205196

TEST PIT LOG NO. GTP-2

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1408° Longitude: -76.6517°

Approximate Surface Elev.: 438 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**TOPSOIL**, possible reworked soil							
		1.0	437+/-						
		SILTY SAND WITH GRAVEL (SM), brown							
		4.0	434+/-						
2		**SILTY SAND (SM)**, with gravel, light brown		5					
		9.0	429+/-						
		Test Pit Terminated at 9 Feet							

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-15-2020 | Test Pit Completed: 12-15-2020

Excavator: Backhoe | Operator: T. Wooden

Project No.: J5205196

TEST PIT LOG NO. GTP-3

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1356° Longitude: -76.6406°

Approximate Surface Elev.: 502 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**TOPSOIL**, possible reworked soil							
		0.7	501.5+/-						
2		**SILTY SAND WITH GRAVEL (SM)**, trace cobbles, brown		5			14.3	NP	35
		9.0	493+/-						
		Test Pit Terminated at 9 Feet							

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-15-2020 | Test Pit Completed: 12-15-2020

Excavator: Backhoe | Operator: T. Wooden

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

TEST PIT LOG NO. GTP-4

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1285° Longitude: -76.6430°

Approximate Surface Elev.: 472 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**TOPSOIL**, possible reworked soil							
		1.0	471+/-						
2		**SANDY SILT (ML)**, with gravel, reddish brown			▽				
		Becomes dry and hard		5					
		9.0	463+/-						
		Test Pit Terminated at 9 Feet							

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *4' BGS possible perched water encountered*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-15-2020
Test Pit Completed: 12-15-2020
Excavator: Backhoe
Operator: T. Wooden
Project No.: J5205196

TEST PIT LOG NO. GTP-5

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1441° Longitude: -76.6320°

Approximate Surface Elev.: 470 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION
1		0	469+/-	**TOPSOIL**, possible reworked soil
		1.0		
		1.0	469+/-	**SANDY SILT (ML)**, reddish brown
		3.5	466.5+/-	
2		3.5	466.5+/-	**SILTY SAND WITH GRAVEL (SM)**, trace cobbles, light brown
		9.0	461+/-	
		9.0		***Test Pit Terminated at 9 Feet***

DEPTH (Ft.): 5

WATER LEVEL OBSERVATIONS | SAMPLE TYPE | WATER CONTENT (%) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-15-2020 | Test Pit Completed: 12-15-2020

Excavator: Backhoe | Operator: T. Wooden

Project No.: J5205196

TEST PIT LOG NO. GTP-6

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1362° Longitude: -76.6170°

Approximate Surface Elev.: 450 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**TOPSOIL**, possible reworked soil							
		1.0	449+/-						
2		**SILTY SAND (SM)**, trace gravel and cobbles, reddish brown					18.1	NP	44
		8.0	442+/-	5					
		Test Pit Terminated at 8 Feet							

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-15-2020
Test Pit Completed: 12-15-2020
Excavator: Backhoe
Operator: T. Wooden
Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

Exhibit A-046

TEST PIT LOG NO. GTP-7

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1319° Longitude: -76.6248°

Approximate Surface Elev.: 485 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**TOPSOIL**, possible reworked soil							
		1.0	484+/-						
2		**SILTY SAND WITH GRAVEL (SM)**, trace cobbles, reddish brown		5			10.8	NP	48
		9.0	476+/-						
		Test Pit Terminated at 9 Feet							

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-16-2020 | Test Pit Completed: 12-16-2020

Excavator: Backhoe | Operator: T. Wooden

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

TEST PIT LOG NO. GTP-8

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1248° Longitude: -76.6217°

Approximate Surface Elev.: 436 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**TOPSOIL**, possible reworked soil							
		1.0	435+/-						
2		**SILTY SAND WITH GRAVEL (SM)**, brown							
		2.0	434+/-						
		SANDY SILT WITH GRAVEL (ML), contains rock/cobble fragments, reddish brown		5			11.0	NP	44
		9.0	427+/-						
		Test Pit Terminated at 9 Feet							

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-16-2020 | Test Pit Completed: 12-16-2020

Excavator: Backhoe | Operator: T. Wooden

Project No.: J5205196

TEST PIT LOG NO. GTP-9

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1166° Longitude: -76.6192°

Approximate Surface Elev.: 419 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**TOPSOIL**, possible reworked soil							
		0.7	418.5+/-						
2		**SILTY CLAY (CL-ML)**, brown to gray							
		2.0	417+/-						
3		**POORLY GRADED SAND (SP)**, trace silt, brown		5	▽			NP	
		Becomes gray							
		8.0	411+/-						
		Test Pit Terminated at 8 Feet							

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *4' BGS at completion of excavation*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-16-2020 | Test Pit Completed: 12-16-2020

Excavator: Backhoe | Operator: T. Wooden

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

TEST PIT LOG NO. GTP-10

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1460° Longitude: -76.5999°

Approximate Surface Elev.: 448 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.5	447.5+/-						
2			**TOPSOIL** **SILTY SAND (SM)**, trace rock/cobble fragments, brown	5			9.4	NP	22
		8.0	440+/-						
			Test Pit Terminated at 8 Feet						

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-16-2020 | Test Pit Completed: 12-16-2020

Excavator: Backhoe | Operator: T. Wooden

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

TEST PIT LOG NO. GTP-11

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1347° Longitude: -76.6527°

Approximate Surface Elev.: 419 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		0.7	418.5+/-						
			TOPSOIL, possible reworked soil						
2		3.0	416+/-	5	▽		12.1		41
			SILTY SAND WITH GRAVEL (SM), brown						
		6.0	413+/-						
			SILT WITH GRAVEL (ML), reddish brown, hard excavating						
			Test Pit Terminated at 6 Feet						

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

▽ *3' BGS possible perched water encountered*

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-16-2020 | Test Pit Completed: 12-16-2020

Excavator: Backhoe | Operator: T. Wooden

Project No.: J5205196

TEST PIT LOG NO. GTP-12

PROJECT: Garnet Solar

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

SITE: Town of Conquest
Cayuga County, NY

LOCATION See Exploration Plan

Latitude: 43.1482° Longitude: -76.6211°

Approximate Surface Elev.: 433 (Ft.) +/-

MODEL LAYER	GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		1.0	432+/-	**TOPSOIL**, possible reworked soil						
2		3.5	429.5+/-	**SILTY SAND (SM)**, trace gravel, reddish brown				16.8	NP	43
2		10.0	423+/-	**SILTY SAND (SM)**, light brown	5					
				Test Pit Terminated at 10 Feet	10					

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

Advancement Method:
Backhoe with 18" Bucket

Abandonment Method:
Test Pit backfilled with Excavated Soil

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

Elevations were interpolated USGS

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

Test Pit Started: 12-16-2020 | Test Pit Completed: 12-16-2020

Excavator: Backhoe | Operator: T. Wooden

Project No.: J5205196

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 4/19/21

Exhibit A-052

Test Pit GTP-1

Test Pit GTP-2

Test Pit GTP-3

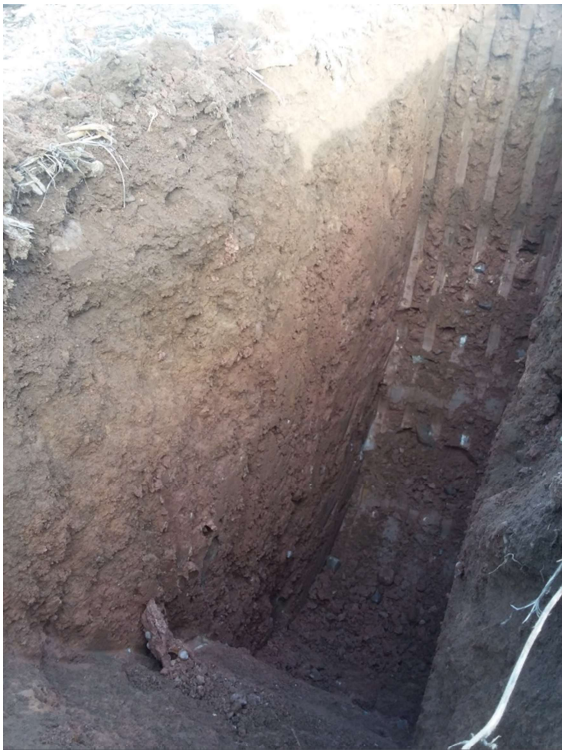
Test Pit GTP-4

Test Pit GTP-5

Test Pit GTP-6

Test Pit GTP-7

Test Pit GTP-8



Test Pit GTP-9

Test Pit GTP-10

Test Pit GTP-11

Test Pit GTP-12

INFILTRATION TEST DATA SUMMARY

Garnet Solar ■ Conquest, Cayuga County, New York
Terracon Project No. J5205196

Weather: Overcast, 30's-degree F
Test Date: January 20-21, 2021

Tester: Travis Wooden

Test Location	Test Depth (feet)	Depth to Water level [1] (feet)	Soil Classification	Trial Number	Water Drop (inches)	Elapsed Time (hours)	Infiltration Rate (inches/hour)
IT-GB1	4.9	3.0	Sandy Silt (ML)	1	0	1	0
				2	0	1	0
				3	0	1	0
				4	0	1	0
				Average infiltration rate for the two trials was 0 inches per hour. Infiltration rate of the final trial was 0 inches per hour.			
IT-GB2	5.0	2.9	Silt, trace clay and sand (ML)	1	0	1	0
				2	0	1	0
				3	0	1	0
				4	0	1	0
				Average infiltration rate for the two trials was 0 inches per hour. Infiltration rate of the final trial was 0 inches per hour.			
ITGB6	5.0	2.5	Sandy Silt (ML)	1	0	1	0
				2	0	1	0
				3	0	1	0
				4	0	1	0
				Average infiltration rate for the two trials was 0 inches per hour. Infiltration rate of the final trial was 0 inches per hour.			
IT-GB10	4.8	3.0	Sandy Silt, trace clay (ML)	1	0	1	0
				2	0	1	0
				3	0	1	0
				4	0	1	0
				Average infiltration rate for the two trials was 0 inches per hour. Infiltration rate of the final trial was 0 inches per hour.			
IT-GB16	4.8	3.0	Sandy Silt, trace gravel (ML)	1	0	1	0
				2	0	1	0
				3	0	1	0
				4	0	1	0
				Average infiltration rate for the two trials was 0 inches per hour. Infiltration rate of the final trial was 0 inches per hour.			
IT-GB18	5.0	3.6	Sandy Silt, trace gravel (ML)	1	5	1	5
				2	4	1	4
				3	4	1	4
				4	3	1	3
				Average infiltration rate for the two trials was 4 inches per hour. Infiltration rate of the final trial was 3 inches per hour.			

INFILTRATION TEST DATA SUMMARY

Garnet Solar ■ Conquest, Cayuga County, New York
Terracon Project No. J5205196

Weather: Overcast, 30's-degree F
Test Date: January 20-21, 2021

Tester: Travis Wooden

Test Location	Test Depth (feet)	Depth to Water level [1] (feet)	Soil Classification	Trial Number	Water Drop (inches)	Elapsed Time (hours)	Infiltration Rate (inches/hour)
IT-GB21	4.9	3.0	Silty Sand (SM)	1	8	1	8
				2	7	1	7
				3	6	1	6
				4	6	1	6
				Average infiltration rate for the two trials was 6.7 inches per hour. Infiltration rate of the final trial was 6 inches per hour.			
IT-GB22	4.9	2.9	Sandy Silt, trace gravel (ML)	1	0	1	0
				2	0	1	0
				3	0	1	0
				4	0	1	0
				Average infiltration rate for the two trials was 0 inches per hour. Infiltration rate of the final trial was 0 inches per hour.			
IT-GB24	5.0	2.2	Sandy Silty Clay (CL-ML)	1	0	1	0
				2	0	1	0
				3	0	1	0
				4	0	1	0
				Average infiltration rate for the two trials was 0 inches per hour. Infiltration rate of the final trial was 0 inches per hour.			
IT-GSB3	4.8	4.1	Sandy Silt, trace clay and gravel (ML)	1	3	1	3
				2	3	1	3
				3	3	1	3
				4	2	1	2
				Average infiltration rate for the two trials was 2.7 inches per hour. Infiltration rate of the final trial was 2 inches per hour.			

1. Groundwater was encountered and recorded in each borehole before starting the infiltration testing.

Note: Testing was conducted in general accordance with Appendix D of the New York State Storm Water Management Design Manual.

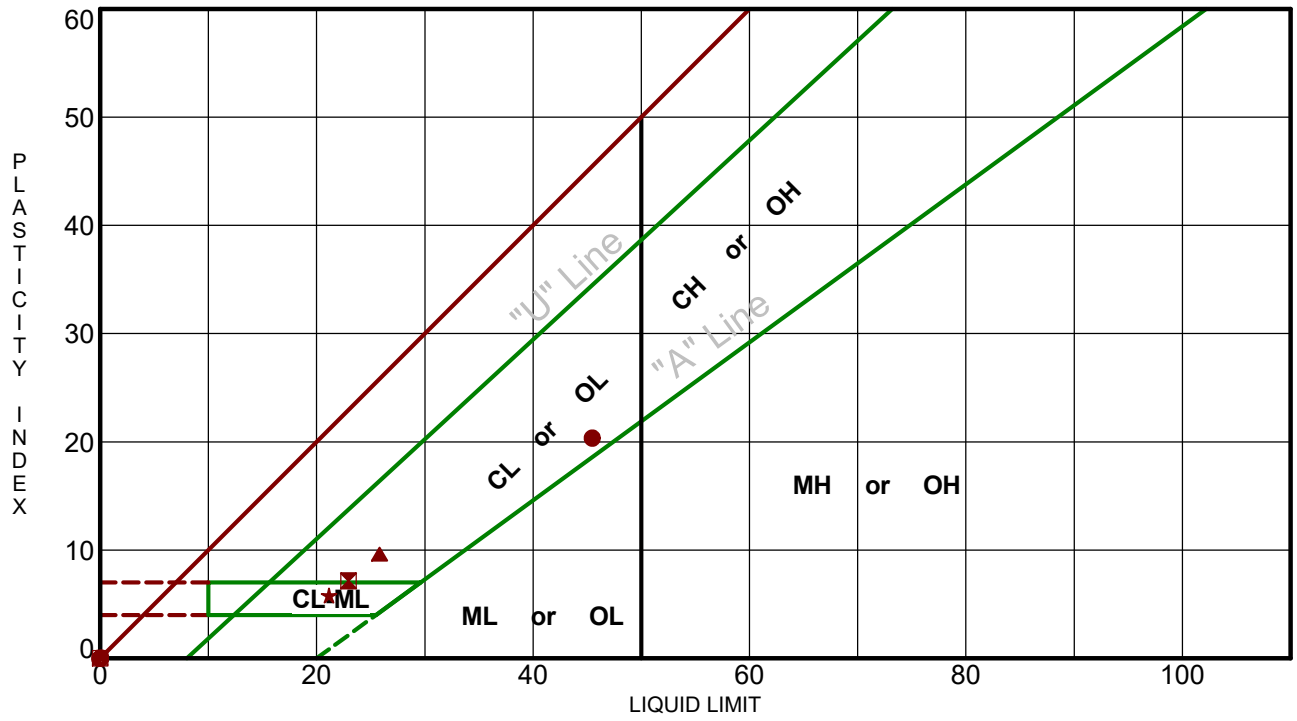
APPENDIX B – LABORATORY TESTING

Contents:

Note: All attachments are one page unless noted above.

ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID		Depth	LL	PL	PI	Fines	USCS	Description
●	GB-2	0 - 2	45	25	20		CL	Lean Clay with Silt
⊠	GB-11	0 - 2	23	16	7		CL-ML	Sandy Silty Clay
▲	GB-17	6 - 8	26	16	10		CL	Lean Clay with Silt
★	GB-24	0 - 2	21	15	6		CL-ML	Sandy Silty Clay
⊙	GSB-1	1 - 4	NP	NP	NP	39.3	SM	SILTY SAND
✿	GSB-2	1 - 4	NP	NP	NP	46.8	SM	SILTY SAND
○	GTP-1	1 - 4	NP	NP	NP	33.9	SM	SILTY SAND
△	GTP-3	1 - 4	NP	NP	NP	34.7	SM	SILTY SAND with GRAVEL
⊗	GTP-6	1 - 4	NP	NP	NP	43.7	SM	SILTY SAND
⊕	GTP-7	1 - 4	NP	NP	NP	48.3	SM	SILTY SAND with GRAVEL
□	GTP-8	1 - 4	NP	NP	NP	43.7	SM	SILTY SAND with GRAVEL
⊠	GTP-9	1 - 4	NP	NP	NP		SP	Poorly Graded Sand
◕	GTP-10	1 - 4	NP	NP	NP	21.8	SM	SILTY SAND
☆	GTP-12	1 - 4	NP	NP	NP	42.7	SM	SILTY SAND

PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

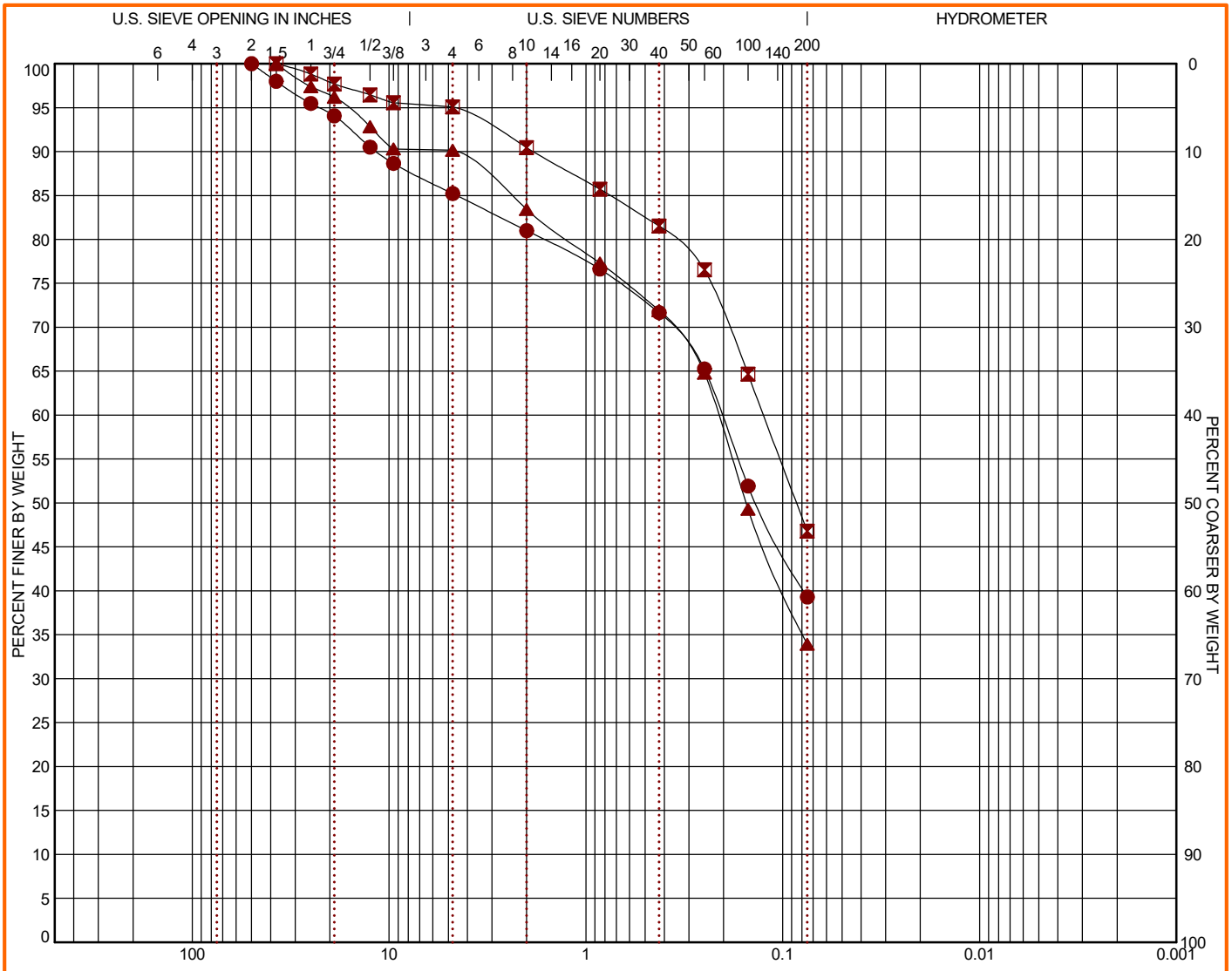
Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

Exhibit B-001

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
●	GSB-1	1 - 4	0.0	14.8	45.9		39.3		SM
⊠	GSB-2	1 - 4	0.0	4.9	48.3		46.8		SM
▲	GTP-1	1 - 4	0.0	9.9	56.2		33.9		SM

GRAIN SIZE	●	⊠	▲
D_{60}	0.204	0.125	0.213
D_{30}			
D_{10}			

COEFFICIENTS	●	⊠	▲
C_C			
C_U			

●		⊠		▲	
Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
2"	100.0	1 1/2"	100.0	1 1/2"	100.0
1 1/2"	98.0	1"	98.82	1"	97.39
1"	95.47	3/4"	97.69	3/4"	96.19
3/4"	94.06	1/2"	96.46	1/2"	92.83
1/2"	90.5	3/8"	95.55	3/8"	90.3
3/8"	88.65	#4	95.09	#4	90.15
#4	85.21	#10	90.45	#10	83.42
#10	80.99	#20	85.72	#20	77.32
#20	76.63	#40	81.52	#40	71.91
#40	71.66	#60	76.54	#60	64.8
#60	65.26	#100	64.66	#100	49.29
#100	51.93	#200	46.79	#200	33.92
#200	39.3				

SOIL DESCRIPTION	
●	SILTY SAND (SM)
⊠	SILTY SAND (SM)
▲	SILTY SAND (SM)

REMARKS	
●	
⊠	
▲	

PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

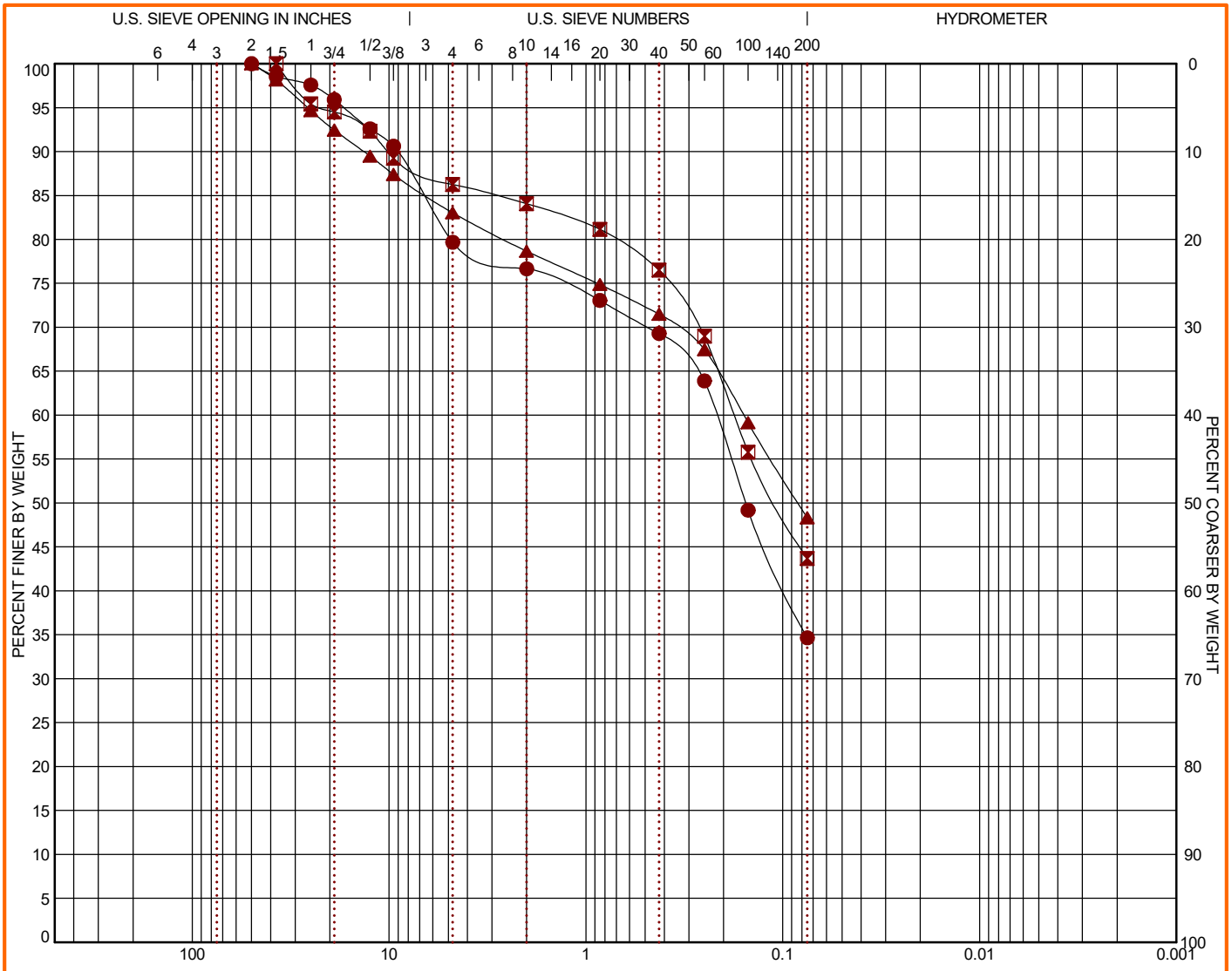
CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-002

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
●	GTP-3	1 - 4	0.0	20.3	45.0		34.7		SM
⊠	GTP-6	1 - 4	0.0	13.7	42.6		43.7		SM
▲	GTP-7	1 - 4	0.0	17.0	34.7		48.3		SM

GRAIN SIZE	●	⊠	▲
D_{60}	0.218	0.177	0.158
D_{30}			
D_{10}			

COEFFICIENTS	●	⊠	▲
C_C			
C_U			

●		⊠		▲	
Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
2"	100.0	1 1/2"	100.0	2"	100.0
1 1/2"	98.56	1"	95.42	1 1/2"	98.15
1"	97.58	3/4"	94.5	1"	94.66
3/4"	95.91	1/2"	92.32	3/4"	92.44
1/2"	92.58	3/8"	89.23	1/2"	89.48
3/8"	90.62	#4	86.25	3/8"	87.4
#4	79.67	#10	84.06	#4	83.03
#10	76.66	#20	81.15	#10	78.66
#20	73.05	#40	76.5	#20	74.87
#40	69.29	#60	68.98	#40	71.49
#60	63.9	#100	55.78	#60	67.46
#100	49.18	#200	43.67	#100	59.15
#200	34.65			#200	48.32

SOIL DESCRIPTION	
●	SILTY SAND with GRAVEL (SM)
⊠	SILTY SAND (SM)
▲	SILTY SAND with GRAVEL (SM)

REMARKS	
●	
⊠	
▲	

PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

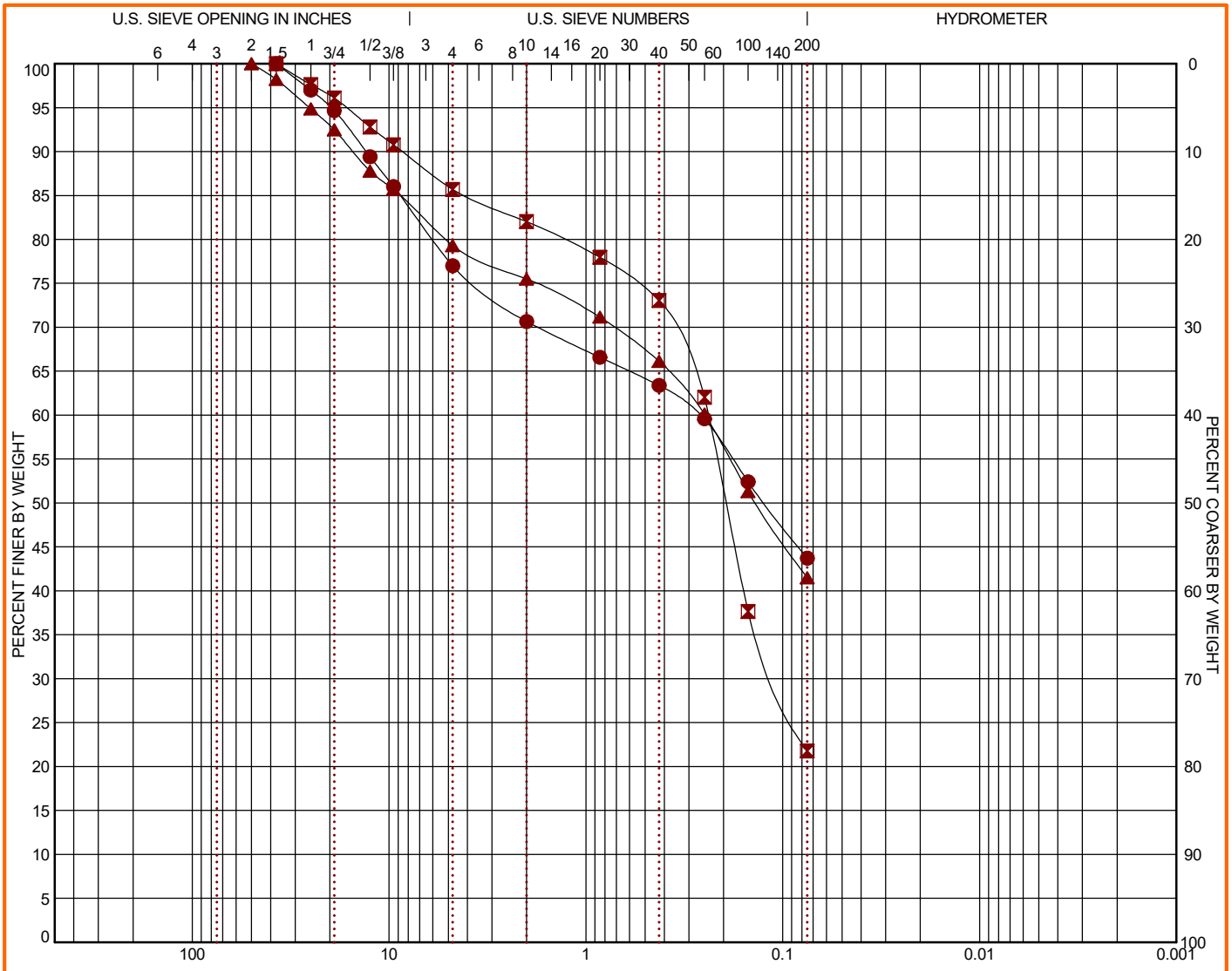
CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-003

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
●	GTP-8	1 - 4	0.0	23.0	33.3		43.7		SM
⊠	GTP-10	1 - 4	0.0	14.3	63.9		21.8		SM
▲	GTP-11	1 - 4	0.0	20.7	37.8		41.5		SM

GRAIN SIZE	●	⊠	▲
D_{60}	0.265	0.24	0.248
D_{30}		0.107	
D_{10}			

COEFFICIENTS	●	⊠	▲
C_C			
C_U			

● Sieve	● % Finer	⊠ Sieve	⊠ % Finer	▲ Sieve	▲ % Finer
1 1/2"	100.0	1 1/2"	100.0	2"	100.0
1"	96.99	1"	97.63	1 1/2"	98.21
3/4"	94.66	3/4"	96.1	1"	94.86
1/2"	89.4	1/2"	92.79	3/4"	92.47
3/8"	86.02	3/8"	90.78	1/2"	87.78
#4	77.0	#4	85.69	3/8"	85.69
#10	70.65	#10	82.02	#4	79.3
#20	66.58	#20	77.98	#10	75.5
#40	63.38	#40	73.04	#20	71.15
#60	59.59	#60	62.02	#40	66.13
#100	52.41	#100	37.66	#60	60.13
#200	43.72	#200	21.77	#100	51.29
				#200	41.5

SOIL DESCRIPTION	
●	SILTY SAND with GRAVEL (SM)
⊠	SILTY SAND (SM)
▲	SILTY SAND with GRAVEL (SM)

REMARKS	
●	
⊠	
▲	

PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

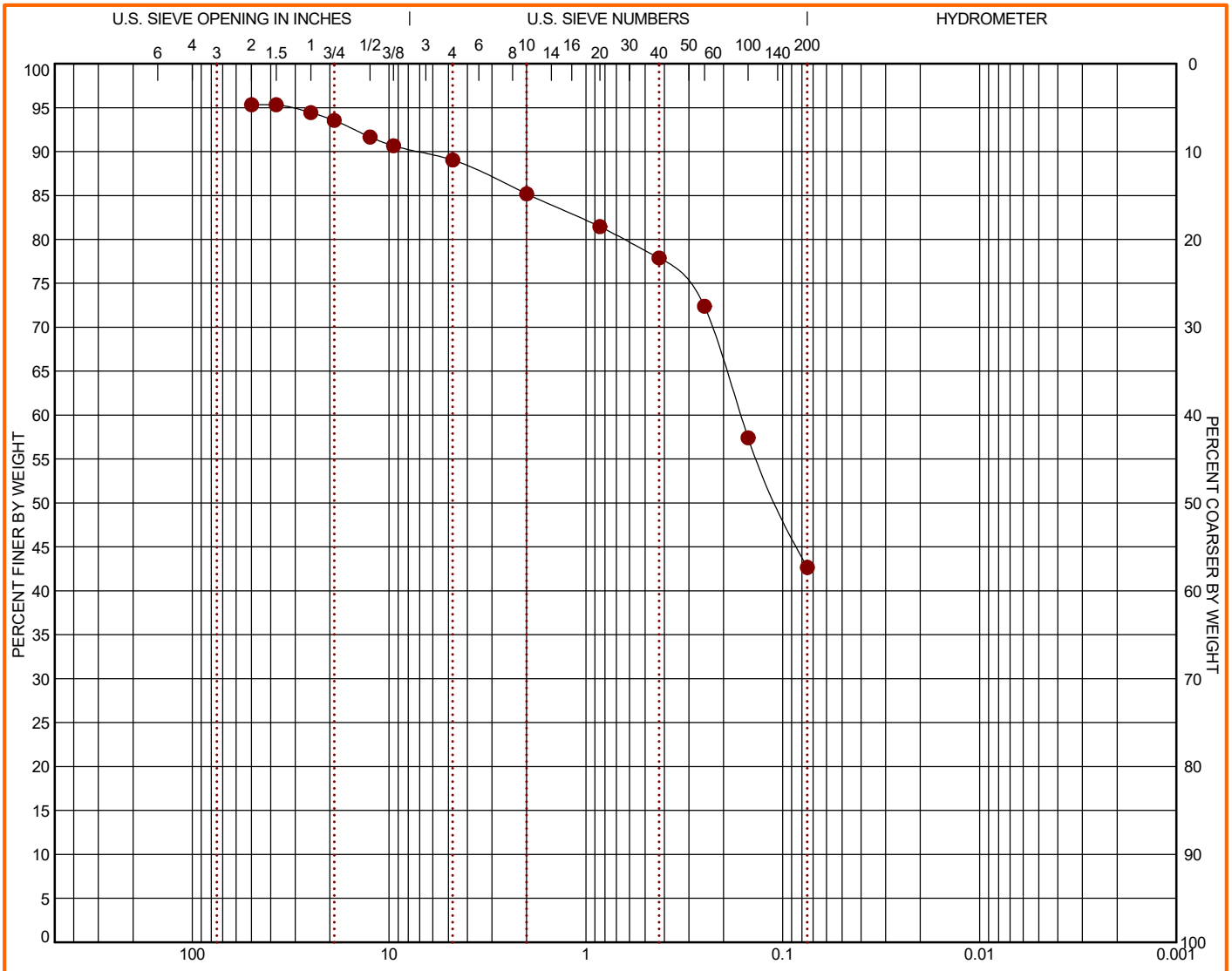
CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS 1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-004

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
●	GTP-12	1 - 4		6.3	46.4		42.7		SM

GRAIN SIZE			
	●		
D_{60}	0.164		
D_{30}			
D_{10}			

COEFFICIENTS			
	●		
C_C			
C_U			

● Sieve	% Finer	Sieve	% Finer	Sieve	% Finer
2"	95.33				
1 1/2"	95.33				
1"	94.43				
3/4"	93.54				
1/2"	91.65				
3/8"	90.66				
#4	89.04				
#10	85.18				
#20	81.46				
#40	77.89				
#60	72.39				
#100	57.42				
#200	42.67				

SOIL DESCRIPTION	
●	SILTY SAND (SM)

REMARKS	
●	

PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

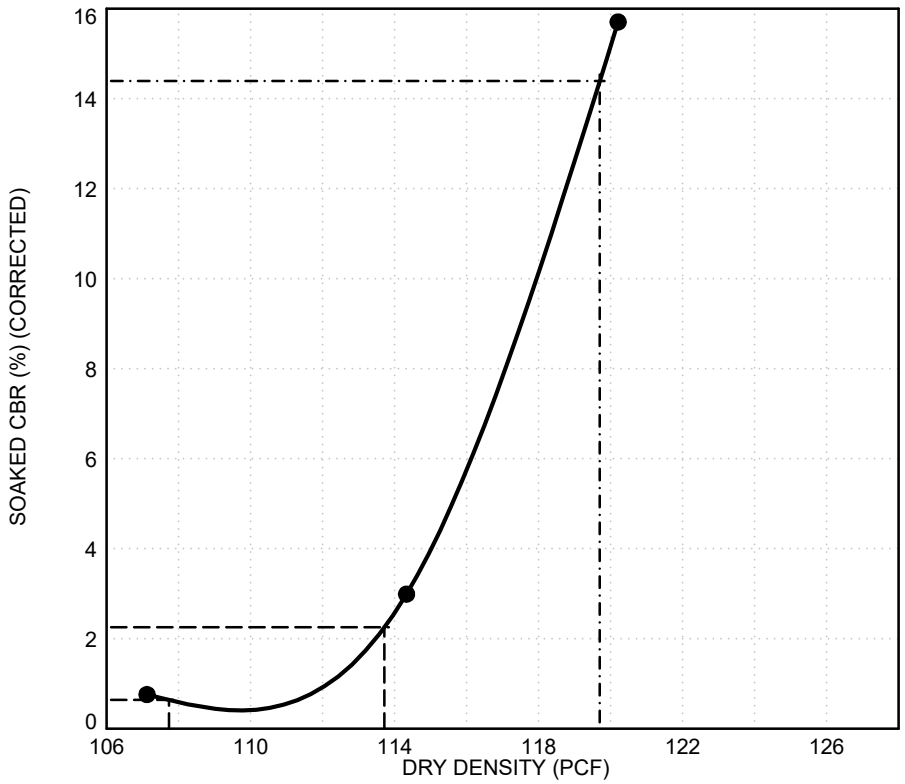
GRAIN SIZE: USCS 1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT.

Exhibit B-005

CALIFORNIA BEARING RATIO

ASTM D1883-07[2]



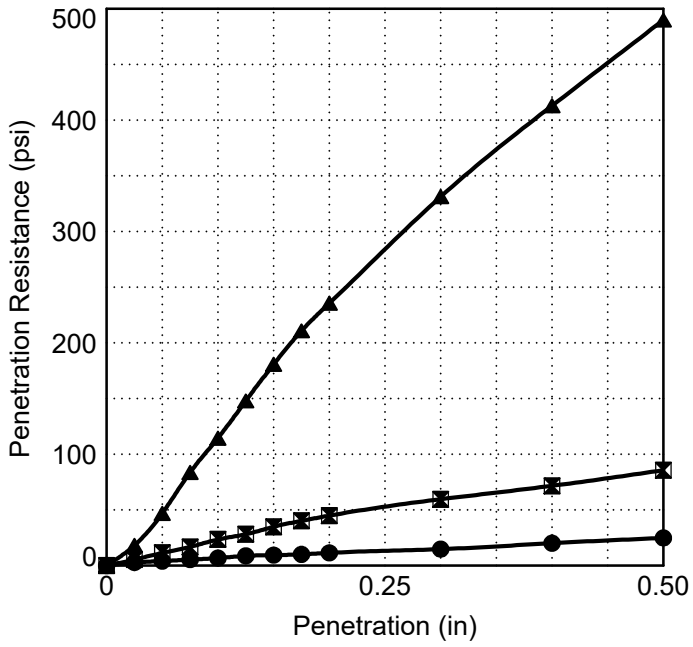
Source of Material **GTP-1 1 to 4 feet**

Description of Material **SILTY SAND(SM)**

Remarks:

Corrected Percent Fines **33.9 %**

Atterberg Limits LL **NP** PL **NP** PI **NP**



Sample No.	1	2	3
Sample Condition	Soaked		
Compaction Method	ASTM 698A		
Maximum Dry Density, (pcf)	119.7	119.7	119.7
Optimum Moisture Content, (%)	11.4	11.4	11.4
Dry Density before Soaking, (pcf)	107.12	114.33	120.21
Moisture Content, (%)			
After Compaction	10.3	10.3	10.3
Top 1" After Soaking	16.7	16.6	13
Surcharge,. (lbs)	10.00	10.00	10.00
Swell, (%)	0.11	0.13	0.22
Bearing Ratio, (%)	0.8	3.0	15.7

Dry Density @ 90% 107.7 pcf

Dry Density @ 95% 113.7 pcf

Dry Density @ 100% 119.7 pcf

CBR @ 90% Density 0.6

CBR @ 95% Density 2.3

CBR @ 100% Density 14.4

PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

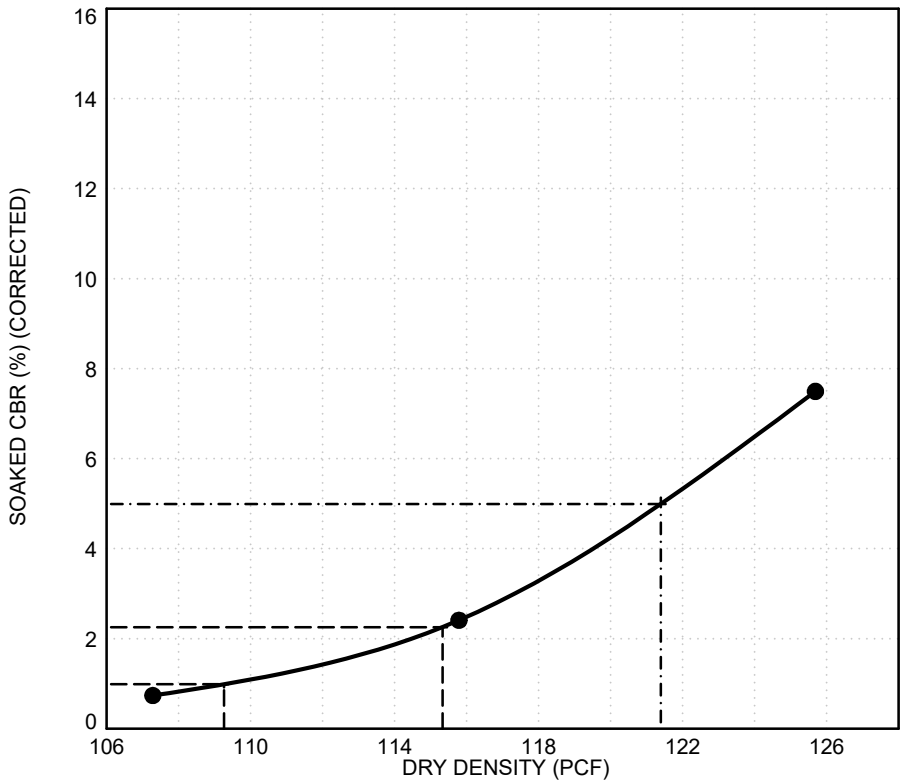
CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CBR 3PT REPORT J5205196 GARNET SOLAR.GPJ 02195238 US 50 AND CHIPMAN.GPJ 2/1/21

Exhibit B-006

CALIFORNIA BEARING RATIO

ASTM D1883-07[2]



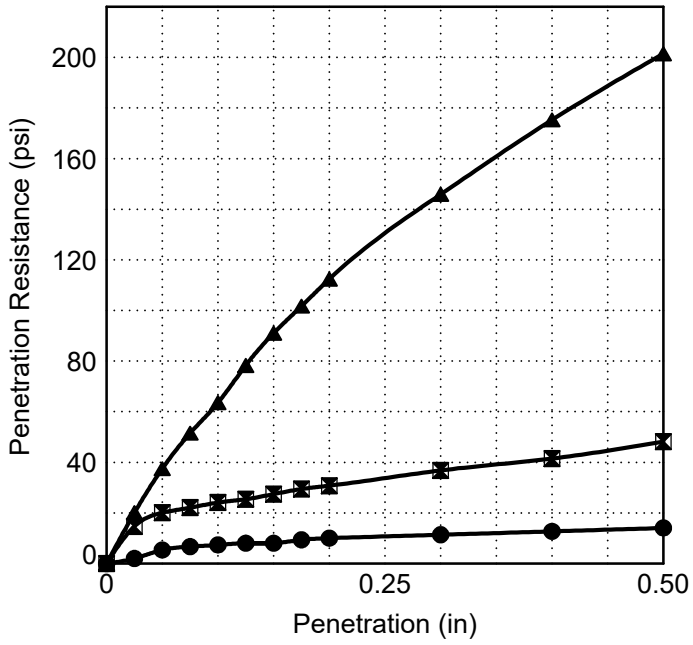
Source of Material: **GTP-7 1 to 4 feet**

Description of Material: **SILTY SAND with GRAVEL(SM)**

Remarks:

Corrected Percent Fines: **48.3 %**

Atterberg Limits: LL **NP** PL **NP** PI **NP**



Sample No.	1	2	3
Sample Condition	Soaked		
Compaction Method	ASTM 698A		
Maximum Dry Density, (pcf)	121.4	121.4	121.4
Optimum Moisture Content, (%)	11.3	11.3	11.3
Dry Density before Soaking, (pcf)	107.28	115.79	125.69
Moisture Content, (%)			
After Compaction	9.7	9.7	9.7
Top 1" After Soaking	16.1	15.4	12.2
Surcharge,. (lbs)	10.00	10.00	10.00
Swell, (%)	0.04	0.18	-0.24
Bearing Ratio, (%)	0.7	2.1	7.5

Dry Density @ 90% 109.3 pcf

Dry Density @ 95% 115.3 pcf

Dry Density @ 100% 121.4 pcf

CBR @ 90% Density 1.0

CBR @ 95% Density 2.3

CBR @ 100% Density 5.0

PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

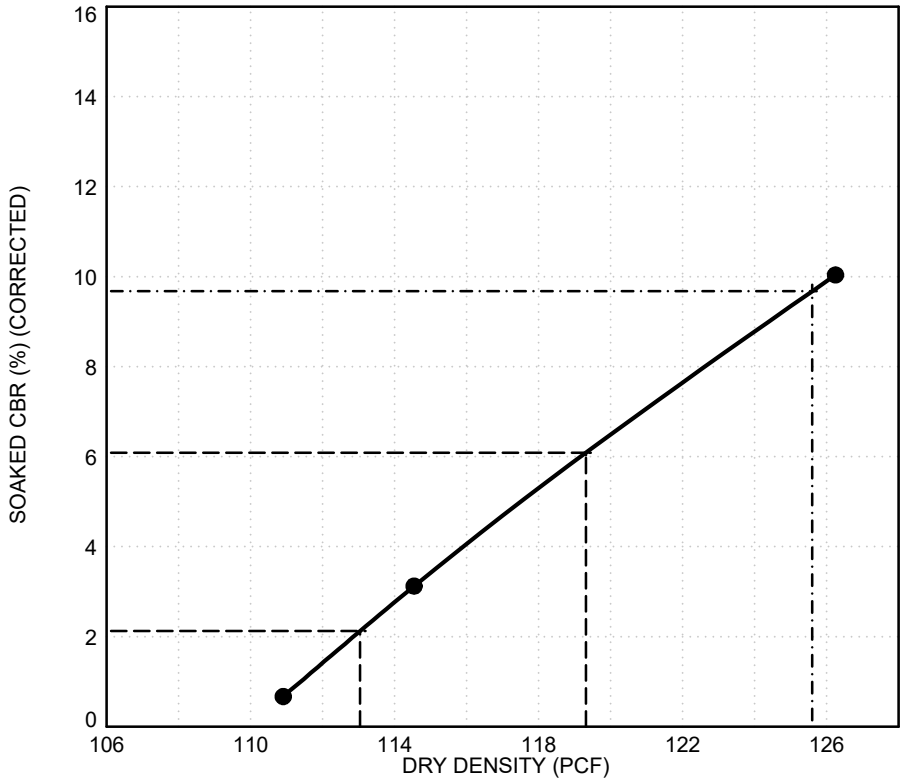
CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CBR 3PT REPORT J5205196 GARNET SOLAR.GPJ 02195238 US 50 AND CHIPMAN.GPJ 2/1/21

Exhibit B-007

CALIFORNIA BEARING RATIO

ASTM D1883-07[2]



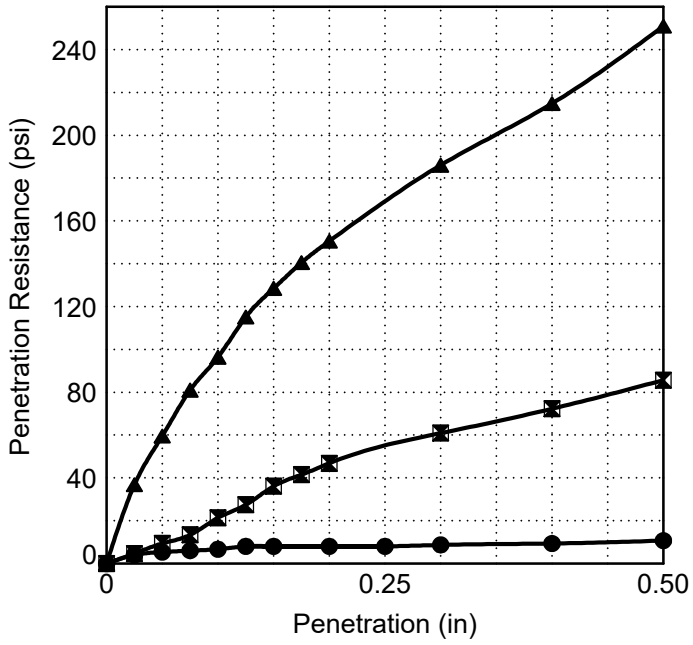
Source of Material: **GTP-11 1 to 4 feet**

Description of Material: **SILTY SAND with GRAVEL(SM)**

Remarks:

Corrected Percent Fines: **41.5 %**

Atterberg Limits: LL **NP** PL **NP** PI **NP**



Sample No.	1	2	3
Sample Condition	Soaked		
Compaction Method	ASTM 698A		
Maximum Dry Density, (pcf)	125.6	125.6	125.6
Optimum Moisture Content, (%)	10.2	10.2	10.2
Dry Density before Soaking, (pcf)	110.91	114.54	126.25
Moisture Content, (%)			
After Compaction	8.3	8.3	8.3
Top 1" After Soaking	14.5	12.8	9.1
Surcharge,. (lbs)	10.00	10.00	10.00
Swell, (%)	-0.33	0.26	0.09
Bearing Ratio, (%)	0.5	3.1	10.0

Dry Density @ 90% 113.0 pcf

Dry Density @ 95% 119.3 pcf

Dry Density @ 100% 125.6 pcf

CBR @ 90% Density 2.1

CBR @ 95% Density 6.1

CBR @ 100% Density 9.7

PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CBR 3PT REPORT J5205196 GARNET SOLAR.GPJ 02195238 US 50 AND CHIPMAN.GPJ 2/1/21

Exhibit B-008

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

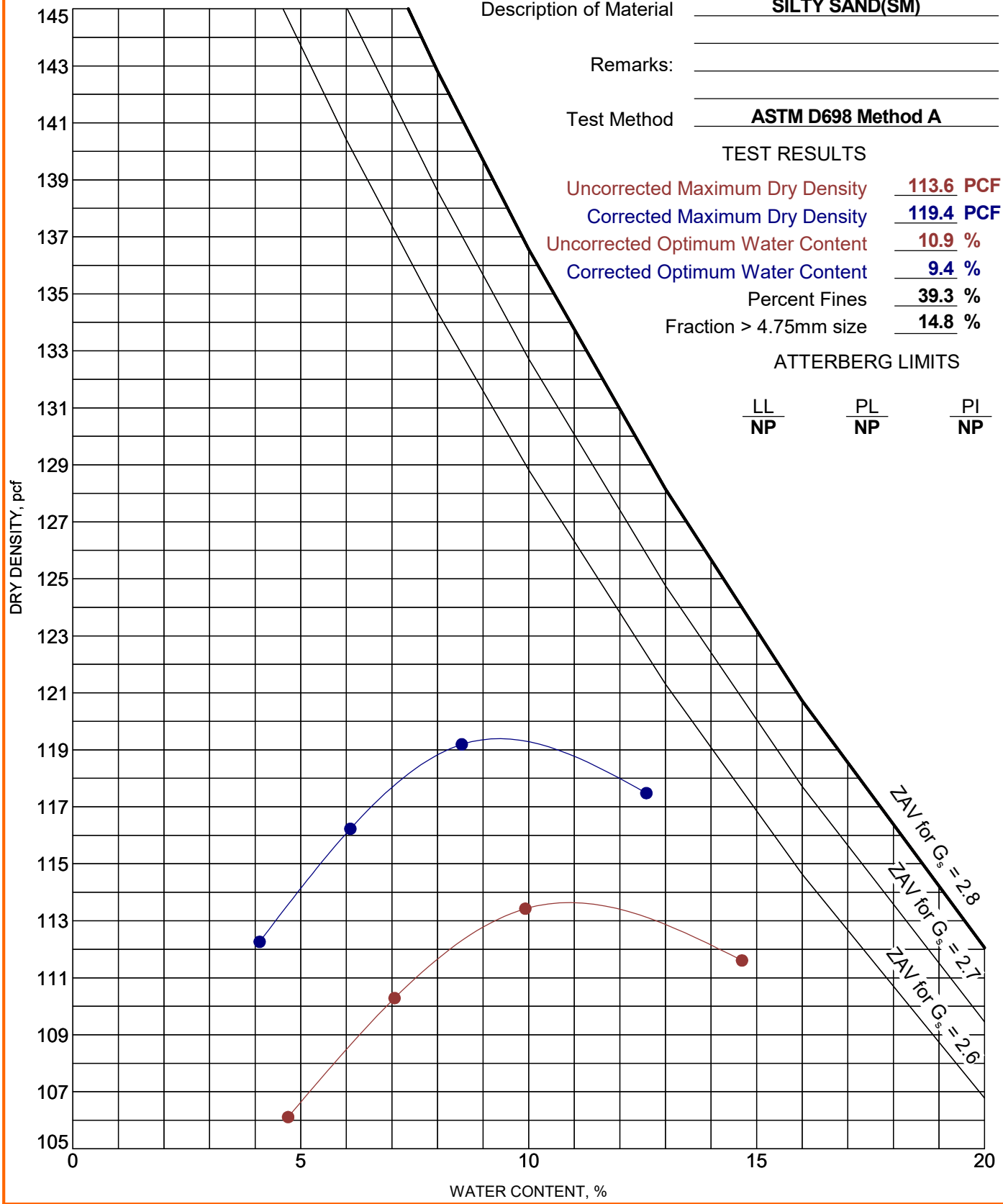
Source of Material	**GSB-1 @ 1 to 4 feet**
Description of Material	**SILTY SAND(SM)**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Uncorrected Maximum Dry Density	**113.6** PCF
Corrected Maximum Dry Density	**119.4** PCF
Uncorrected Optimum Water Content	**10.9** %
Corrected Optimum Water Content	**9.4** %
Percent Fines	**39.3** %
Fraction > 4.75mm size	**14.8** %

ATTERBERG LIMITS

LL	PL	PI
NP	NP	NP



PROJECT: Garnet Solar

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

PROJECT NUMBER: J5205196

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-009

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

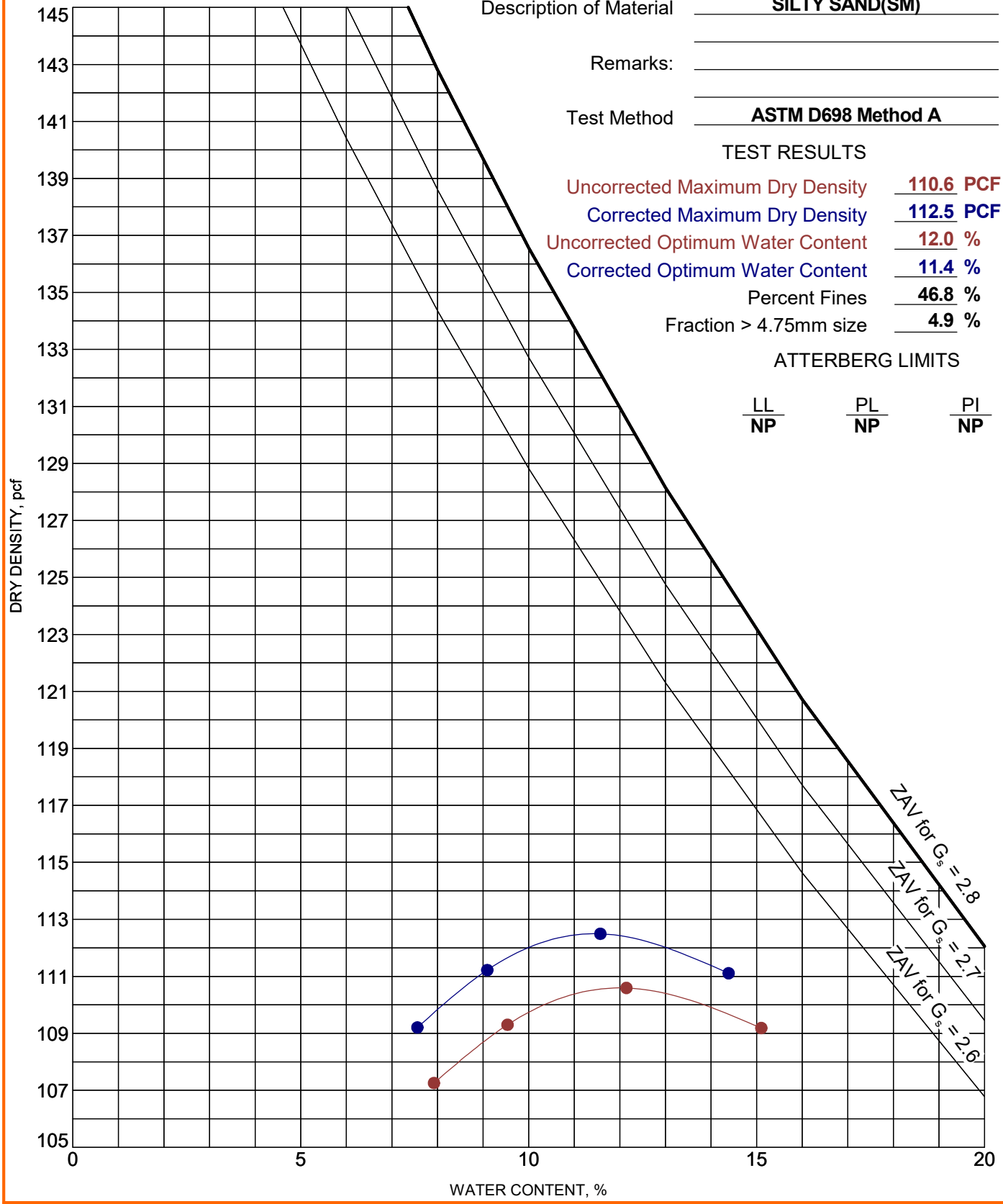
Source of Material	**GSB-2 @ 1 to 4 feet**
Description of Material	**SILTY SAND(SM)**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Uncorrected Maximum Dry Density	110.6	PCF
Corrected Maximum Dry Density	112.5	PCF
Uncorrected Optimum Water Content	12.0	%
Corrected Optimum Water Content	11.4	%
Percent Fines	46.8	%
Fraction > 4.75mm size	4.9	%

ATTERBERG LIMITS

LL	PL	PI
NP	NP	NP



PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-010

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

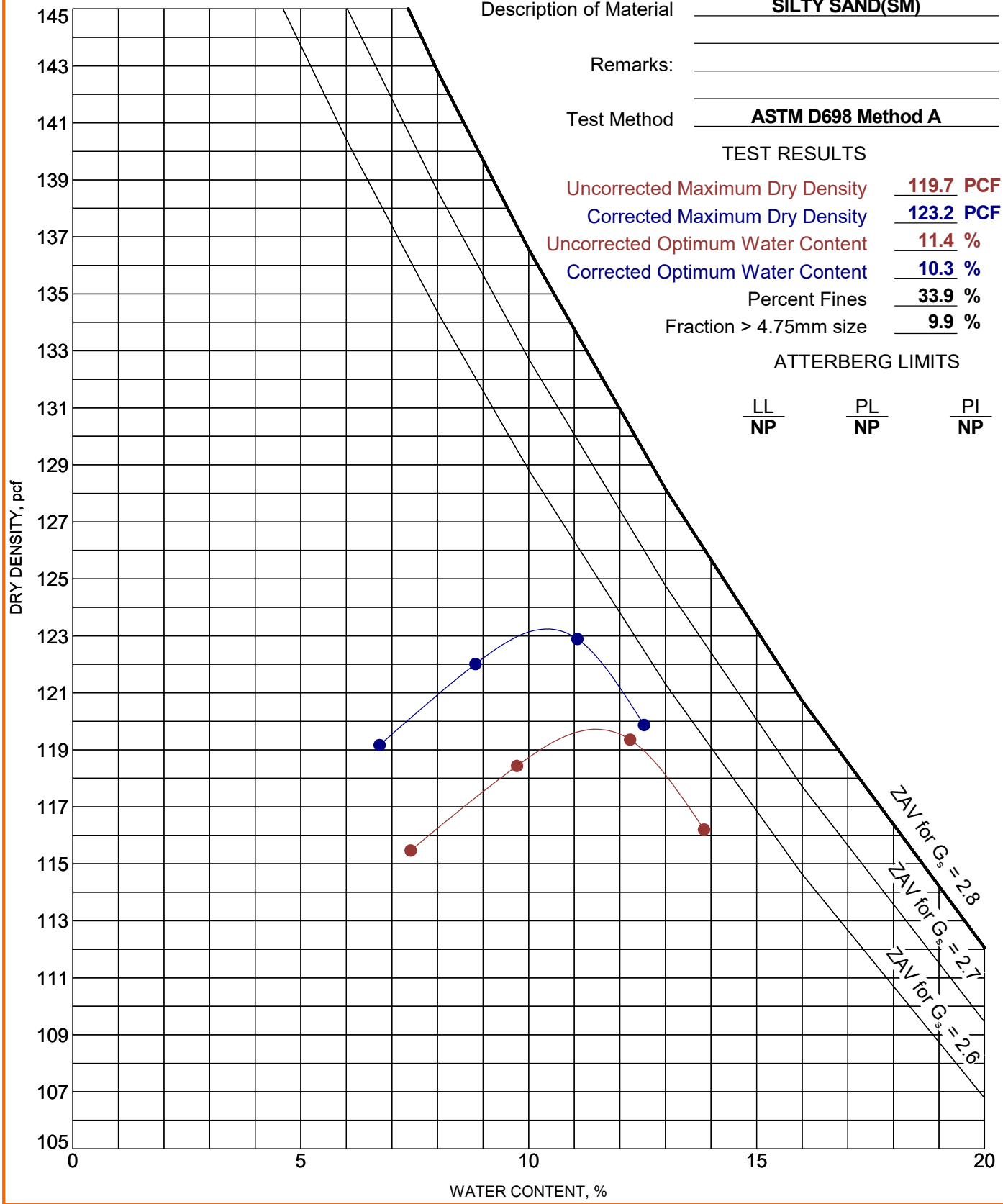
Source of Material	**GTP-1 @ 1 - 4 feet**
Description of Material	**SILTY SAND(SM)**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Uncorrected Maximum Dry Density	119.7	PCF
Corrected Maximum Dry Density	123.2	PCF
Uncorrected Optimum Water Content	11.4	%
Corrected Optimum Water Content	10.3	%
Percent Fines	33.9	%
Fraction > 4.75mm size	9.9	%

ATTERBERG LIMITS

LL	PL	PI
NP	NP	NP



PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-011

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

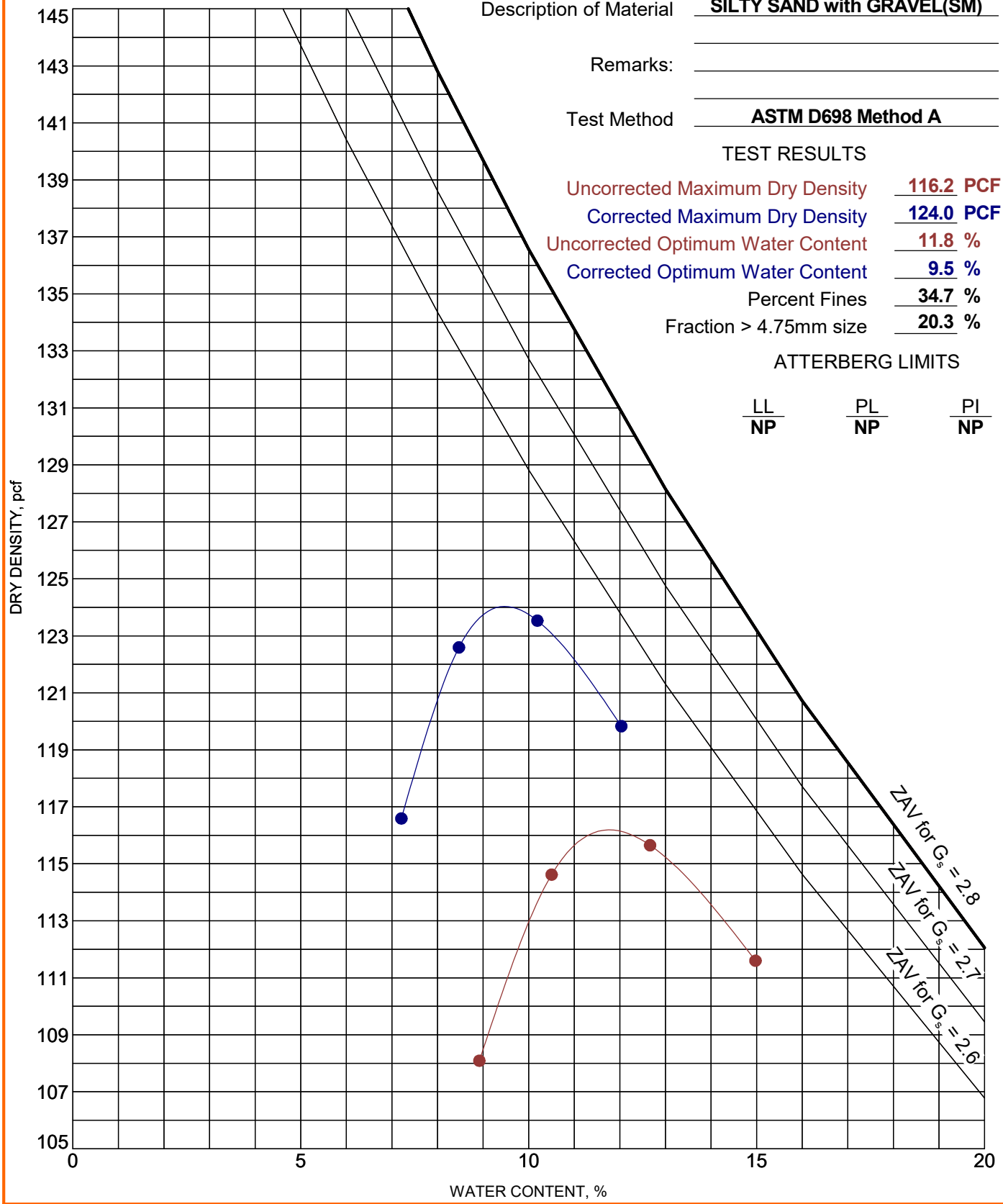
Source of Material	**GTP-3 @ 1 - 4 feet**
Description of Material	**SILTY SAND with GRAVEL(SM)**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Uncorrected Maximum Dry Density	116.2	PCF
Corrected Maximum Dry Density	124.0	PCF
Uncorrected Optimum Water Content	11.8	%
Corrected Optimum Water Content	9.5	%
Percent Fines	34.7	%
Fraction > 4.75mm size	20.3	%

ATTERBERG LIMITS

LL	PL	PI
NP	NP	NP



PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

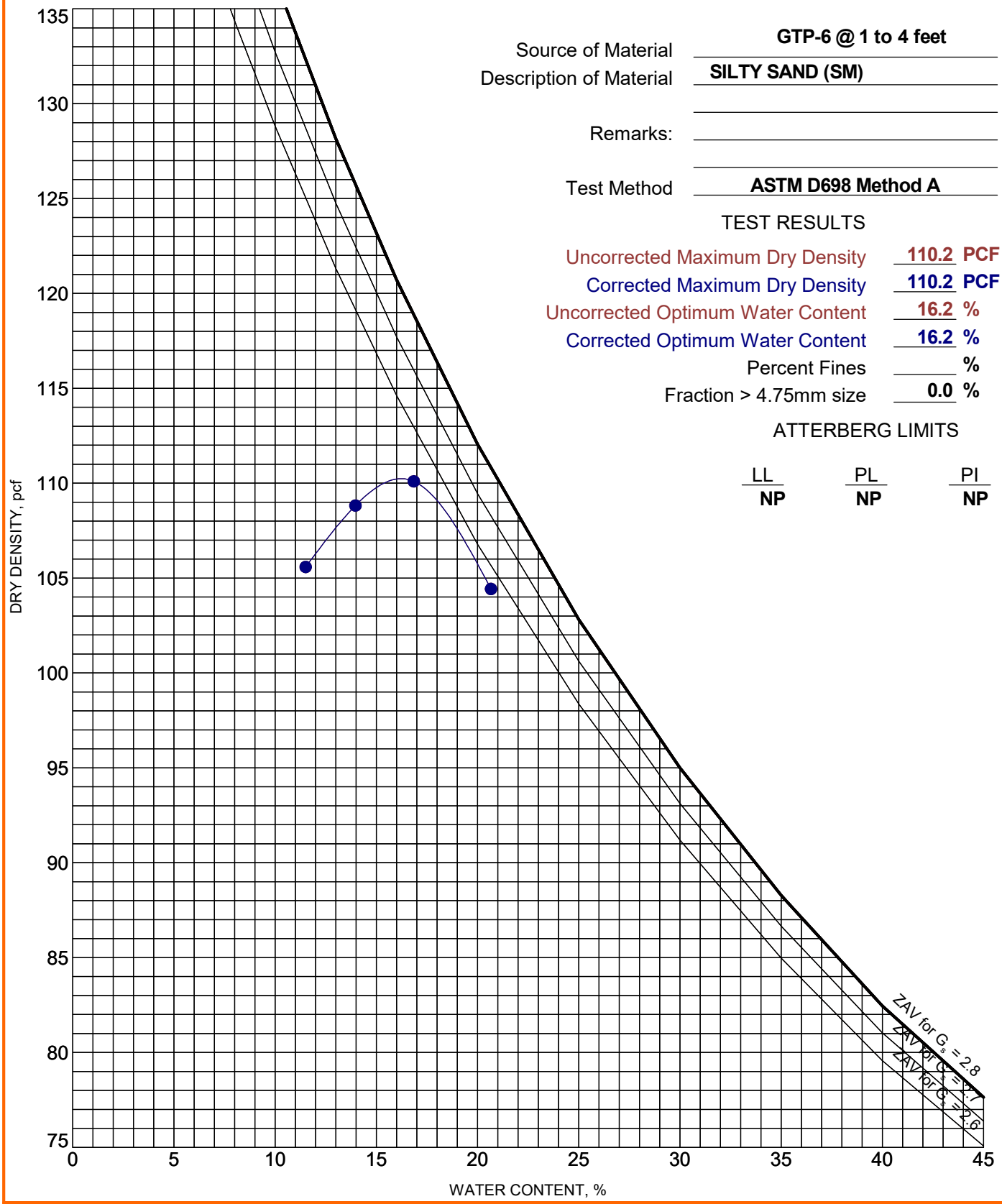
CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-012

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557



Source of Material	**GTP-6 @ 1 to 4 feet**
Description of Material	**SILTY SAND (SM)**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Uncorrected Maximum Dry Density	**110.2**	**PCF**
Corrected Maximum Dry Density	**110.2**	**PCF**
Uncorrected Optimum Water Content	**16.2**	**%**
Corrected Optimum Water Content	**16.2**	**%**
Percent Fines		**%**
Fraction > 4.75mm size	**0.0**	**%**

ATTERBERG LIMITS

LL	PL	PI
NP	**NP**	**NP**

PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V2 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-013

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

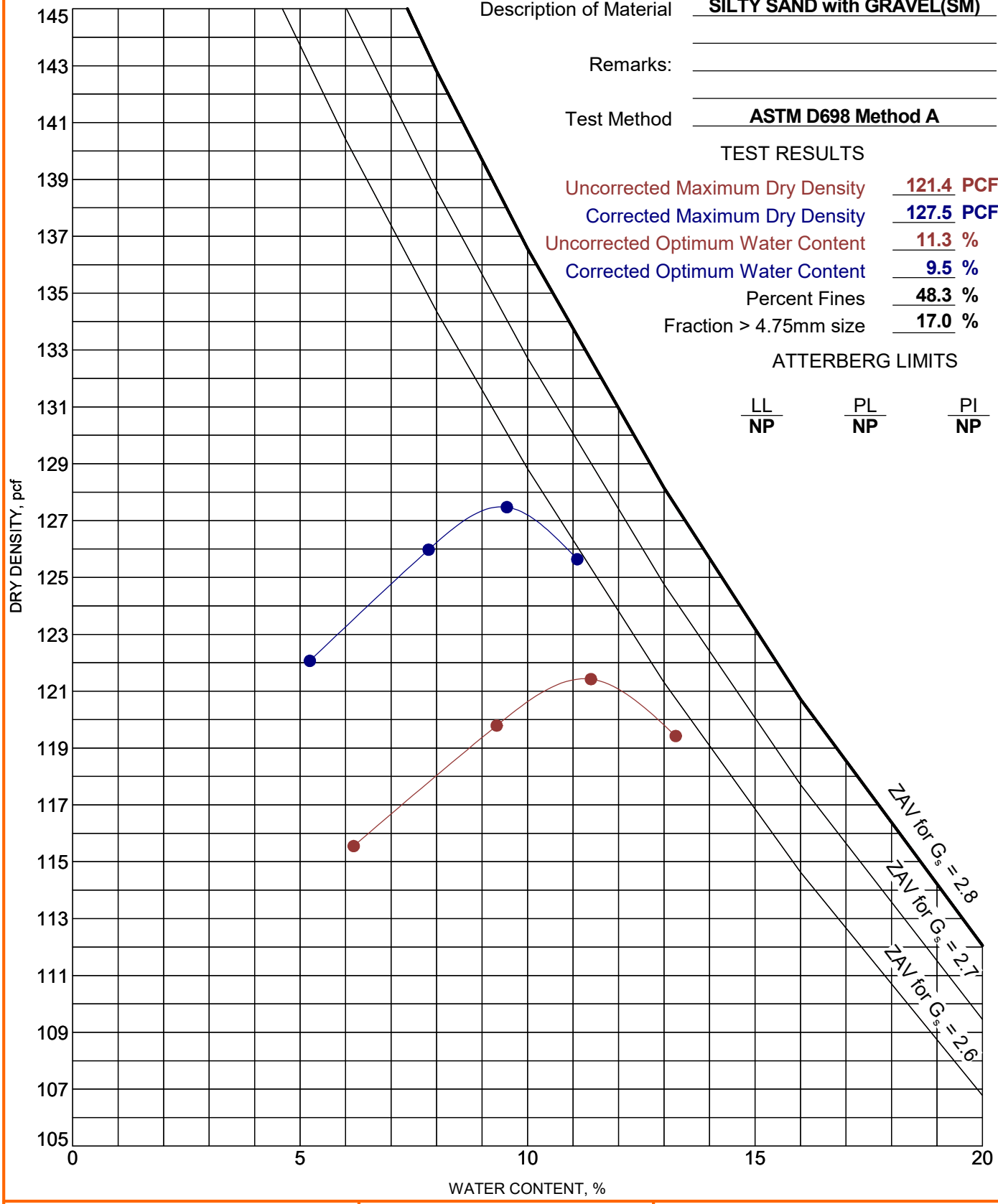
Source of Material	**GTP-7 @ 1 - 4 feet**
Description of Material	**SILTY SAND with GRAVEL(SM)**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Uncorrected Maximum Dry Density	**121.4 PCF**
Corrected Maximum Dry Density	**127.5 PCF**
Uncorrected Optimum Water Content	**11.3 %**
Corrected Optimum Water Content	**9.5 %**
Percent Fines	**48.3 %**
Fraction > 4.75mm size	**17.0 %**

ATTERBERG LIMITS

LL	PL	PI
NP	**NP**	**NP**



PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-014

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

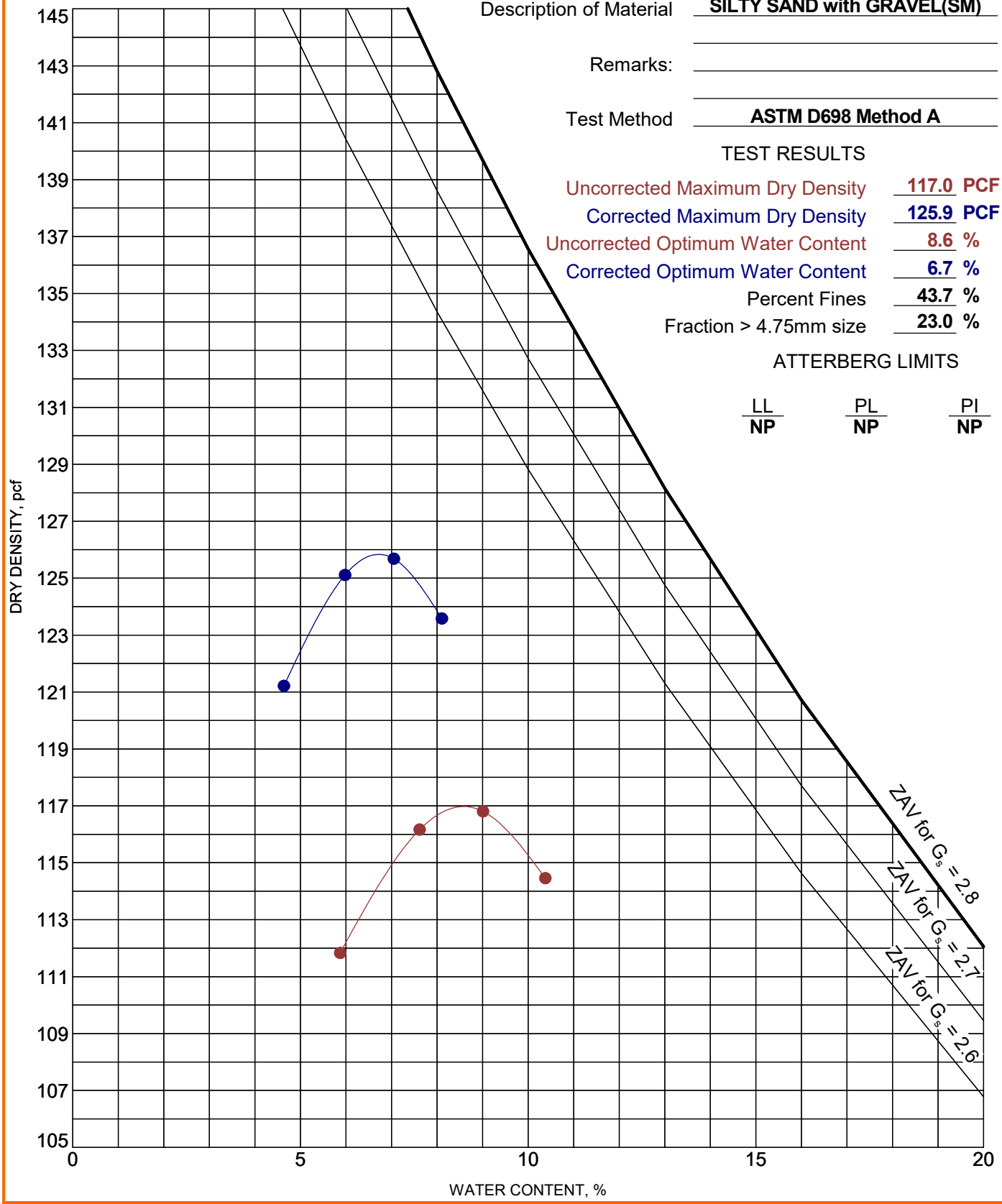
Source of Material	**GTP-8 @ 1 - 4 feet**
Description of Material	**SILTY SAND with GRAVEL(SM)**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Uncorrected Maximum Dry Density	**117.0** PCF
Corrected Maximum Dry Density	**125.9** PCF
Uncorrected Optimum Water Content	**8.6** %
Corrected Optimum Water Content	**6.7** %
Percent Fines	**43.7** %
Fraction > 4.75mm size	**23.0** %

ATTERBERG LIMITS

LL	PL	PI
NP	**NP**	**NP**



PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-015

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

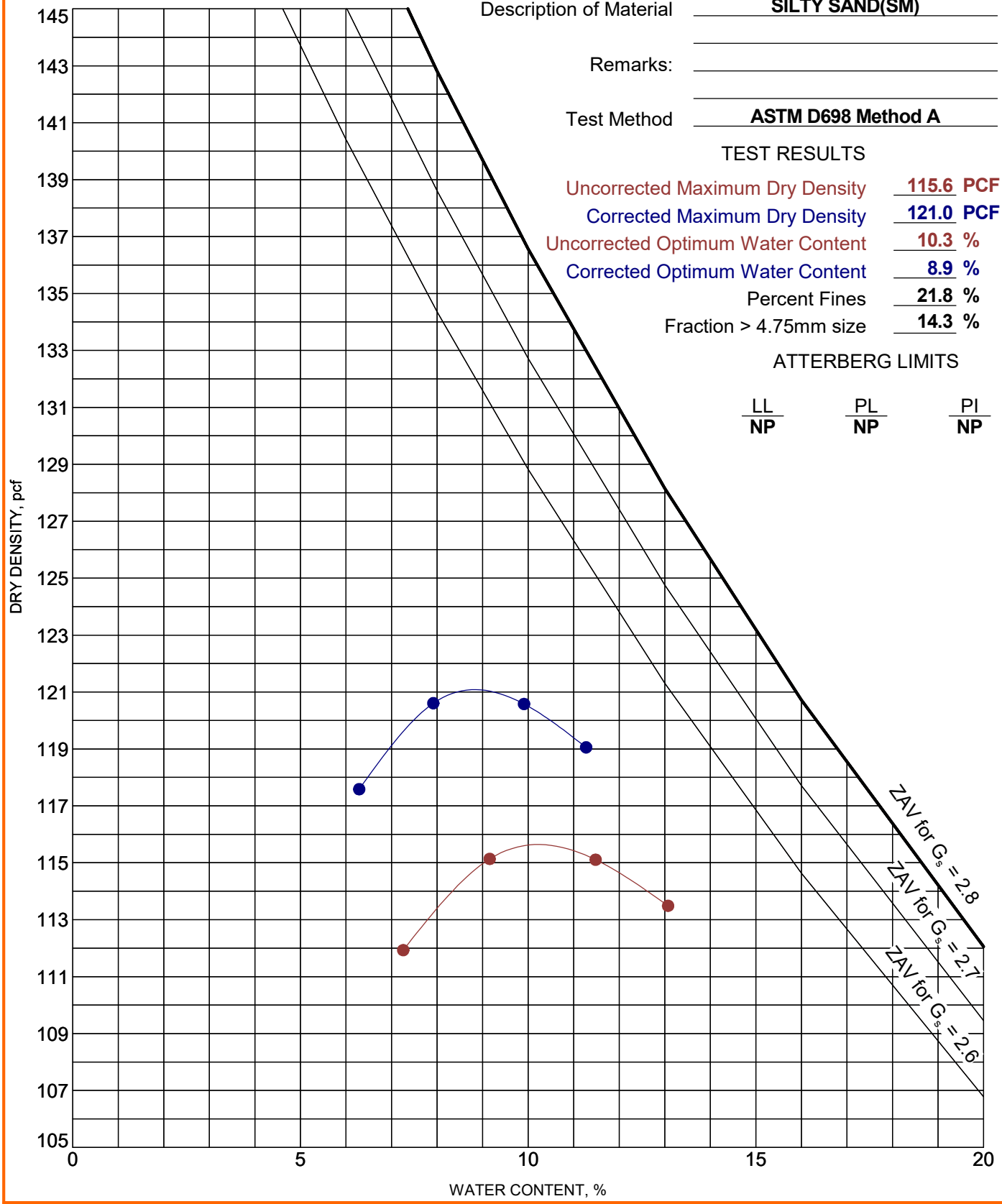
Source of Material	**GTP-10 @ 1 - 4 feet**
Description of Material	**SILTY SAND(SM)**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Uncorrected Maximum Dry Density	**115.6** PCF
Corrected Maximum Dry Density	**121.0** PCF
Uncorrected Optimum Water Content	**10.3** %
Corrected Optimum Water Content	**8.9** %
Percent Fines	**21.8** %
Fraction > 4.75mm size	**14.3** %

ATTERBERG LIMITS

LL	PL	PI
NP	NP	NP



PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-016

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

Source of Material: **GTP-11 @ 1 - 4 feet**

Description of Material:

Remarks:

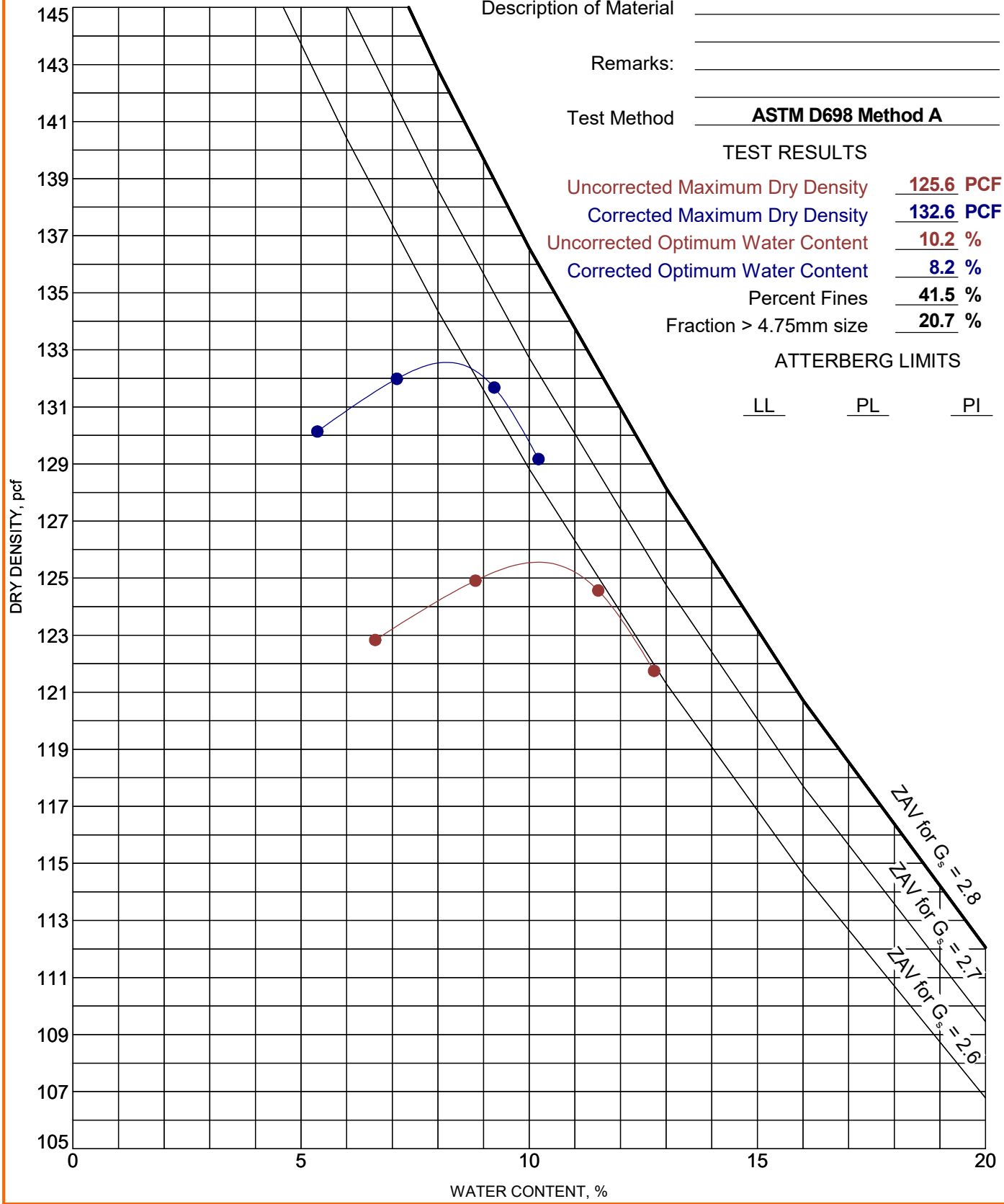
Test Method: **ASTM D698 Method A**

TEST RESULTS

Uncorrected Maximum Dry Density	125.6 PCF
Corrected Maximum Dry Density	132.6 PCF
Uncorrected Optimum Water Content	10.2 %
Corrected Optimum Water Content	8.2 %
Percent Fines	41.5 %
Fraction > 4.75mm size	20.7 %

ATTERBERG LIMITS

LL	PL	PI



PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-017

MOISTURE-DENSITY RELATIONSHIP

ASTM D698/D1557

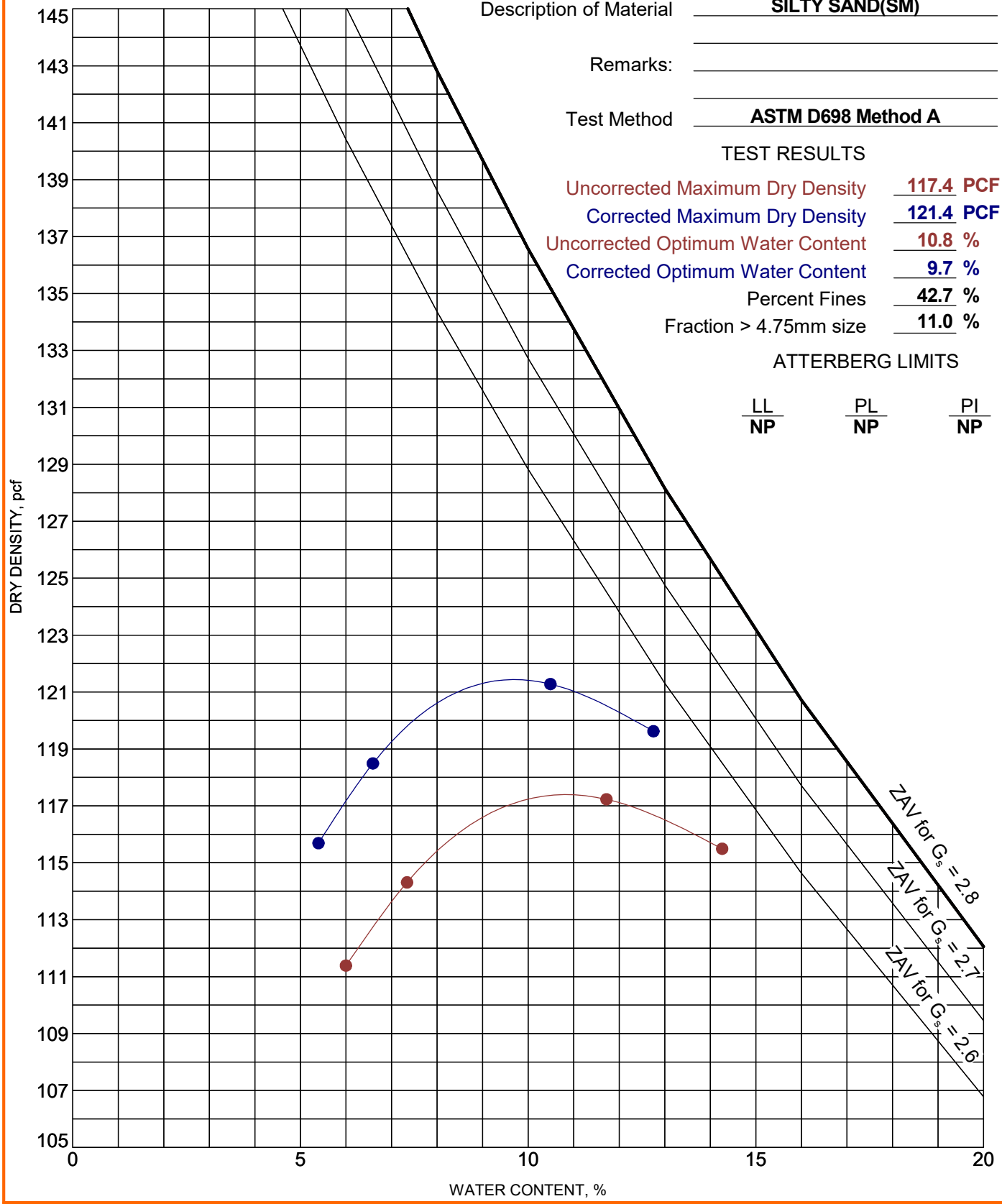
Source of Material	**GTP-12 @ 1 - 4 feet**
Description of Material	**SILTY SAND(SM)**
Remarks:	
Test Method	**ASTM D698 Method A**

TEST RESULTS

Uncorrected Maximum Dry Density	**117.4**	**PCF**
Corrected Maximum Dry Density	**121.4**	**PCF**
Uncorrected Optimum Water Content	**10.8**	**%**
Corrected Optimum Water Content	**9.7**	**%**
Percent Fines	**42.7**	**%**
Fraction > 4.75mm size	**11.0**	**%**

ATTERBERG LIMITS

LL	PL	PI
NP	**NP**	**NP**



PROJECT: Garnet Solar

PROJECT NUMBER: J5205196

SITE: Town of Conquest
Cayuga County, NY

Terracon
15 Marway Cir, Ste 2B
Rochester, NY

CLIENT: NextEra Energy Constructors, LLC
Juno Beach, FL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. COMPACTION - V1 J5205196 GARNET SOLAR FIELD INFO 2-12.GPJ TERRACON_DATATEMPLATE.GDT 2/12/21

Exhibit B-018

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

Terracon GeoReport

Client
NextEra Energy Constructors, LLC

Project
Garnet Solar

Sample Submitted By: Terracon (J5) **Date Received:** 2/4/2021 **Lab No.: 21-0128**

Results of Corrosion Analysis

Sample Number	--	--	--	--
Sample Location	GB-5	GB-5	GB-15	GB-18
Sample Depth (ft.)	0.0-2.0	2.0-4.0	0.0-2.0	0.0-2.0
pH Analysis, ASTM G 51	7.67	8.46	7.29	8.15
Water Soluble Sulfate (SO4), ASTM C 1580 (ppm)	54	94	70	121
Sulfides, AWWA 4500-S D, (mg/kg)	Nil	Nil	Nil	Nil
Chlorides, ASTM D 512, (ppm)	63	25	75	35
Red-Ox, ASTM G 200, (mV)	+688	+691	+690	+691
Total Salts, AWWA 2540, (mg/kg)	1148	576	694	687
Resistivity (Saturated), ASTM G 187, (ohm-cm)	5044	6208	5044	5044

Analyzed By:

Trisha Campo
Chemist

The tests were performed in general accordance with applicable ASTM and AWWA test methods. This report is exclusively for the use of the client indicated above and shall not be reproduced except in full without the written consent of our company. Test results transmitted herein are only applicable to the actual samples tested at the location(s) referenced and are not necessarily indicative of the properties of other apparently similar or identical materials.

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

Terracon GeoReport

Client
NextEra Energy Constructors, LLC

Project
Garnet Solar

Sample Submitted By: Terracon (J5) **Date Received:** 2/4/2021 **Lab No.: 21-0128**

Results of Corrosion Analysis

Sample Number	--
Sample Location	GB-21
Sample Depth (ft.)	0.0-2.0
pH Analysis, ASTM G 51	8.28
Water Soluble Sulfate (SO4), ASTM C 1580 (ppm)	80
Sulfides, AWWA 4500-S D, (mg/kg)	Nil
Chlorides, ASTM D 512, (ppm)	65
Red-Ox, ASTM G 200, (mV)	+692
Total Salts, AWWA 2540, (mg/kg)	570
Resistivity (Saturated), ASTM G 187, (ohm-cm)	7372

Analyzed By: Trisha Campo
Chemist

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

Terracon GeoReport

Client
NextEra Energy Constructors, LLC

Project
Garnet Solar

Sample Submitted By: Terracon (J5) **Date Received:** 2/4/2021 **Lab No.: 21-0128**

Results of Corrosion Analysis

Sample Number	--	--
Sample Location	GSB-1	GSB-2
Sample Depth (ft.)	0.0-3.0	0.0-2.0
pH Analysis, ASTM G 51	7.82	7.96
Water Soluble Sulfate (SO4), ASTM C 1580 (ppm)	75	51
Sulfides, AWWA 4500-S D, (mg/kg)	Nil	Nil
Chlorides, ASTM D 512, (ppm)	47	53
Red-Ox, ASTM G 200, (mV)	+693	+695
Total Salts, AWWA 2540, (mg/kg)	346	136
Resistivity (Saturated), ASTM G 187, (ohm-cm)	3880	9506

Analyzed By: Trisha Campo
Chemist

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

Terracon GeoReport

Client
NextEra Energy Constructors, LLC

Project
Garnet Solar

Sample Submitted By: Terracon (J5) **Date Received:** 2/4/2021 **Lab No.: 21-0128**

Results of Corrosion Analysis

Sample Number	--	--	--	--
Sample Location	GTP-3	GTP-4	GTP-6	GTP-7
Sample Depth (ft.)	1.0-4.0	1.0-4.0	1.0-4.0	1.0-4.0
pH Analysis, ASTM G 51	7.41	7.56	7.30	7.03
Water Soluble Sulfate (SO4), ASTM C 1580 (ppm)	135	83	47	88
Sulfides, AWWA 4500-S D, (mg/kg)	Nil	Nil	Nil	Nil
Chlorides, ASTM D 512, (ppm)	47	55	35	67
Red-Ox, ASTM G 200, (mV)	+694	+695	+696	+695
Total Salts, AWWA 2540, (mg/kg)	427	365	266	262
Resistivity (Saturated), ASTM G 187, (ohm-cm)	3201	5335	4268	5335

Analyzed By: Trisha Campo
Chemist

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

Terracon GeoReport

Client
NextEra Energy Constructors, LLC

Project
Garnet Solar

Sample Submitted By: Terracon (J5) **Date Received:** 2/4/2021 **Lab No.: 21-0128**

Results of Corrosion Analysis

Sample Number	--	--	--	--
Sample Location	GTP-8	GTP-9	GTP-10	GTP-11
Sample Depth (ft.)	1.0-4.0	1.0-4.0	1.0-4.0	1.0-4.0
pH Analysis, ASTM G 51	7.49	7.42	7.61	7.43
Water Soluble Sulfate (SO4), ASTM C 1580 (ppm)	88	77	66	80
Sulfides, AWWA 4500-S D, (mg/kg)	Nil	Nil	Nil	Nil
Chlorides, ASTM D 512, (ppm)	53	65	40	27
Red-Ox, ASTM G 200, (mV)	+693	+691	+696	+695
Total Salts, AWWA 2540, (mg/kg)	403	601	130	203
Resistivity (Saturated), ASTM G 187, (ohm-cm)	6693	4656	13580	5529

Analyzed By:

Trisha Campo
Chemist

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

Client
NextEra Energy Constructors, LLC

Project
Garnet Solar

Sample Submitted By: Terracon (J5) **Date Received:** 2/4/2021 **Lab No.: 21-0128**

Results of Corrosion Analysis

Sample Number	--
Sample Location	GTP-12
Sample Depth (ft.)	1.0-4.0
pH Analysis, ASTM G 51	7.40
Water Soluble Sulfate (SO4), ASTM C 1580 (ppm)	102
Sulfides, AWWA 4500-S D, (mg/kg)	Nil
Chlorides, ASTM D 512, (ppm)	93
Red-Ox, ASTM G 200, (mV)	+696
Total Salts, AWWA 2540, (mg/kg)	282
Resistivity (Saturated), ASTM G 187, (ohm-cm)	4947

Analyzed By: Trisha Campo
Chemist

APPENDIX C – THERMAL RESISTIVITY

Contents:

Note: All attachments are one page unless noted above.

THERMAL RESISTIVITY TEST LOCATIONS

Garnet Solar ■ Cayuga County, New York
Terracon Project No. J5205196

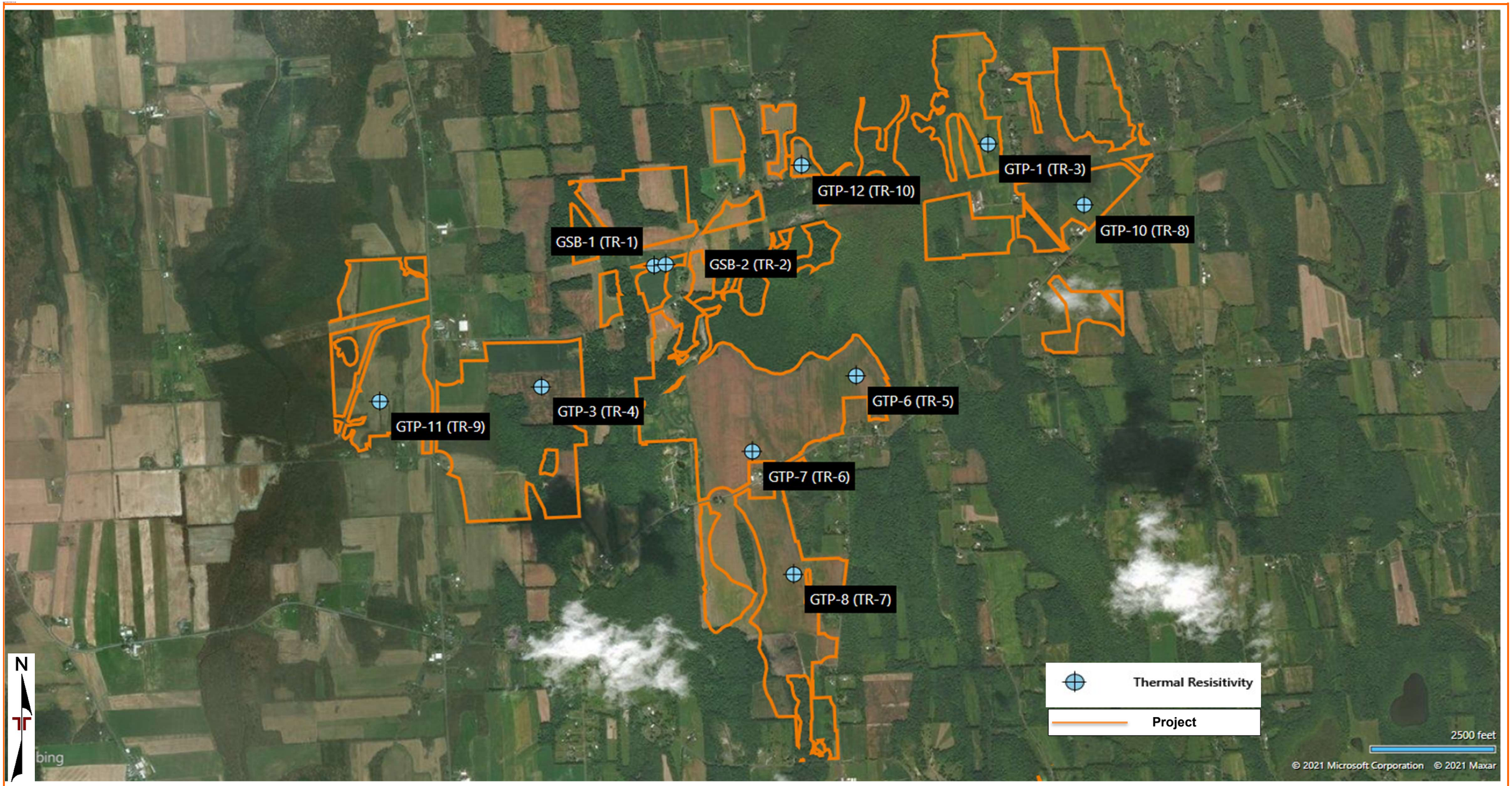


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY USGS

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

January 21, 2021

Terracon Consultants – NY, Inc.
15 Marway Circle, Suite 2B
Rochester, New York 14624
Attn: Travis Wooden, E.I.T.

Re: Thermal Analysis of Native Soil Samples
Garnet Solar – Conquest, NY (Project No. J5205196)

The following is the report of thermal dryout characterization tests conducted on the ten (10) each tube and bulk samples of native soil from the referenced project sent to our laboratory. All these samples were taken from 1-ft to 4-ft.

Thermal Resistivity Tests: The tube samples were tested 'as received' and the bulk samples were tested at either the 'as received' or 'optimum' (whichever is greater) moisture content and 90% of maximum 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 10.**

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

Sample ID	Effort %	Description (Terracon)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
			Wet	Dry		
GSB-1	90	Silty Sand	57	184	15	107
	Tube		56	217	16	101
GSB-2	90	Silty Sand	62	213	14	101
	Tube		56	245	17	99
GTP-1	90	Silty Sand	56	193	13	111
	Tube		62	233	10	101
GTP-3	90	Silty Sand with Gravel	60	198	14	112
	Tube		66	255	13	92

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

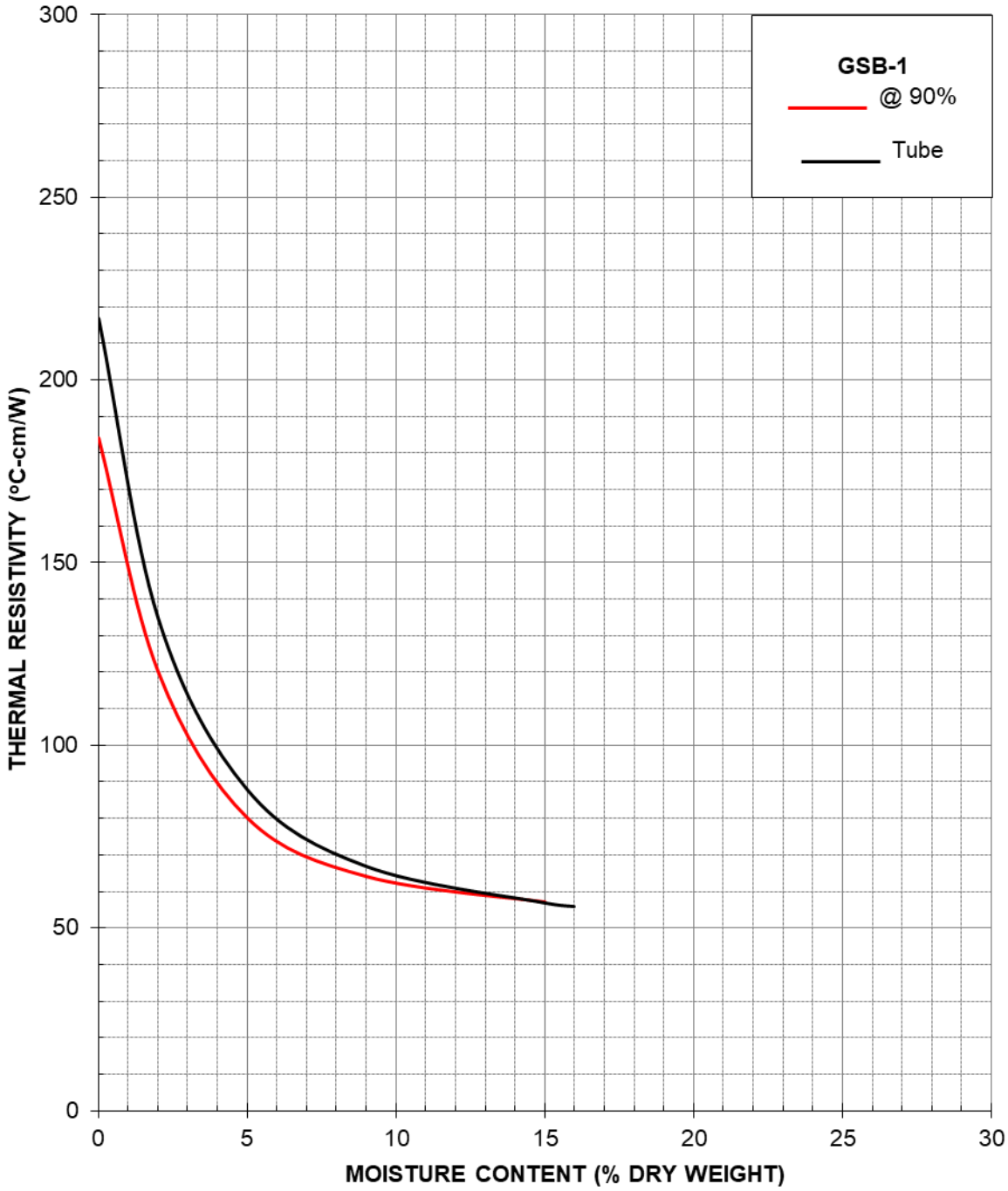
Sample ID	Effort %	Description (Terracon)	Thermal Resistivity (°C-cm/W)		Moisture Content (%)	Dry Density (lb/ft^3)
			Wet	Dry		
GTP-6	90	Silty Sand	67	222	17	99
	Tube		42	114	10	118
GTP-7	90	Silty Sand with Gravel	52	141	11	115
	Tube		49	127	13	115
GTP-8	90	Silty Sand with Gravel	52	143	11	113
	Tube		54	157	12	108
GTP-10	90	Silty Sand	69	172	9	109
	Tube		63	149	11	109
GTP-11	90	Silty Sand with Gravel	48	122	11	119
	Tube		54	163	17	100
GTP-12	90	Silty Sand	54	153	16	109
	Tube		56	278	15	92

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

Geotherm USA

Deepak Parmar

THERMAL DRYOUT CURVES



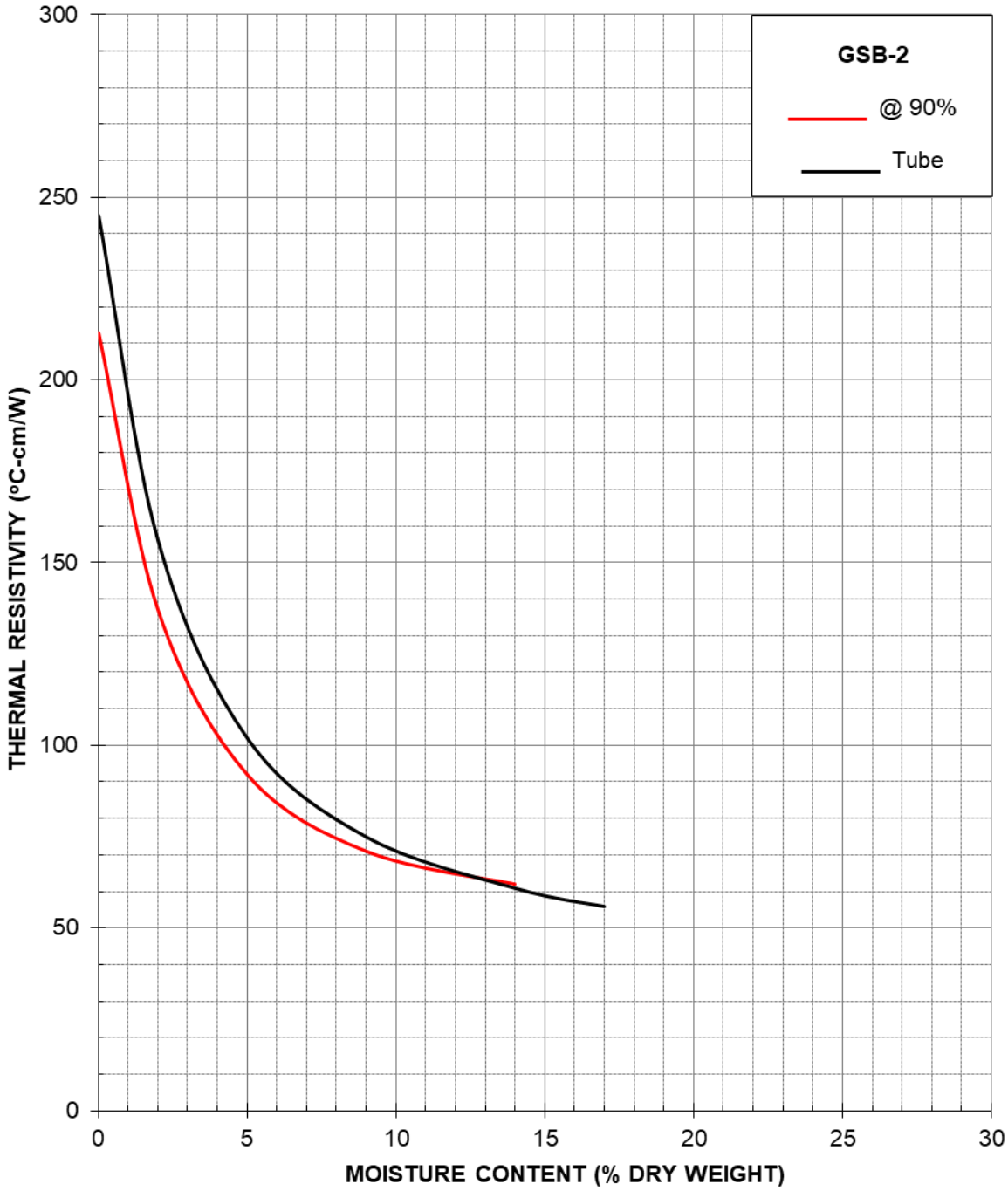
Terracon Consultants, Inc. (Project No. J5205196)

Thermal Analysis of Native Soils

Garnet Solar – Conquest, NY

January 2021 **Figure 1**

THERMAL DRYOUT CURVES



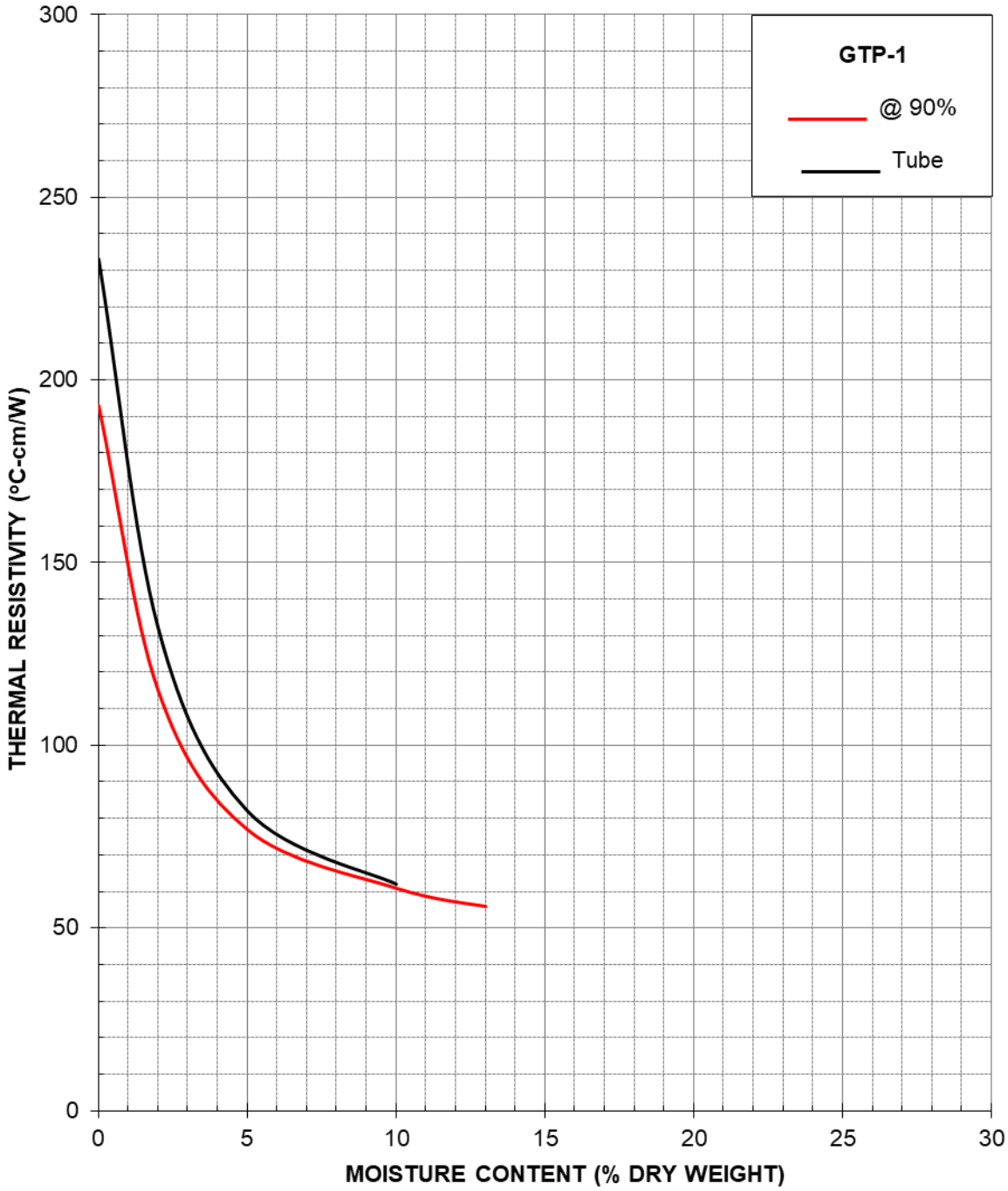
Terracon Consultants, Inc. (Project No. J5205196)

Thermal Analysis of Native Soils

Garnet Solar – Conquest, NY

January 2021 **Figure 2**

THERMAL DRYOUT CURVES

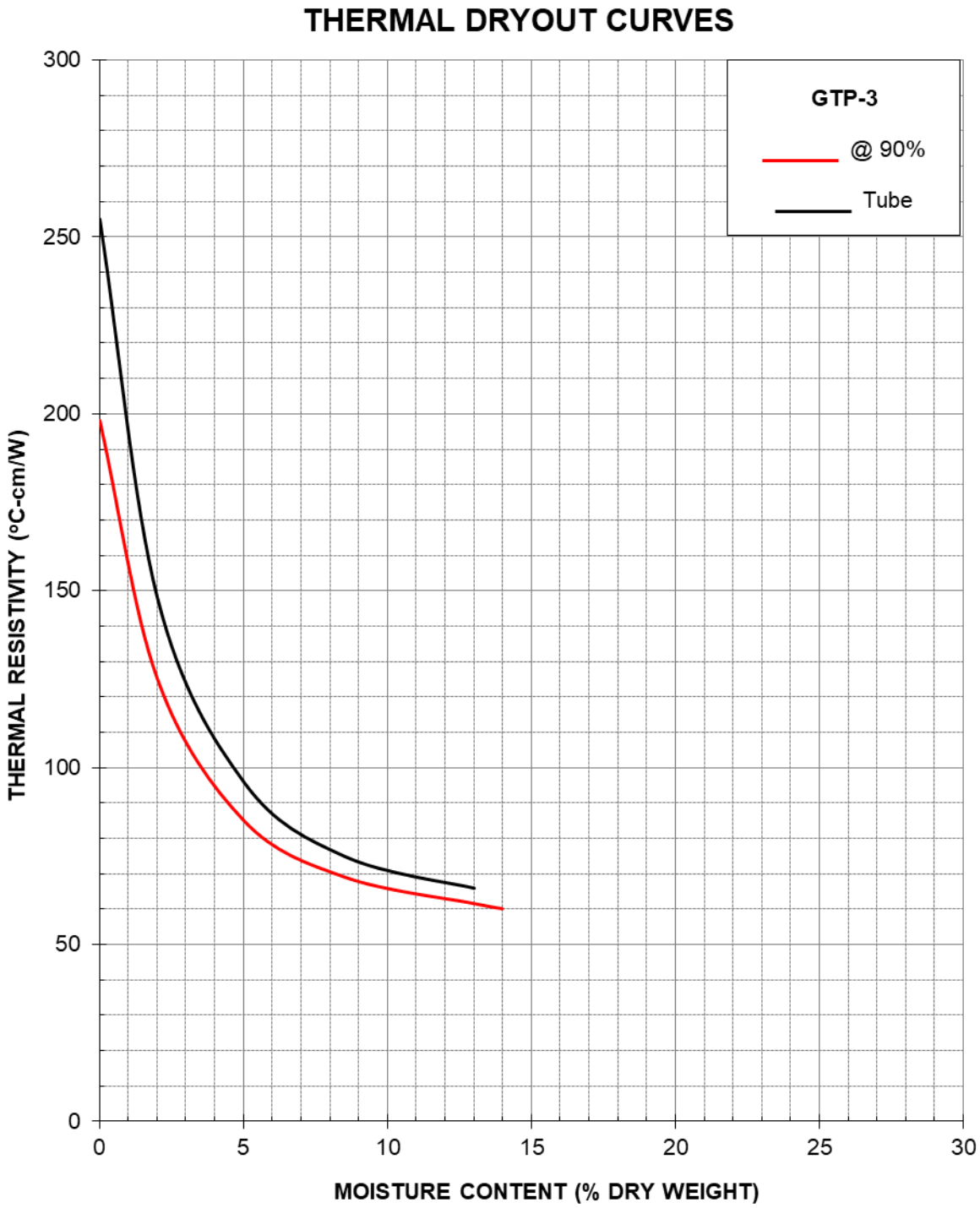


Terracon Consultants, Inc. (Project No. J5205196)

Thermal Analysis of Native Soils

Garnet Solar – Conquest, NY

January 2021 **Figure 3**

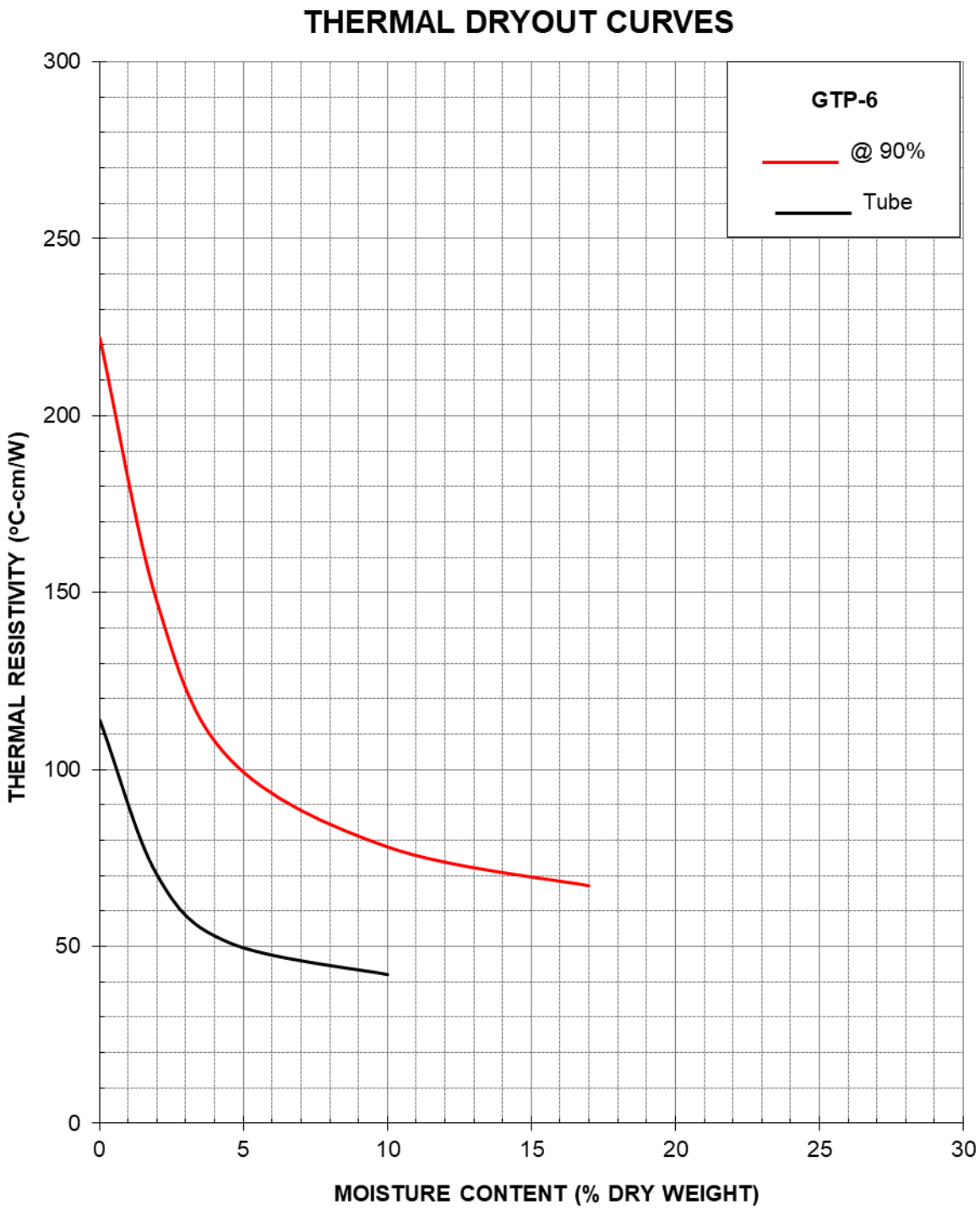


Terracon Consultants, Inc. (Project No. J5205196)

Thermal Analysis of Native Soils

Garnet Solar – Conquest, NY

January 2021 **Figure 4**

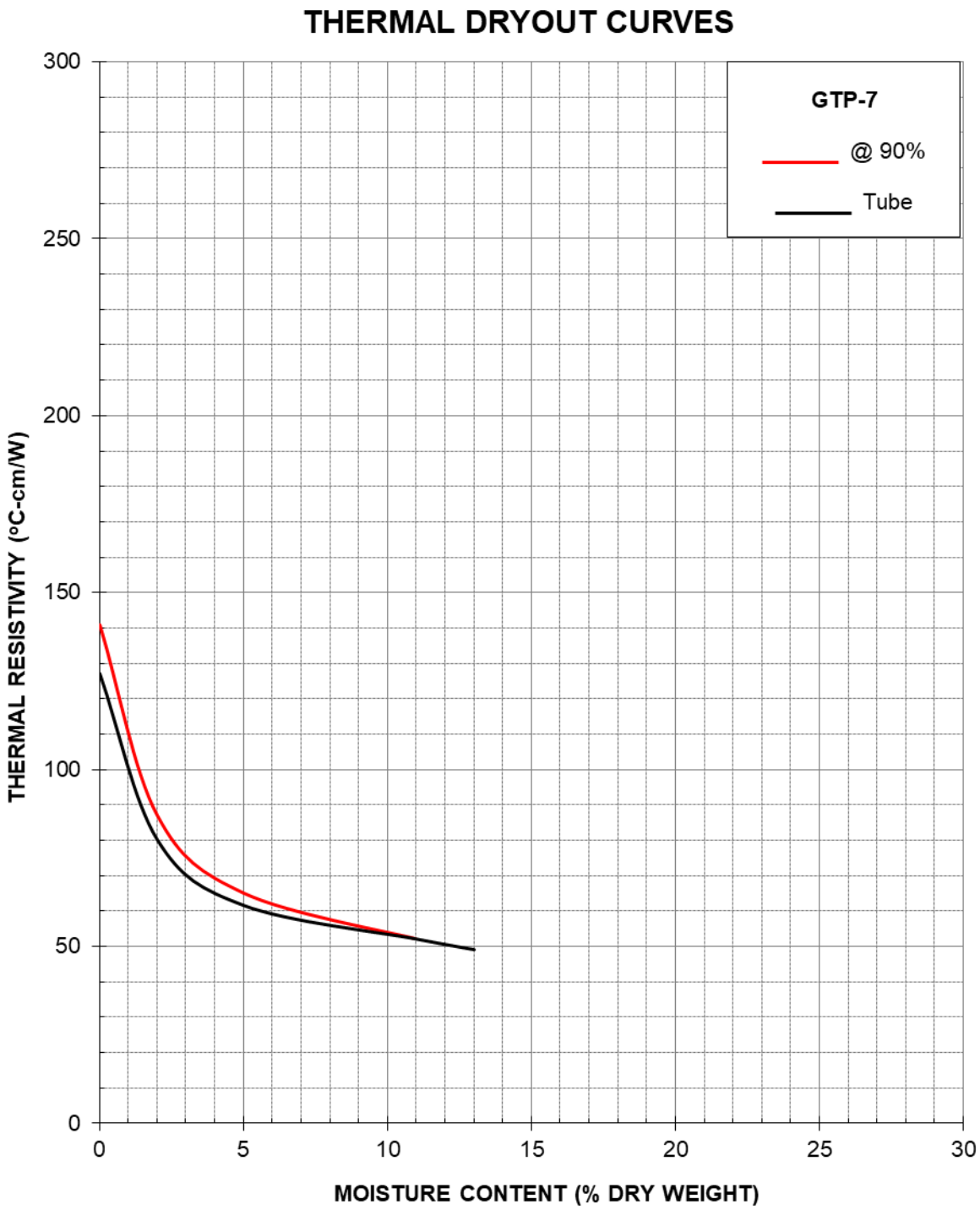


Terracon Consultants, Inc. (Project No. J5205196)

Thermal Analysis of Native Soils

Garnet Solar – Conquest, NY

January 2021 **Figure 5**

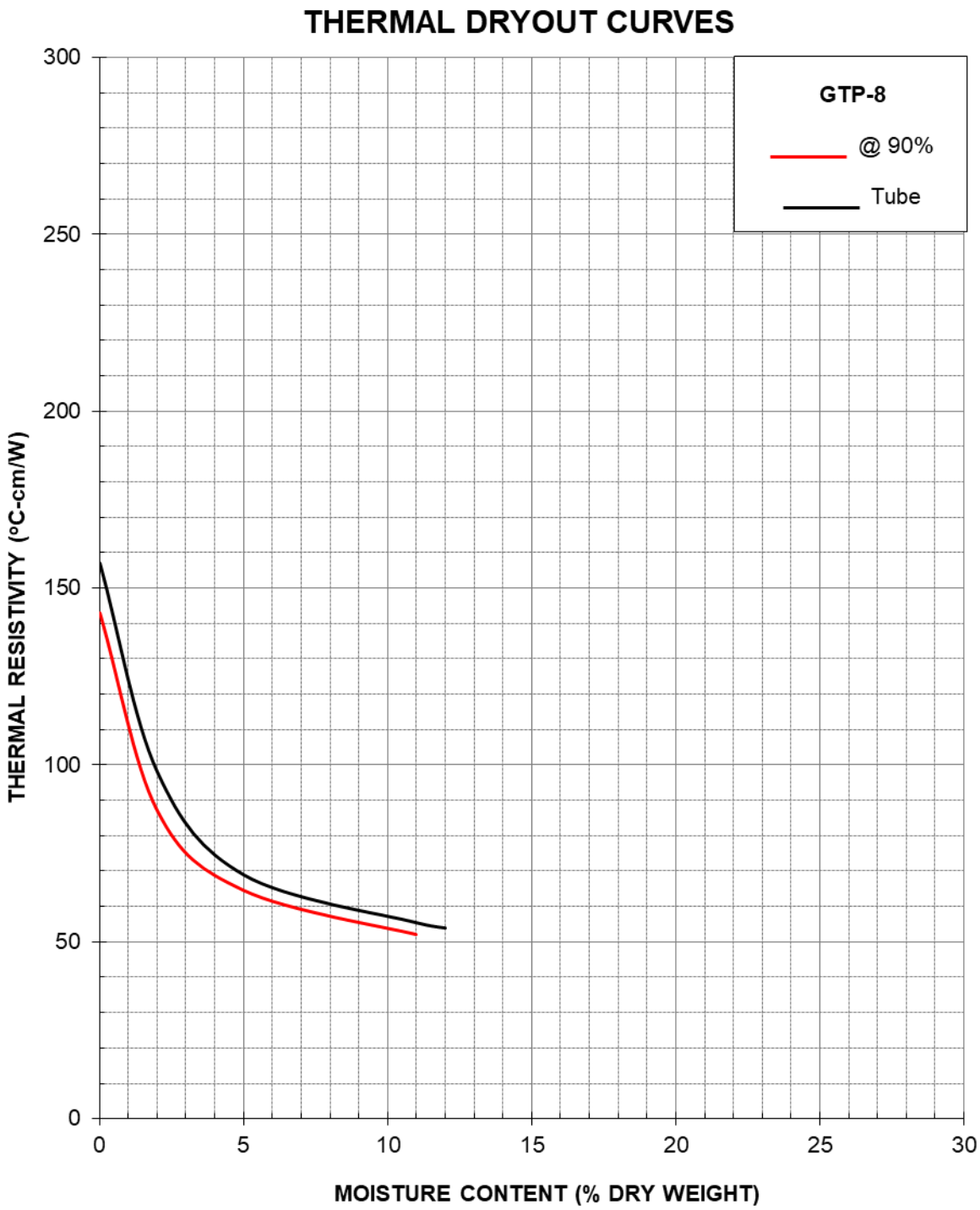


Terracon Consultants, Inc. (Project No. J5205196)

Thermal Analysis of Native Soils

Garnet Solar – Conquest, NY

January 2021 **Figure 6**

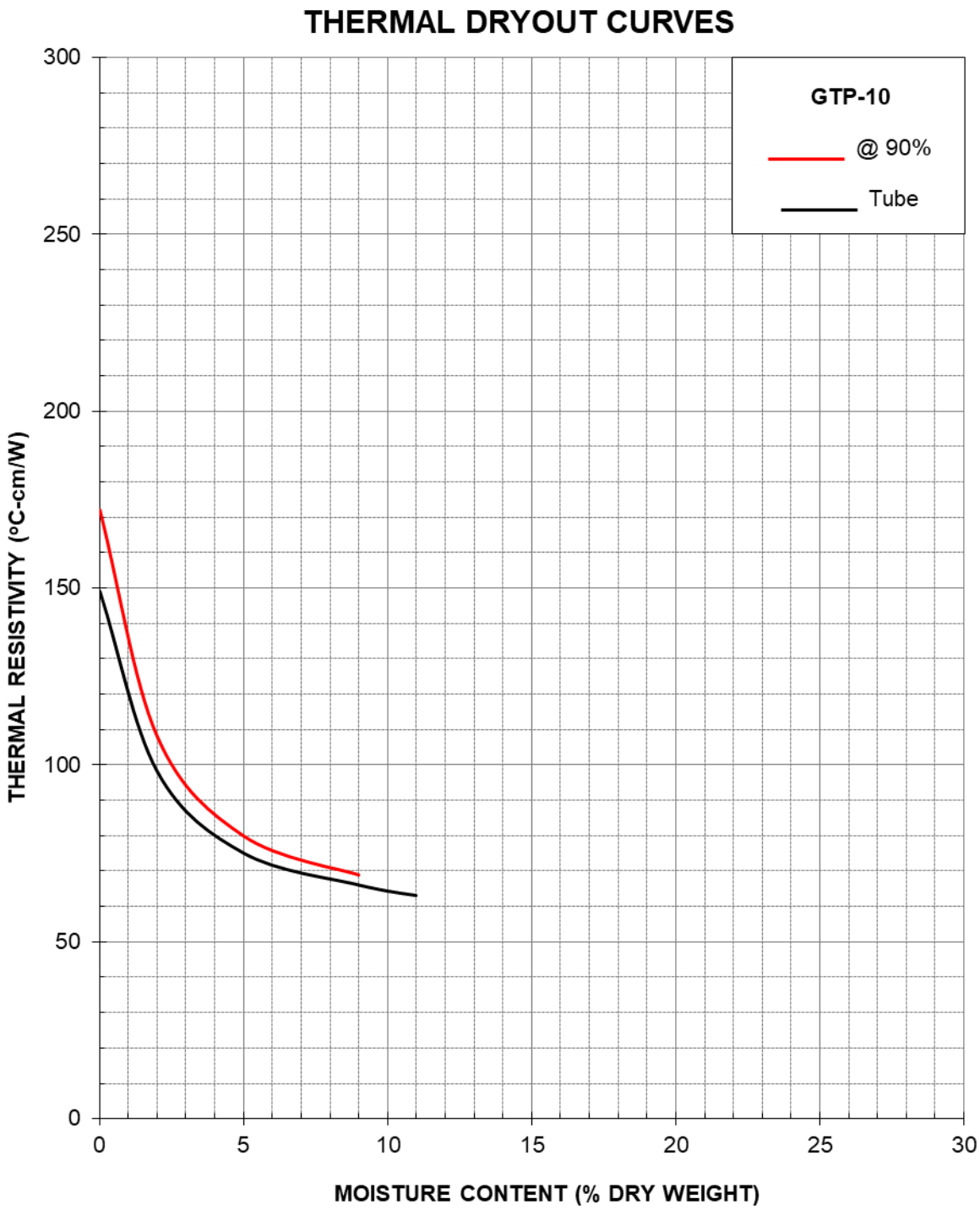


Terracon Consultants, Inc. (Project No. J5205196)

Thermal Analysis of Native Soils

Garnet Solar – Conquest, NY

January 2021 **Figure 7**

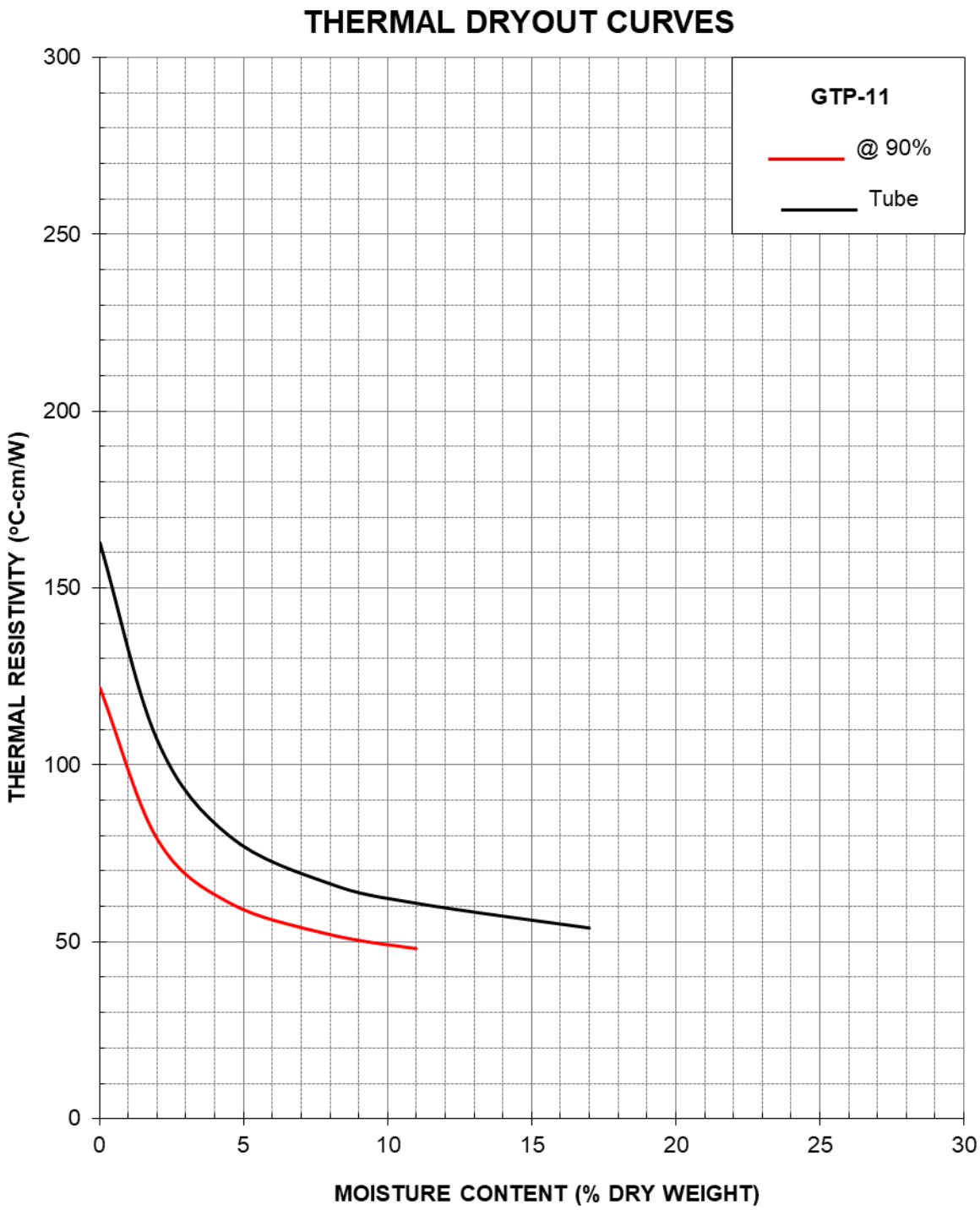


Terracon Consultants, Inc. (Project No. J5205196)

Thermal Analysis of Native Soils

Garnet Solar – Conquest, NY

January 2021 **Figure 8**

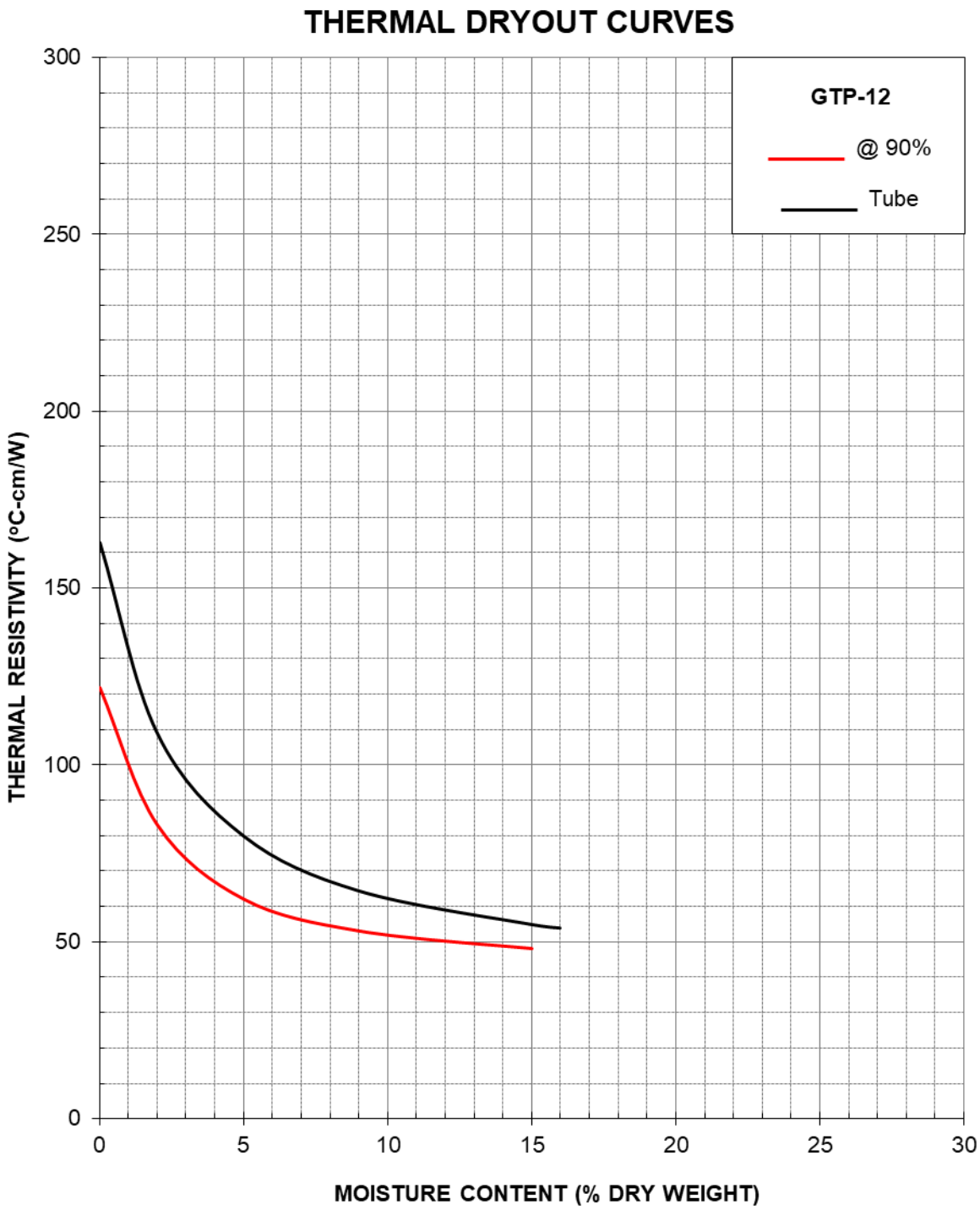


Terracon Consultants, Inc. (Project No. J5205196)

Thermal Analysis of Native Soils

Garnet Solar – Conquest, NY

January 2021 **Figure 9**



Terracon Consultants, Inc. (Project No. J5205196)

Thermal Analysis of Native Soils

Garnet Solar – Conquest, NY

January 2021 **Figure 10**

APPENDIX D – FIELD SOIL ELECTRICAL RESISTIVITY

Contents:

Note: All attachments are one page unless noted above.

FIELD SOIL ELECTRICAL RESISITIVTY TEST LOCATIONS

Garnet Solar ■ Cayuga County, New York

Terracon Project No. J5205196

Terracon GeoReport

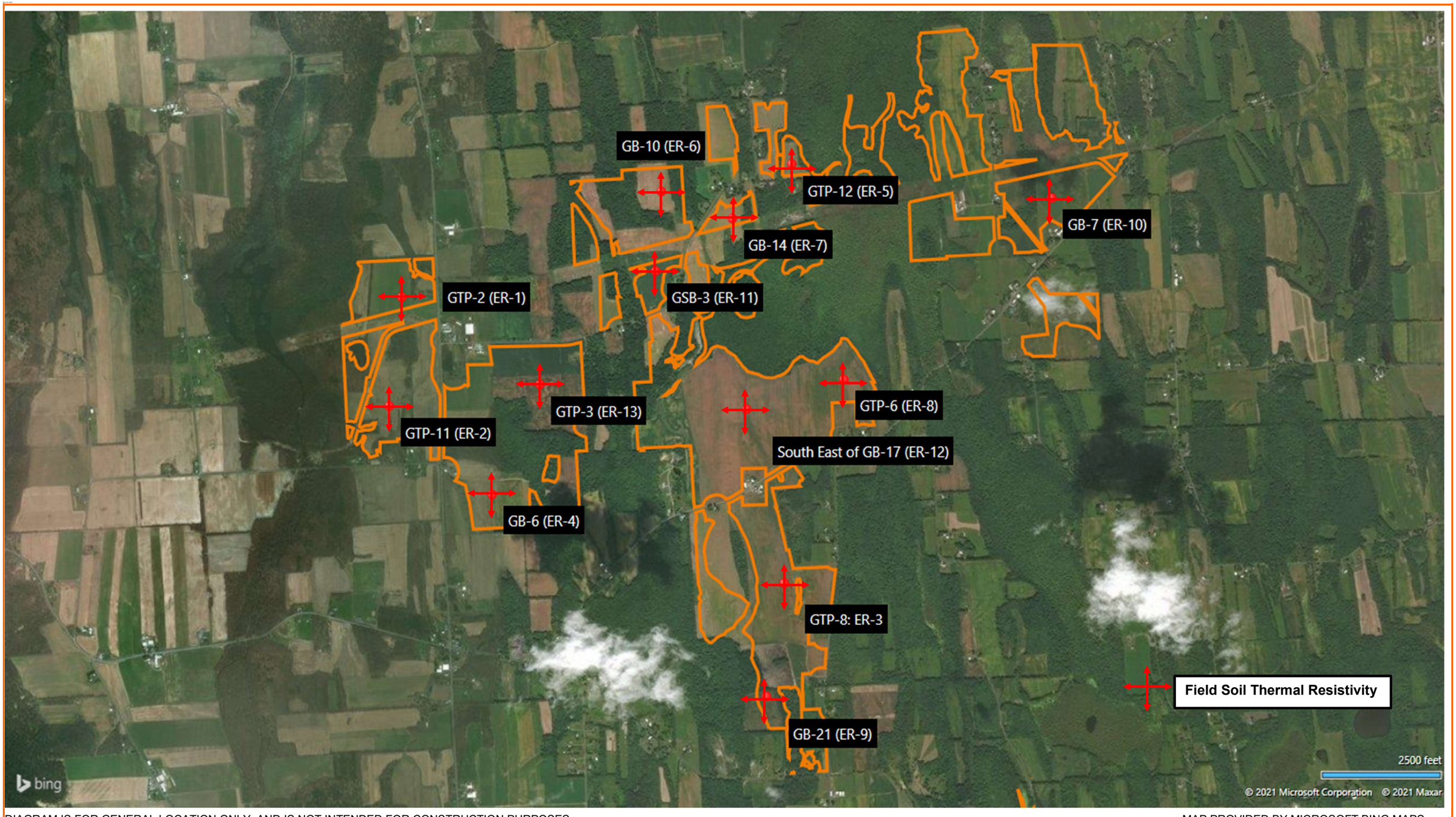


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY MICROSOFT BING MAPS

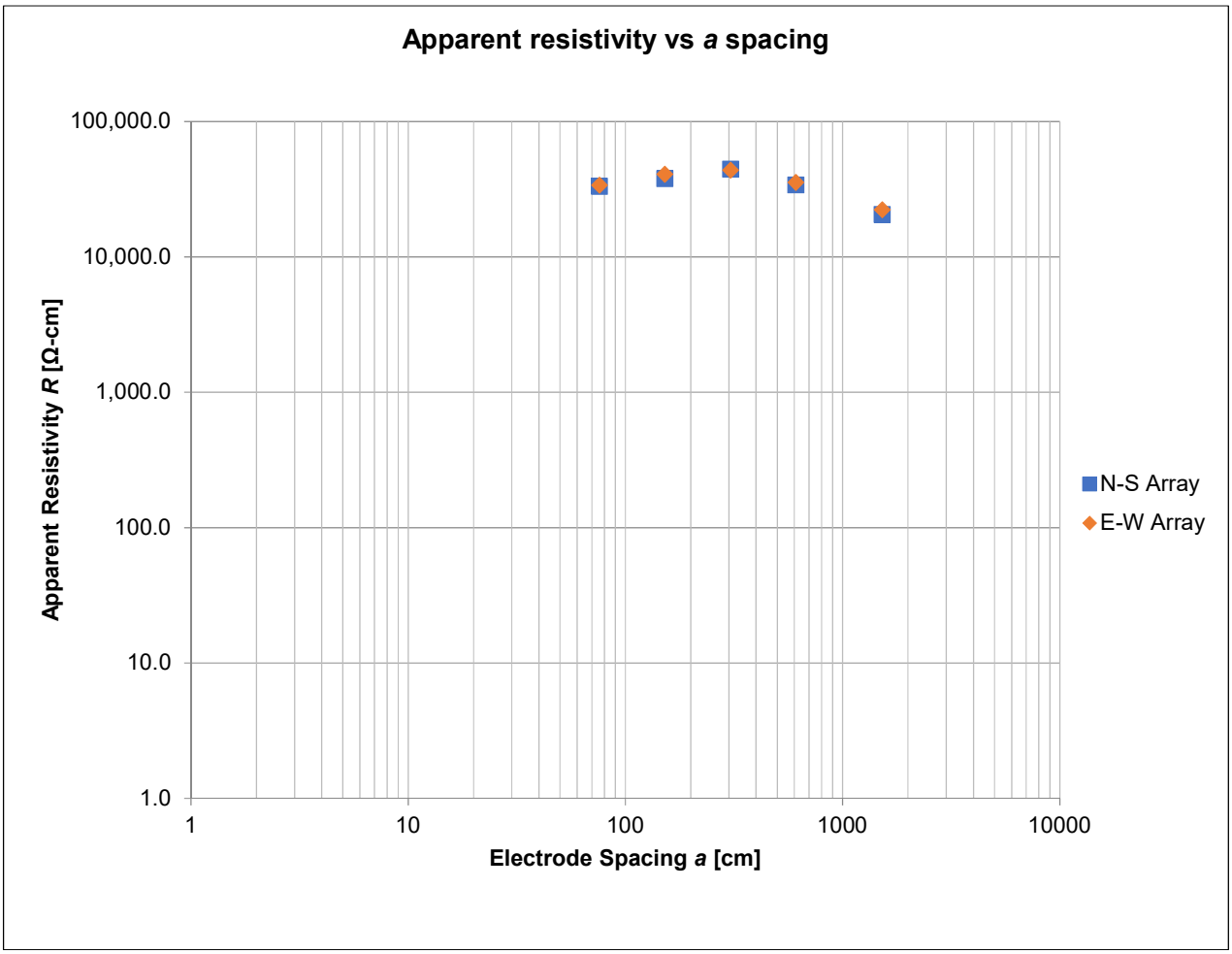
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GTP-2: ER-1 (43.1408 N, -76.6517 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Clear
Serial #	SN-306	**Ground Cond.**	Cut bean field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
2.5	76	6	15	65.60	33340	66.90	34000
5	152	6	15	39.10	37970	42.10	40880
10	305	6	15	23.20	44650	22.80	43880
20	610	12	30	8.85	34070	9.26	35620
50	1524	12	30	2.15	20620	2.33	22280



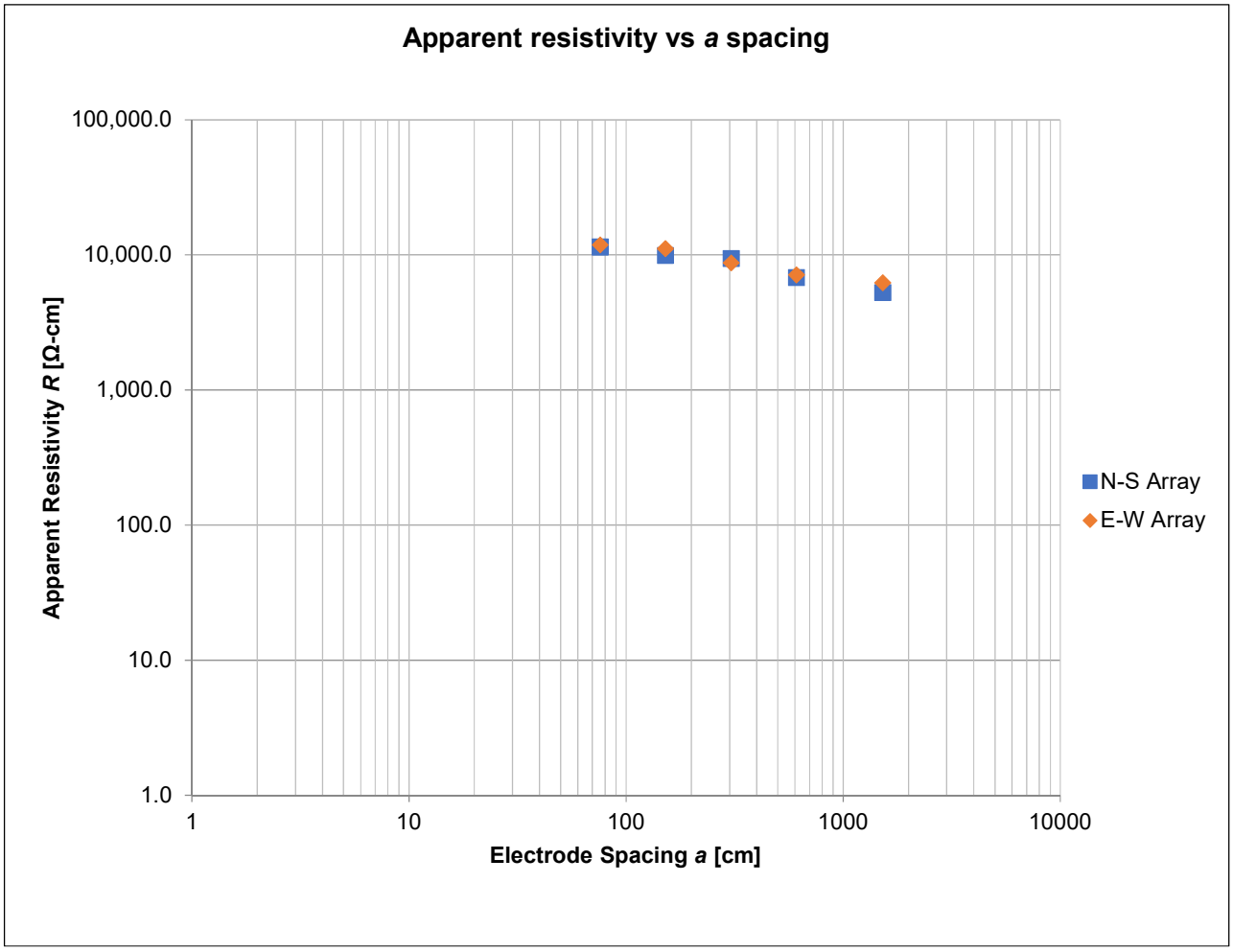
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GTP-11: ER-2 (43.1347 N, -76.6527 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Clear
Serial #	SN-306	**Ground Cond.**	Cut bean field with cover crop
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
[feet]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
2.5	76	6	15	22.60	11490	23.40	11890
5	152	6	15	10.25	9950	11.50	11170
10	305	6	15	4.91	9450	4.55	8750
20	610	12	30	1.77	6800	1.85	7120
50	1524	12	30	0.55	5270	0.65	6230



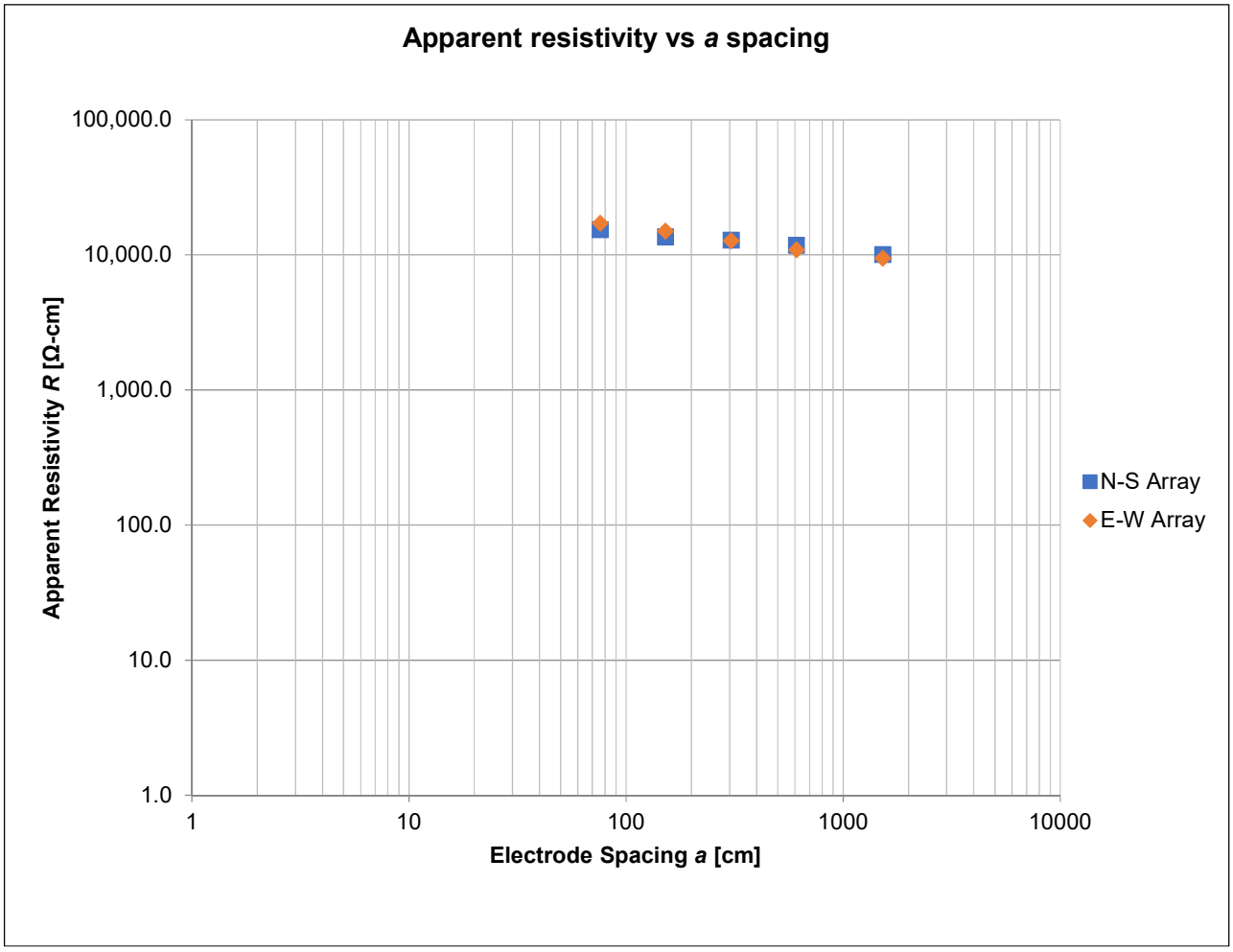
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GTP-8:ER-3 (43.1248 N, -76.6217 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	overcast
Serial #	SN-306	**Ground Cond.**	Corn field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
2.5	76	6	15	30.20	15350	33.80	17180
5	152	6	15	14.04	13630	15.45	15000
10	305	6	15	6.71	12910	6.64	12780
20	610	12	30	3.07	11820	2.85	10950
50	1524	12	30	1.05	10060	0.99	9480



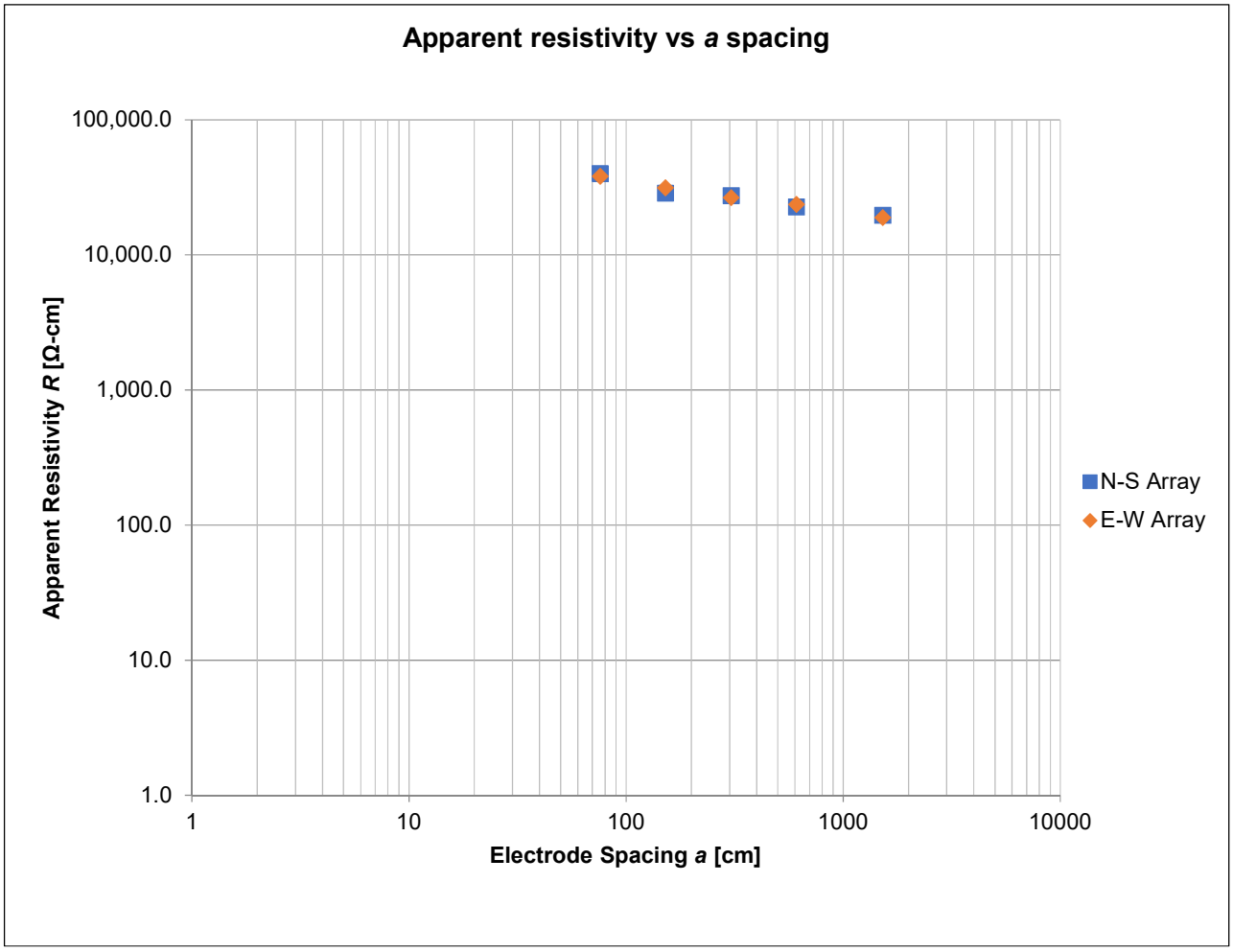
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GB-6:ER-4 (43.1298 N, -76.6446 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Overcast
Serial #	SN-306	**Ground Cond.**	Cut corn field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
[feet]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
2.5	76	6	15	79.10	40200	75.20	38220
5	152	6	15	29.50	28650	32.50	31560
10	305	6	15	14.30	27510	13.85	26650
20	610	12	30	5.90	22710	6.16	23690
50	1524	12	30	2.05	19640	1.98	18970

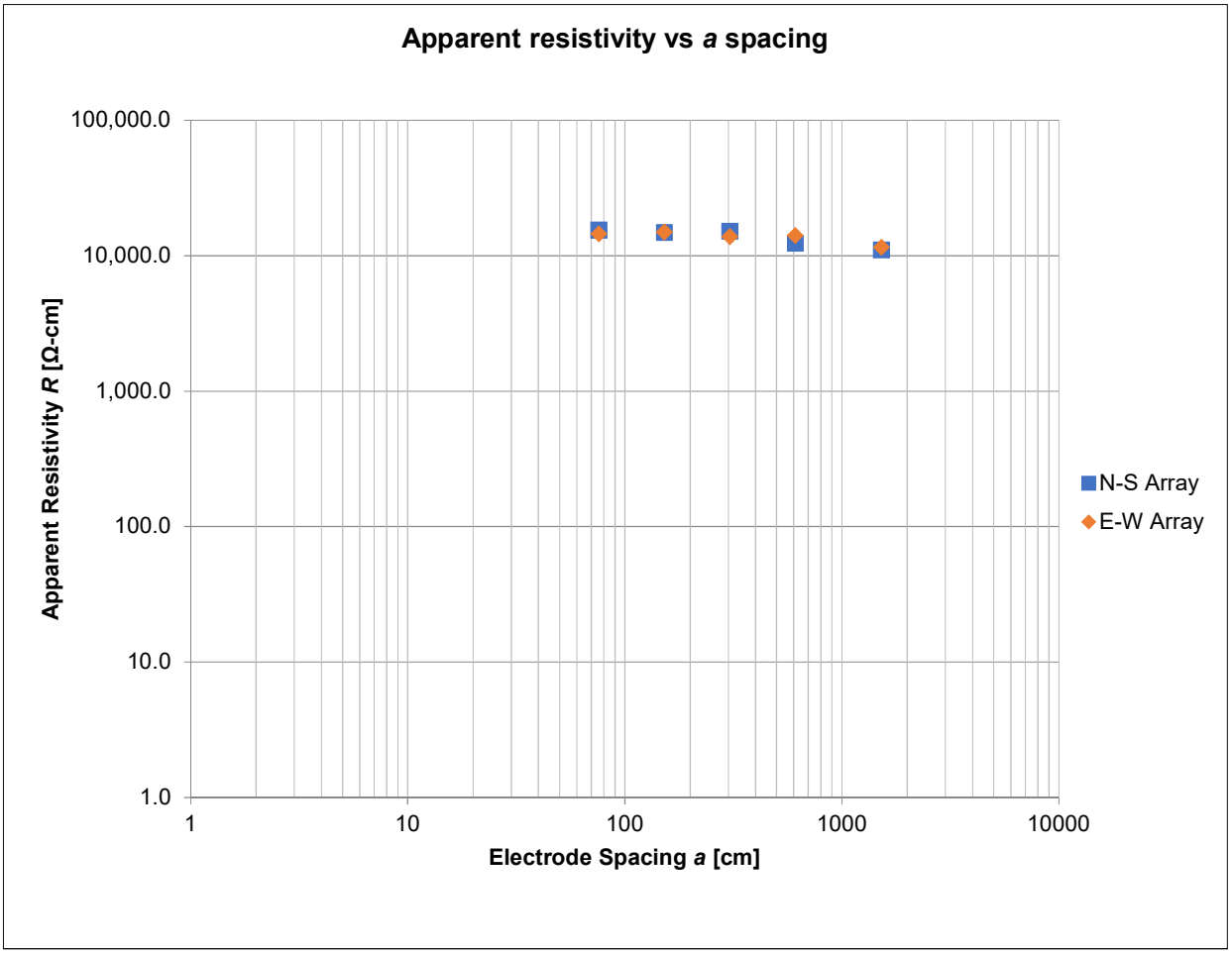


FIELD ELECTRICAL RESISTIVITY TEST DATA
Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GTP-12: ER-5 (43.1482 N, -76.6211 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Overcast
Serial #	SN-306	**Ground Cond.**	Cut corn field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
2.5	76	6	15	30.40	15450	28.40	14430
5	152	6	15	15.23	14790	15.40	14950
10	305	6	15	7.87	15140	7.18	13820
20	610	12	30	3.21	12340	3.65	14050
50	1524	12	30	1.15	11020	1.20	11500



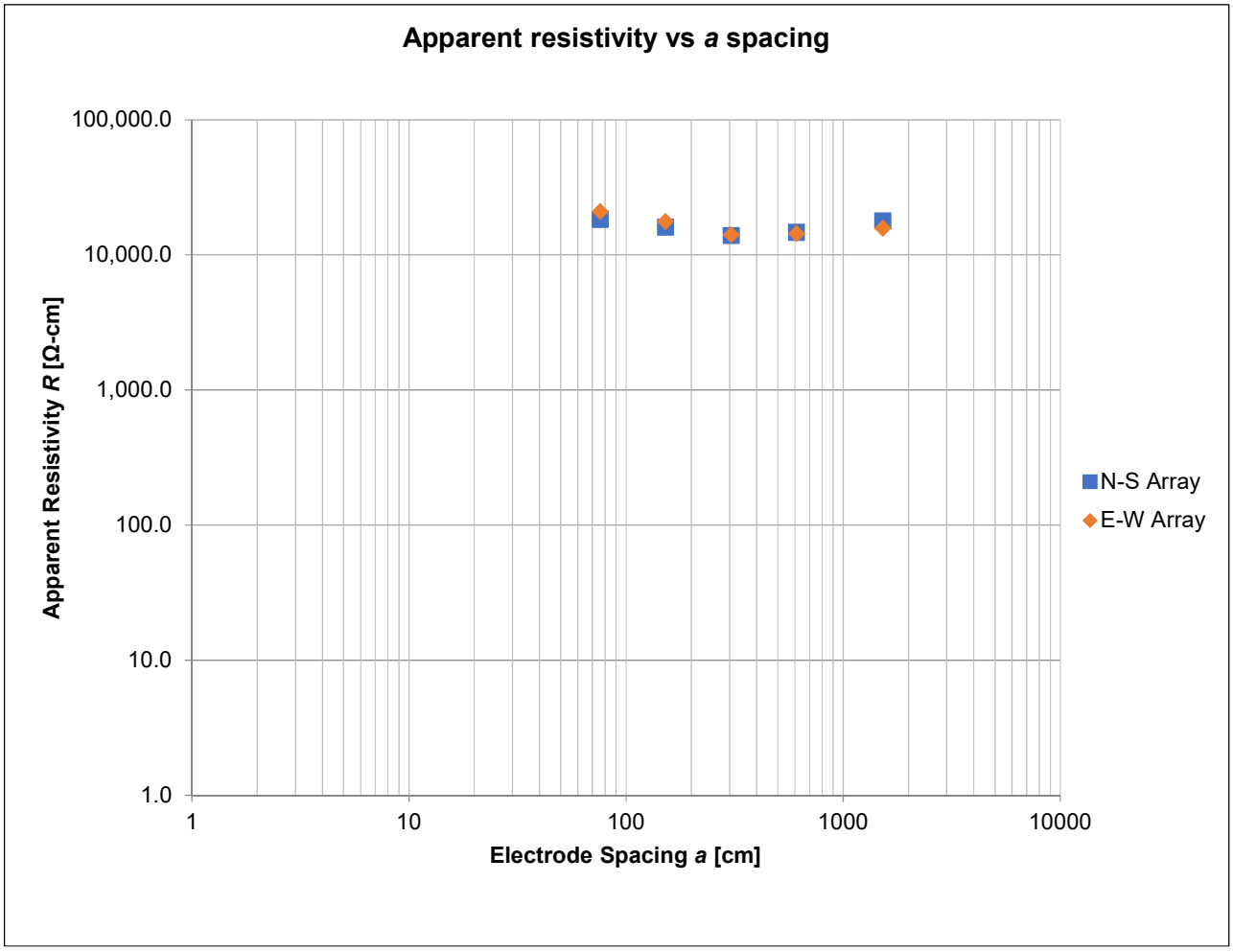
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GB-10: ER-6 (43.1467 N, -76.6313 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Overcast
Serial #	SN-306	**Ground Cond.**	Cut corn field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
[feet]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
2.5	76	6	15	36.10	18350	41.30	20990
5	152	6	15	16.62	16140	18.20	17670
10	305	6	15	7.25	13940	7.35	14140
20	610	12	30	3.83	14730	3.75	14430
50	1524	12	30	1.87	17940	1.65	15810



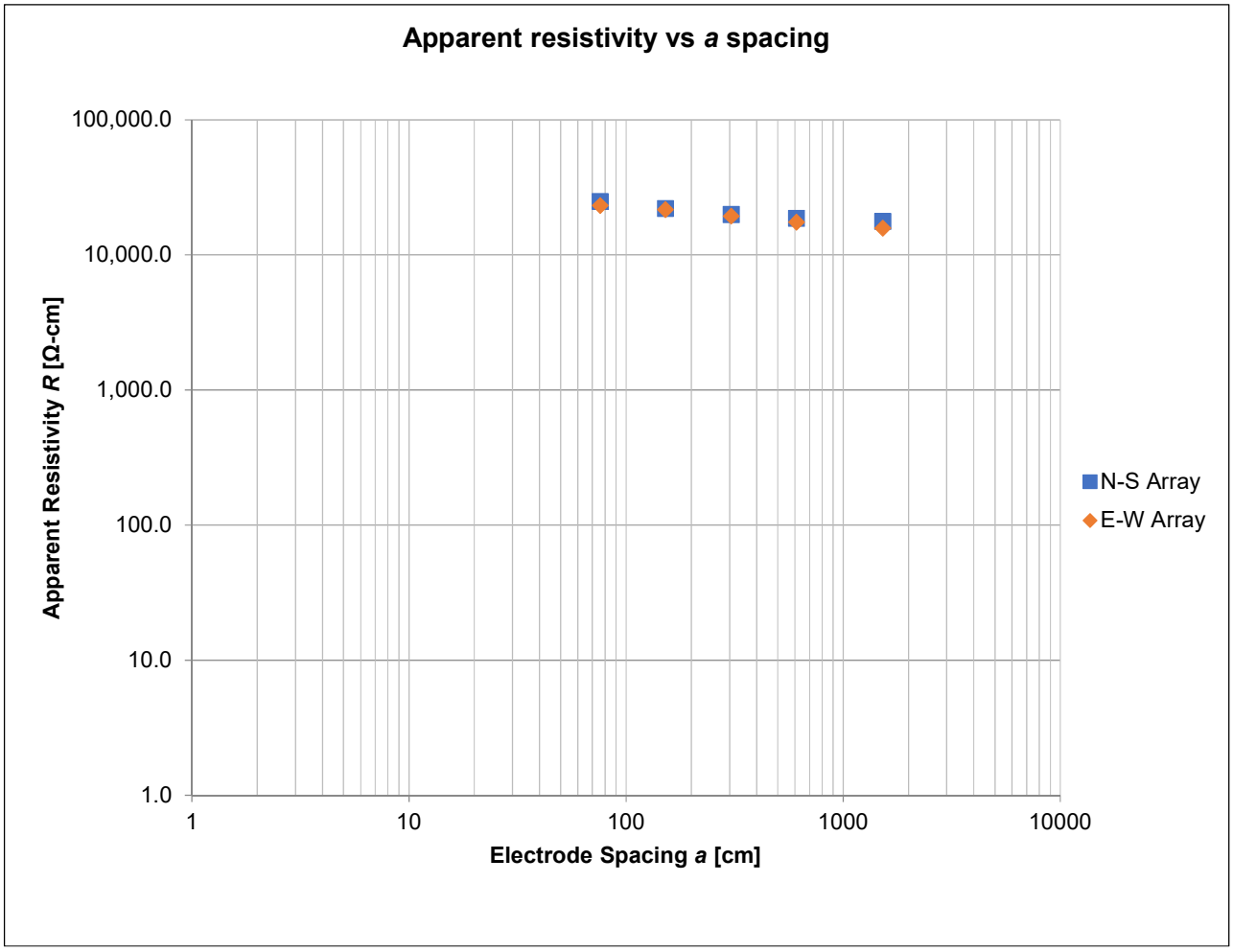
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GB-14:ER-7 (43.1452 N, -76.6257 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Overcast
Serial #	SN-306	**Ground Cond.**	Cut corn field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
[feet]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
2.5	76	6	15	49.10	24950	45.80	23280
5	152	6	15	22.80	22140	22.40	21750
10	305	6	15	10.39	20000	10.10	19440
20	610	12	30	4.86	18700	4.55	17510
50	1524	12	30	1.85	17730	1.65	15810



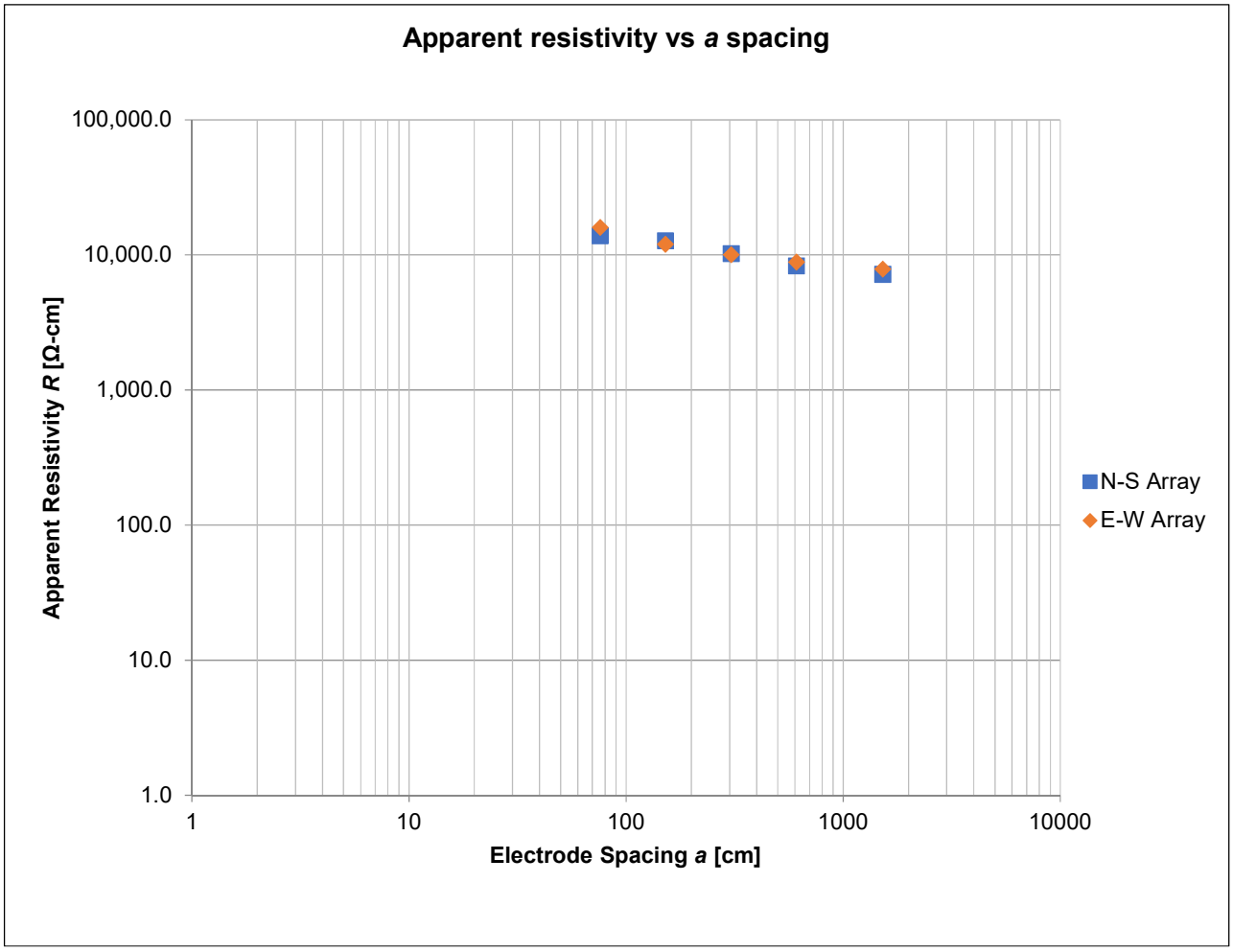
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GTP-6: ER-8 (43.1362 N, -76.6170 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Overcast
Serial #	SN-306	**Ground Cond.**	Cut corn field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
[feet]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
2.5	76	6	15	27.30	13870	31.60	16060
5	152	6	15	13.18	12790	12.40	12040
10	305	6	15	5.33	10260	5.22	10050
20	610	12	30	2.16	8310	2.31	8890
50	1524	12	30	0.75	7190	0.82	7860



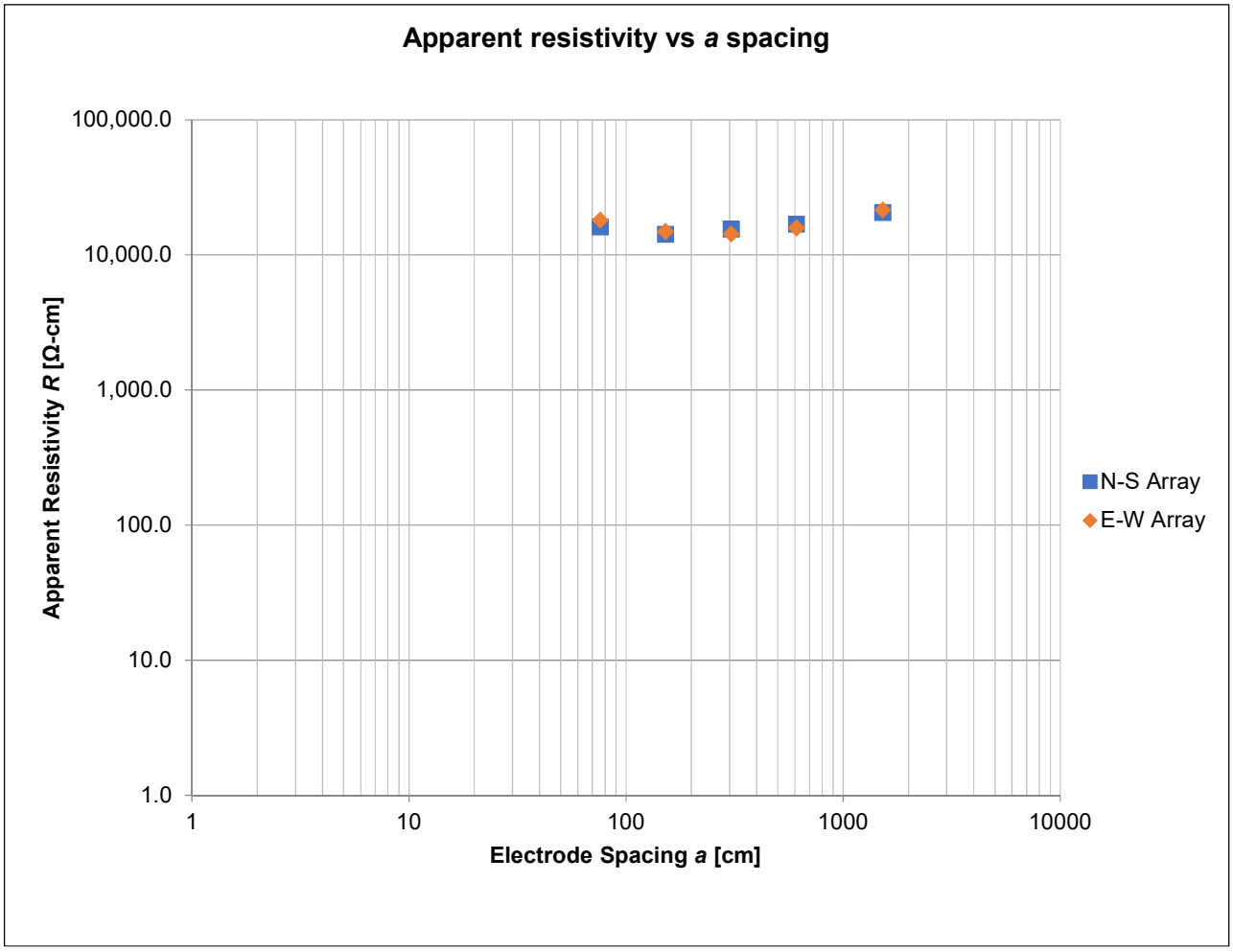
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GB-21: ER-9 (43.1185 N, -76.6231 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Overcast
Serial #	SN-306	**Ground Cond.**	Cut corn field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
[feet]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
2.5	76	6	15	31.90	16210	35.80	18190
5	152	6	15	14.72	14290	15.40	14950
10	305	6	15	8.09	15570	7.45	14340
20	610	12	30	4.41	16970	4.12	15860
50	1524	12	30	2.15	20600	2.25	21560



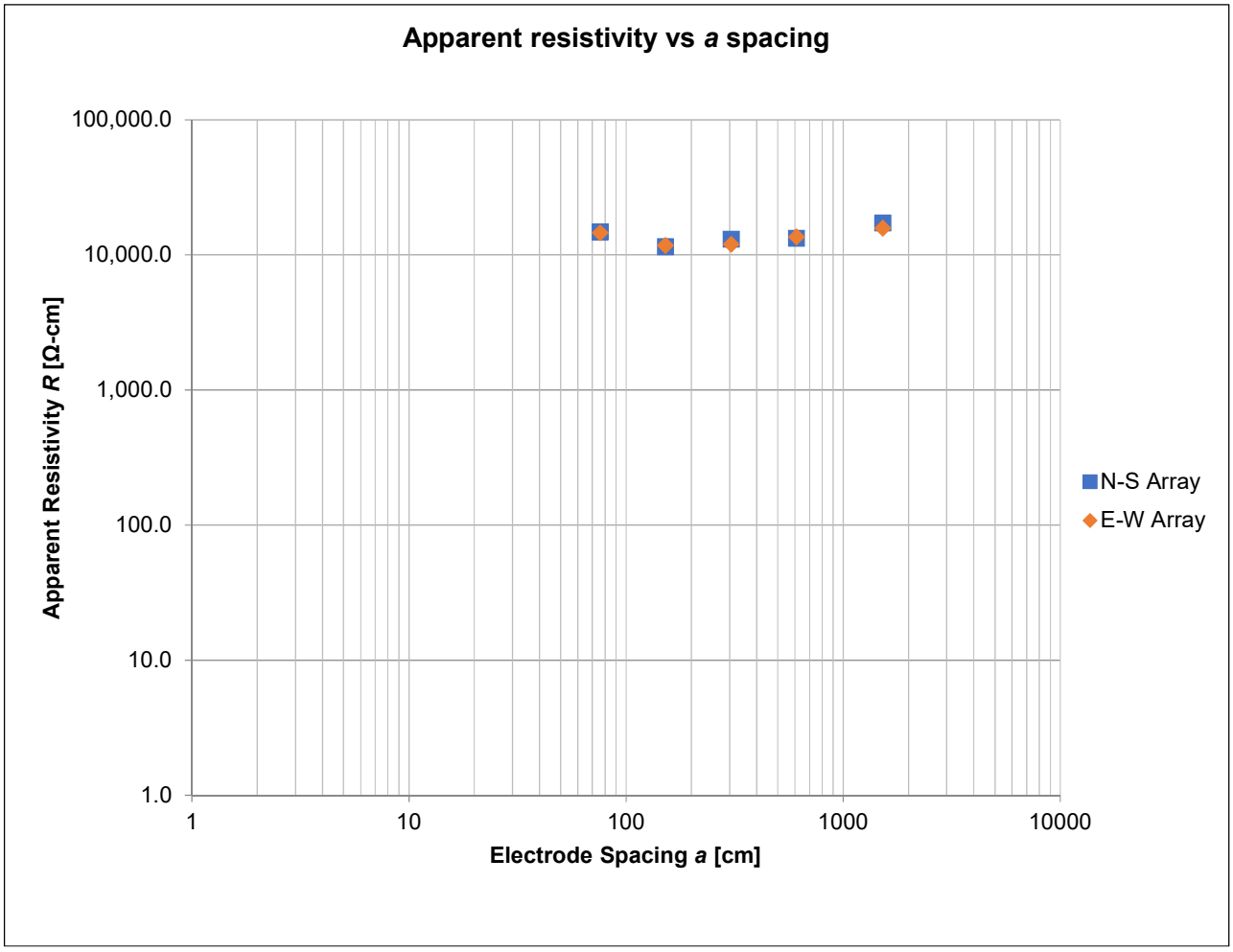
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GB-7:ER-10 (43.1463 N, -76.6007 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Overcast
Serial #	SN-306	**Ground Cond.**	Cut corn field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
2.5	76	6	15	29.10	14790	28.70	14590
5	152	6	15	11.87	11530	12.14	11790
10	305	6	15	6.82	13130	6.24	12010
20	610	12	30	3.47	13340	3.54	13630
50	1524	12	30	1.80	17250	1.65	15810

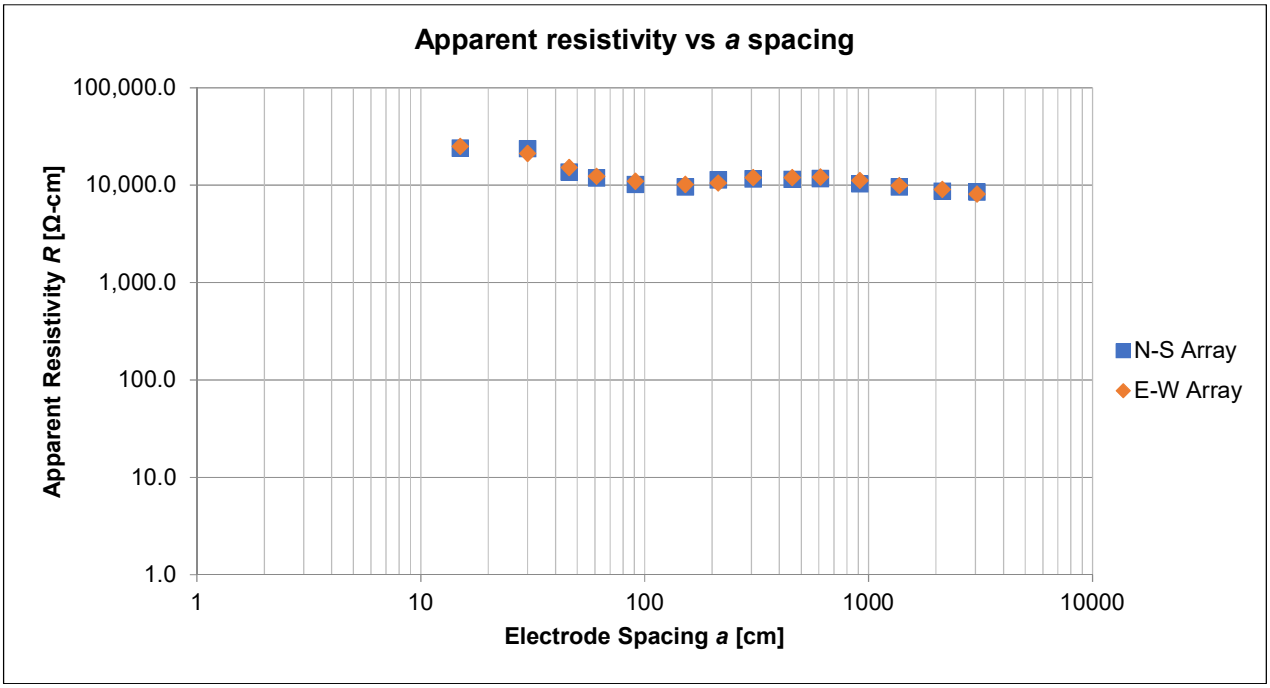


FIELD ELECTRICAL RESISTIVITY TEST DATA
Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GSB-3:ER-11 (43.1423 N, -76.6318 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Clear
Serial #	SN-306	**Ground Cond.**	Cut corn field with cover f crop
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 10, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
0.5	15	6	15	151.60	24070	158.40	25150
1	30	6	15	95.80	23760	85.50	21210
1.5	46	6	15	40.90	13710	45.50	15250
2	61	6	15	28.30	11900	29.50	12400
3	91	6	15	17.07	10200	18.40	11000
5	152	6	15	9.91	9620	10.50	10200
7	213	6	15	8.40	11340	7.85	10600
10	305	6	15	6.07	11680	6.25	12030
15	457	6	15	4.02	11560	4.16	11960
20	610	12	30	3.06	11790	3.15	12120
30	914	12	30	1.80	10360	1.95	11220
45	1372	12	30	1.12	9620	1.15	9940
70	2134	12	30	0.65	8720	0.68	9050
100	3048	12	30	0.45	8520	0.43	8140



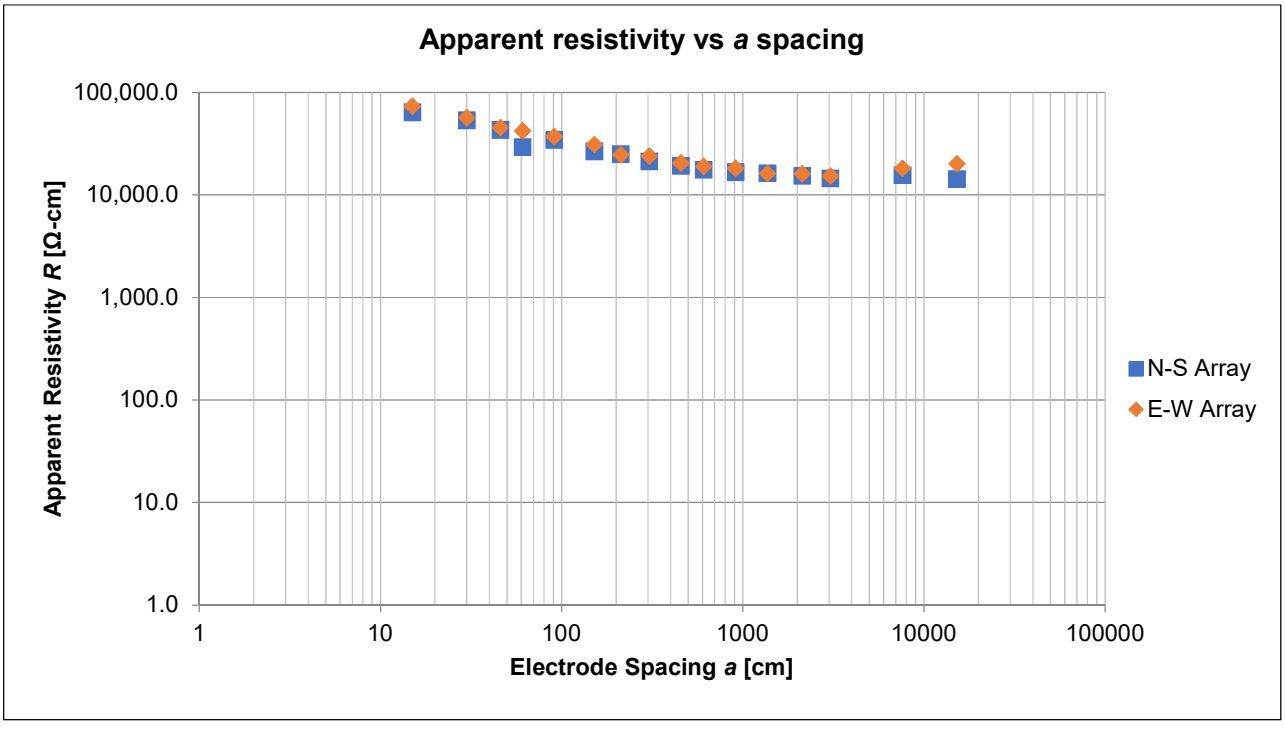
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	South East of GB-17: ER-12 (43.1345 N, -76.6246 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Overcast
Serial #	SN-306	**Ground Cond.**	Cut corn field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 11, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
[feet]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
0.5	15	6	15	403.50	64060	460.20	73060
1	30	6	15	216.10	53600	228.40	56660
1.5	46	6	15	128.70	43140	135.40	45390
2	61	6	15	69.80	29340	100.40	42200
3	91	6	15	57.70	34500	62.40	37310
5	152	6	15	27.50	26700	32.10	31170
7	213	6	15	18.58	25080	18.25	24630
10	305	6	15	11.05	21260	12.40	23860
15	457	6	15	6.69	19230	7.12	20480
20	610	12	30	4.59	17650	4.95	19050
30	914	12	30	2.90	16690	3.15	18120
45	1372	12	30	1.89	16310	1.88	16220
70	2134	12	30	1.15	15420	1.20	16100
100	3048	12	30	0.76	14520	0.80	15320
250	7620	12	30	0.33	15560	0.38	18190
500	15240	12	30	0.15	14360	0.21	20110



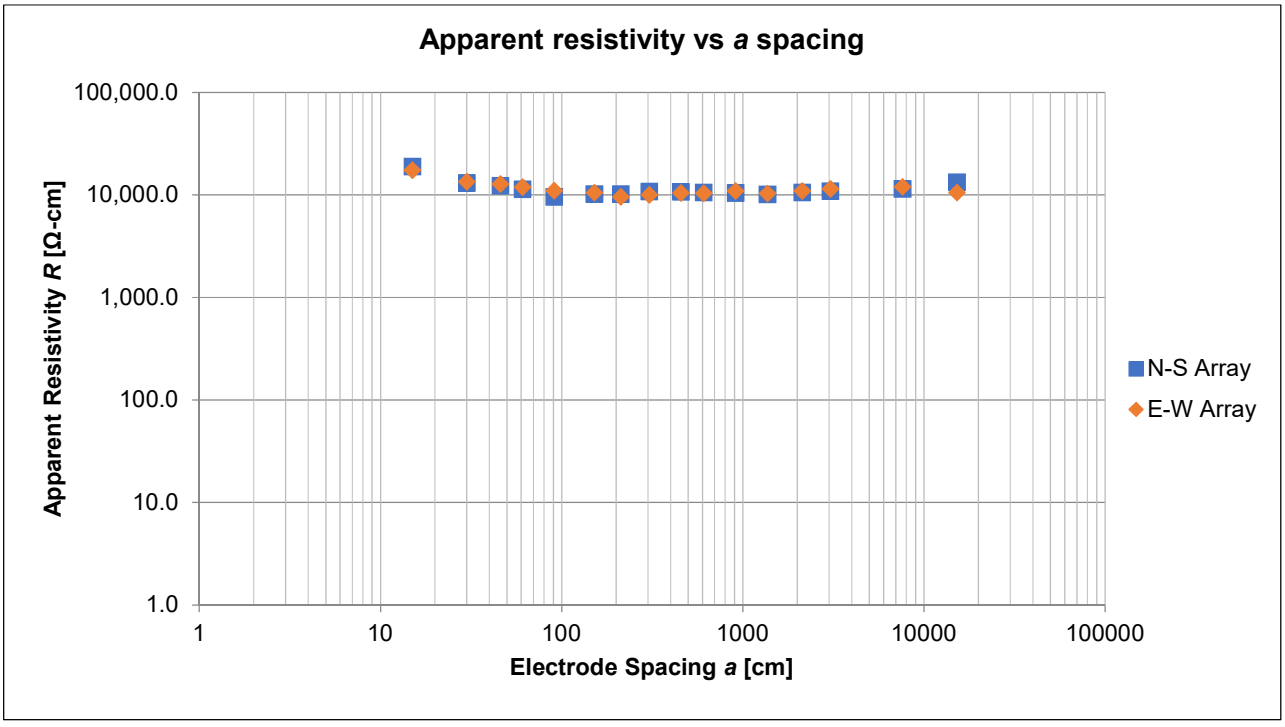
FIELD ELECTRICAL RESISTIVITY TEST DATA

Garnet Solar ■ Cayuga County, Conquest New York
Terracon Project No. J5205196

Array Loc.	GTP-3: ER-13 (43.1356 N, -76.6406 W)		
Instrument	Mini-Res Resistivity Meter	**Weather**	Overcast
Serial #	SN-306	**Ground Cond.**	Cut corn field
Cal. Check	April 19, 2021	**Tested By**	T. Wooden
Test Date	December 11, 2020	**Method**	Wenner 4-pin (ASTM G57-06 (2012); IEEE 81-2012)
Notes & Conflicts	None		

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

Electrode Spacing *a*		Electrode Depth *b*		N-S Test		E-W Test	
[feet]	[centimeters]	[inches]	[centimeters]	Measured Resistance *R*	Apparent Resistivity ρ	Measured Resistance *R*	Apparent Resistivity ρ
				Ω	[Ω-cm]	Ω	[Ω-cm]
0.5	15	6	15	119.70	19000	110.20	17500
1	30	6	15	53.00	13150	54.20	13440
1.5	46	6	15	36.80	12340	38.20	12800
2	61	6	15	27.10	11390	28.40	11940
3	91	6	15	16.07	9600	18.50	11060
5	152	6	15	10.55	10250	10.85	10540
7	213	6	15	7.60	10250	7.12	9610
10	305	6	15	5.64	10850	5.22	10050
15	457	6	15	3.75	10780	3.65	10500
20	610	12	30	2.76	10630	2.71	10430
30	914	12	30	1.82	10470	1.90	10930
45	1372	12	30	1.18	10140	1.20	10350
70	2134	12	30	0.79	10600	0.82	11000
100	3048	12	30	0.57	10920	0.60	11490
250	7620	12	30	0.24	11490	0.25	11970
500	15240	12	30	0.14	13410	0.11	10530



APPENDIX E – TEST PILE DRIVING DATA AND PHOTOS

Contents:

Note: All attachments are one page unless noted above.

PILE LOAD TEST LOCATION PLAN AND ANALYSIS ZONES (ZONE 1 TO ZONE 5)

Garnet Solar ■ Cayuga County, New York
Terracon Project No. J5205196

Terracon GeoReport

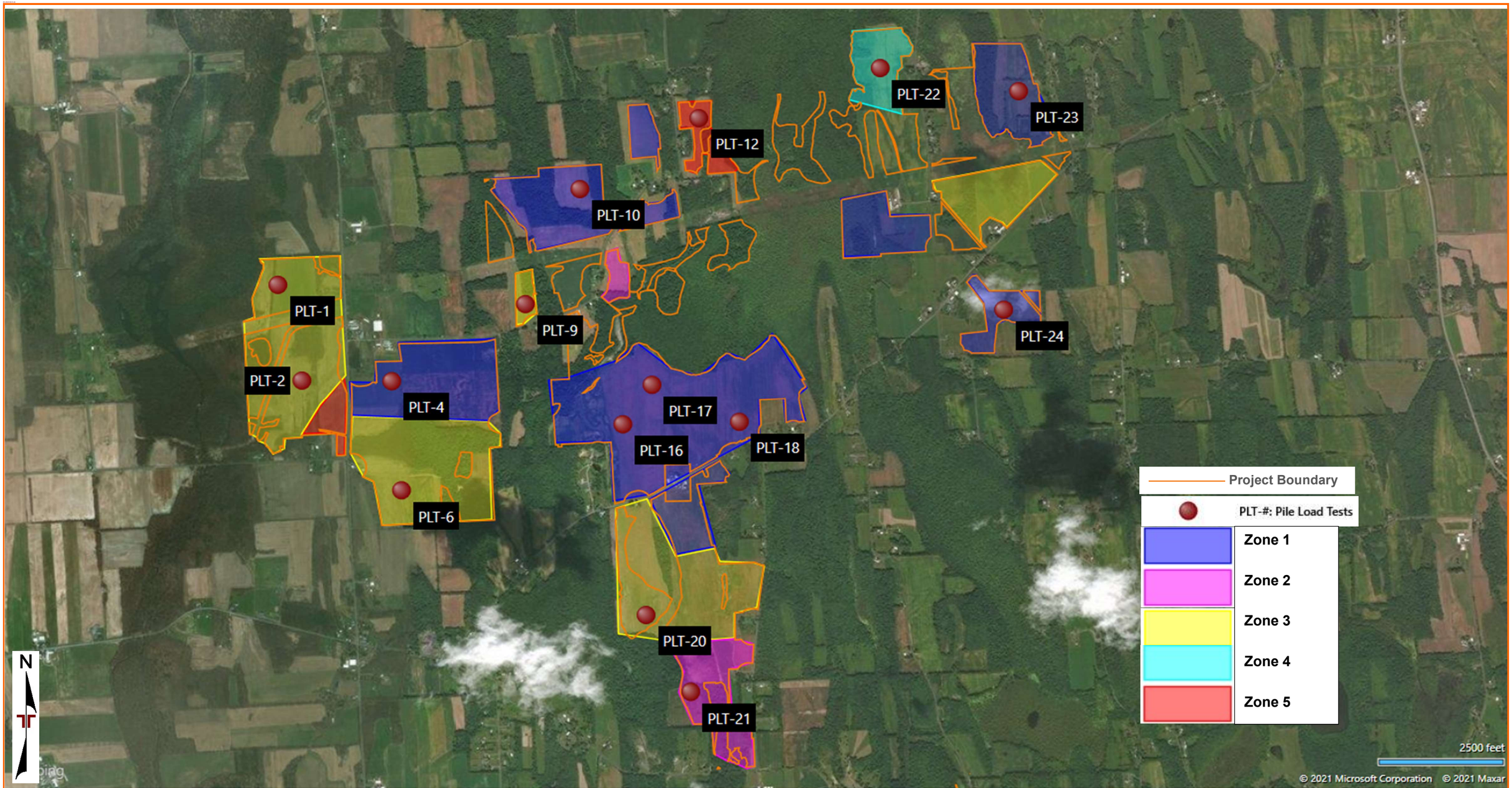
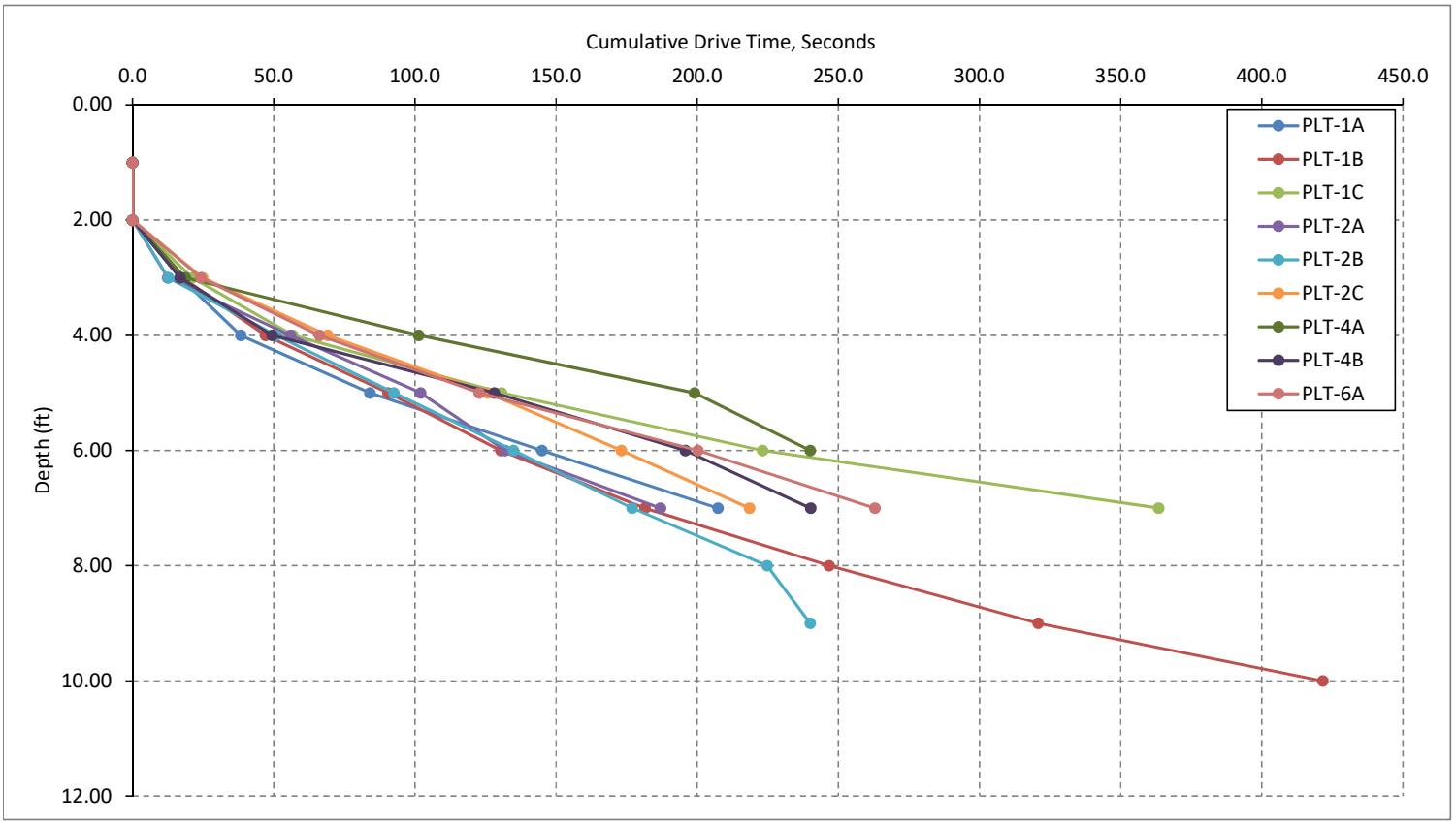


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

MAP PROVIDED BY USGS

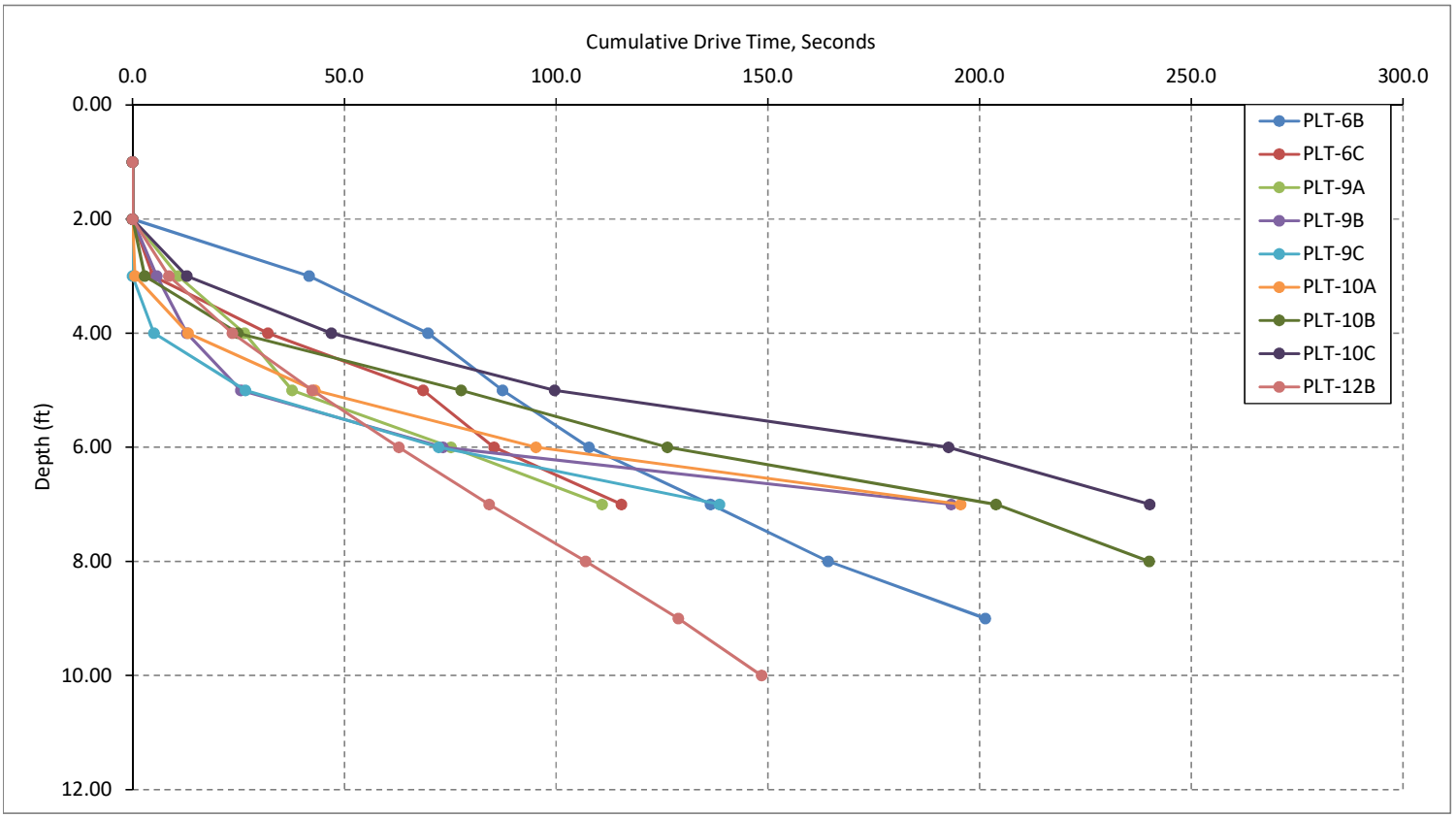
	Cumulative Driving Time (seconds)									
Depth (ft)	**PLT-1A**	**PLT-1B**	**PLT-1C**	**PLT-2A**	**PLT-2B**	**PLT-2C**	**PLT-4A**	**PLT-4B**	**PLT-4C**	**PLT-6A**
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	16.9	17.5	21.1	12.4	12.7	24.8	18.7	16.8	11.7	24.2
4	38.3	47.1	56.8	55.9	50.8	69.1	101.4	49.5	34.5	66.2
5	84.0	90.5	130.7	102.1	92.6	125.8	199.1	128.1	59.5	122.8
6	145.0	130.5	223.2	132.0	134.9	173.2	240.1	195.8	100.5	200.3
7	207.4	181.5	363.5	187.0	177.0	218.5		240.2	189.1	262.9
8		246.7			224.8					
9		320.7			240.1					
10		421.6								
11										
Total Drive Time	**207.4**	**421.6**	**363.5**	**187.0**	**240.1**	**218.5**	**240.1**	**240.2**	**189.1**	**262.9**
Drive Rate (sec/ft.)*	**43.7**	**54.4**	**72.7**	**39.4**	**39.5**	**43.7**	**72.1**	**51.4**	**37.8**	**52.6**
Installed Depth (BGS)	**7.0**	**10.0**	**7.0**	**7.0**	**8.3**	**7.0**	**5.3**	**6.7**	**7.0**	**7.0**
Approximate Depth of Pre-Auger Hole + Push (ft)	**2.25**	**2.25**	**2**	**2.25**	**2.25**	**2**	**2**	**2**	**2**	**2**
Installation Date	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/17/21**
Section	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**
Predrilled Hole	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

*** Drive Rate = Total Drive Time / ((Embedment Depth -(Pre-Auger+Push Depth))**



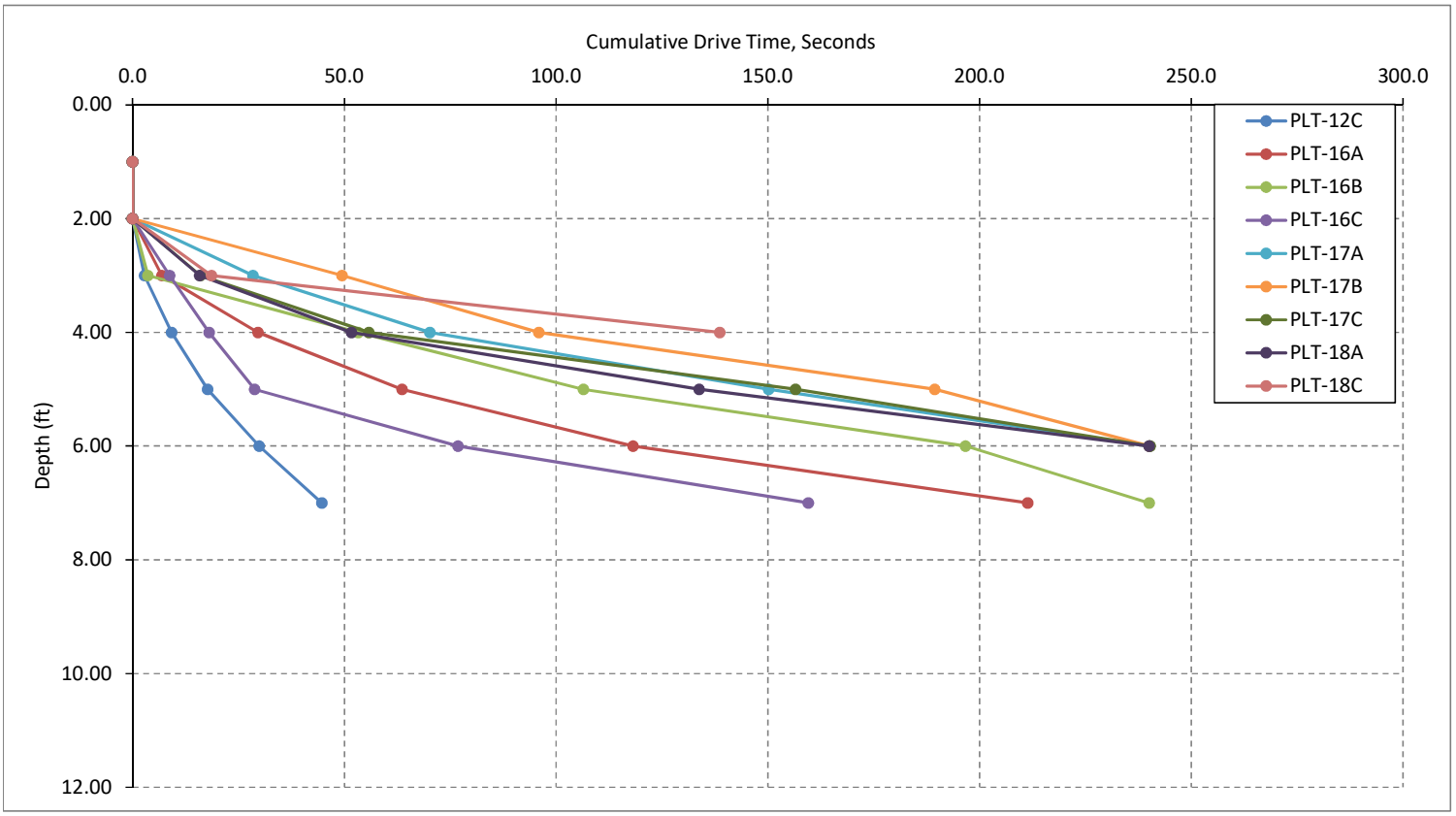
	Cumulative Driving Time (seconds)									
Depth (ft)	**PLT-6B**	**PLT-6C**	**PLT-9A**	**PLT-9B**	**PLT-9C**	**PLT-10A**	**PLT-10B**	**PLT-10C**	**PLT-12A**	**PLT-12B**
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	41.7	4.9	10.8	5.7	0.0	0.5	2.9	12.8	11.7	8.6
4	69.8	32.0	26.4	12.8	5.1	13.1	24.9	47.0	33.0	23.5
5	87.4	68.6	37.7	25.6	26.7	43.1	77.6	99.7	56.4	42.4
6	107.8	85.4	75.2	73.3	72.3	95.2	126.3	192.7	80.7	62.9
7	136.5	115.4	110.9	193.3	138.6	195.5	203.9	240.2	104.9	84.2
8	164.3						240.1			107.0
9	201.4									128.9
10	314.3									148.5
11										
Total Drive Time	**314.3**	**115.4**	**110.9**	**193.3**	**138.6**	**195.5**	**240.1**	**240.2**	**104.9**	**148.5**
Drive Rate sec/ft.*	**39.3**	**24.3**	**22.2**	**47.4**	**37.0**	**46.0**	**49.7**	**56.5**	**21.0**	**18.6**
Installed Depth (BGS)	**10.0**	**7.0**	**7.0**	**6.6**	**7.0**	**7.0**	**7.3**	**6.3**	**7.0**	**10.0**
Approximate Depth of Pre-Auger Hole + Push (ft)	**2**	**2.25**	**2**	**2.5**	**3.25**	**2.75**	**2.5**	**2**	**2**	**2**
Installation Date	**3/17/21**	**3/17/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**
Section	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**

***Drive Rate = Total Drive Time / ((Embedment Depth -(Pre-Auger+Push Depth))**



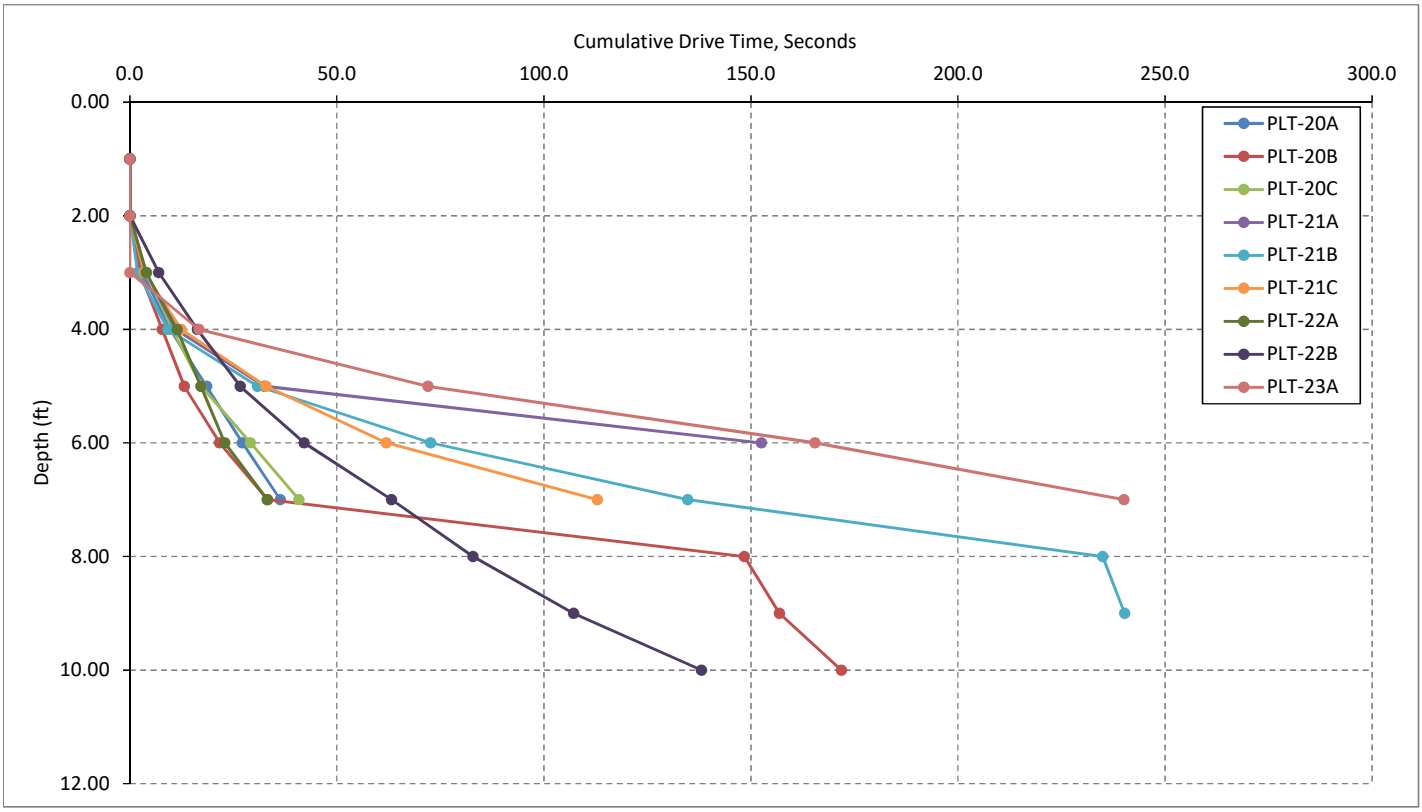
	Cumulative Driving Time (seconds)									
Depth (ft)	**PLT-12C**	**PLT-16A**	**PLT-16B**	**PLT-16C**	**PLT-17A**	**PLT-17B**	**PLT-17C**	**PLT-18A**	**PLT-18B**	**PLT-18C**
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	2.8	6.9	3.6	8.7	28.4	49.4	16.0	15.9	26.0	18.7
4	9.2	29.6	53.3	18.1	70.2	95.9	55.8	51.7	62.4	138.7
5	17.7	63.6	106.4	28.8	150.2	189.4	156.5	133.8	118.8	
6	29.9	118.2	196.7	76.8	240.1	240.1	240.3	240.0	222.2	
7	44.7	211.4	240.1	159.6					240.0	
8										
9										
10										
11										
Total Drive Time	**44.7**	**211.4**	**240.1**	**159.6**	**240.1**	**240.1**	**240.3**	**240.0**	**240.0**	**138.7**
Drive Rate sec/ft.*	**9.9**	**44.5**	**56.5**	**31.9**	**62.7**	**65.4**	**65.5**	**61.2**	**57.6**	**69.3**
Installed Depth (BGS)	**7.0**	**7.0**	**6.5**	**7.0**	**5.8**	**5.7**	**5.7**	**5.9**	**6.2**	**4.0**
Approximate Depth of Pre-Auger Hole + Push (ft)	**2.5**	**2.25**	**2.25**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Installation Date	**3/16/21**	**3/17/21**	**3/17/21**	**3/17/21**	**3/17/21**	**3/17/21**	**3/17/21**	**3/17/21**	**3/17/21**	**3/17/21**
Section	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**

***Drive Rate = Total Drive Time / ((Embedment Depth -(Pre-Auger+Push Depth))**



	Cumulative Driving Time (seconds)									
Depth (ft)	**PLT-20A**	**PLT-20B**	**PLT-20C**	**PLT-21A**	**PLT-21B**	**PLT-21C**	**PLT-22A**	**PLT-22B**	**PLT-22C**	**PLT-23A**
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	3.0	2.5	4.1	3.9	1.9	3.5	3.9	7.0	10.2	0.0
4	9.7	7.9	10.2	11.1	9.2	12.4	11.5	16.3	19.5	16.7
5	18.5	13.1	17.3	32.5	30.8	32.9	17.1	26.6	27.8	72.0
6	27.2	21.7	29.1	152.5	72.6	61.9	22.9	42.1	37.1	165.5
7	36.3	33.3	40.9		134.7	112.9	33.2	63.2	53.4	240.1
8		148.4			234.9			82.8		
9		156.9			240.3			107.2		
10		171.9						138.0		
11										
Total Drive Time	**36.3**	**171.9**	**40.9**	**152.5**	**240.3**	**112.9**	**33.2**	**138.0**	**53.4**	**240.1**
Drive Rate sec/ft.*	**8.1**	**22.9**	**8.6**	**50.8**	**43.1**	**23.8**	**7.0**	**17.3**	**10.7**	**72.1**
Installed Depth (BGS)	**7.0**	**10.0**	**7.0**	**5.5**	**8.1**	**7.0**	**7.0**	**10.0**	**7.0**	**6.6**
Approximate Depth of Pre-Auger Hole + Push (ft)	**2.5**	**2.5**	**2.25**	**2.5**	**2.5**	**2.25**	**2.25**	**2**	**2**	**3.25**
Installation Date	**03/17/21**	**03/17/21**	**03/17/21**	**03/17/21**	**03/17/21**	**03/17/21**	**03/16/21**	**03/16/21**	**03/16/21**	**03/16/21**
Section	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**
Predrilled Hole	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**	**No**
Predill Diameter (in)										
Predrill Time (Sec.)										

***Drive Rate = Total Drive Time / ((Embedment Depth -(Pre-Auger+Push Depth))**



	Cumulative Driving Time (seconds)									
Depth (ft)	**PLT-23B**	**PLT-23C**	**PLT-24A**	**PLT-24B**	**PLT-24C**					
1	0.0	0.0	0.0	0.0	0.0					
2	0.0	0.0	0.0	0.0	0.0					
3	0.0	4.4	3.0	7.9	8.5					
4	15.9	26.8	16.9	49.4	39.9					
5	79.7	61.0	61.6	98.2	103.8					
6	155.3	170.9	181.6	149.4	240.2					
7	286.1	240.1		240.1						
8										
9										
10										
11										
Total Drive Time	**286.1**	**240.1**	**181.6**	**240.1**	**240.2**					
Drive Rate sec/ft.*	**76.3**	**60.0**	**62.2**	**56.5**	**67.1**					
Installed Depth (BGS)	**7.0**	**6.5**	**5.4**	**6.8**	**5.8**					
Approximate Depth of Pre-Auger Hole + Push (ft)	**3.25**	**2.5**	**2.5**	**2.5**	**2.25**					
Installation Date	**3/16/21**	**3/16/21**	**3/16/21**	**3/16/21**						
Section	**W6x9**	**W6x9**	**W6x9**	**W6x9**	**W6x9**					
Predrilled Hole	**No**	**No**	**No**	**No**	**No**					
Predill Diameter (in)										
Predrill Time (Sec.)										

***Drive Rate = Total Drive Time / ((Embedment Depth -(Pre-Auger+Push Depth))**

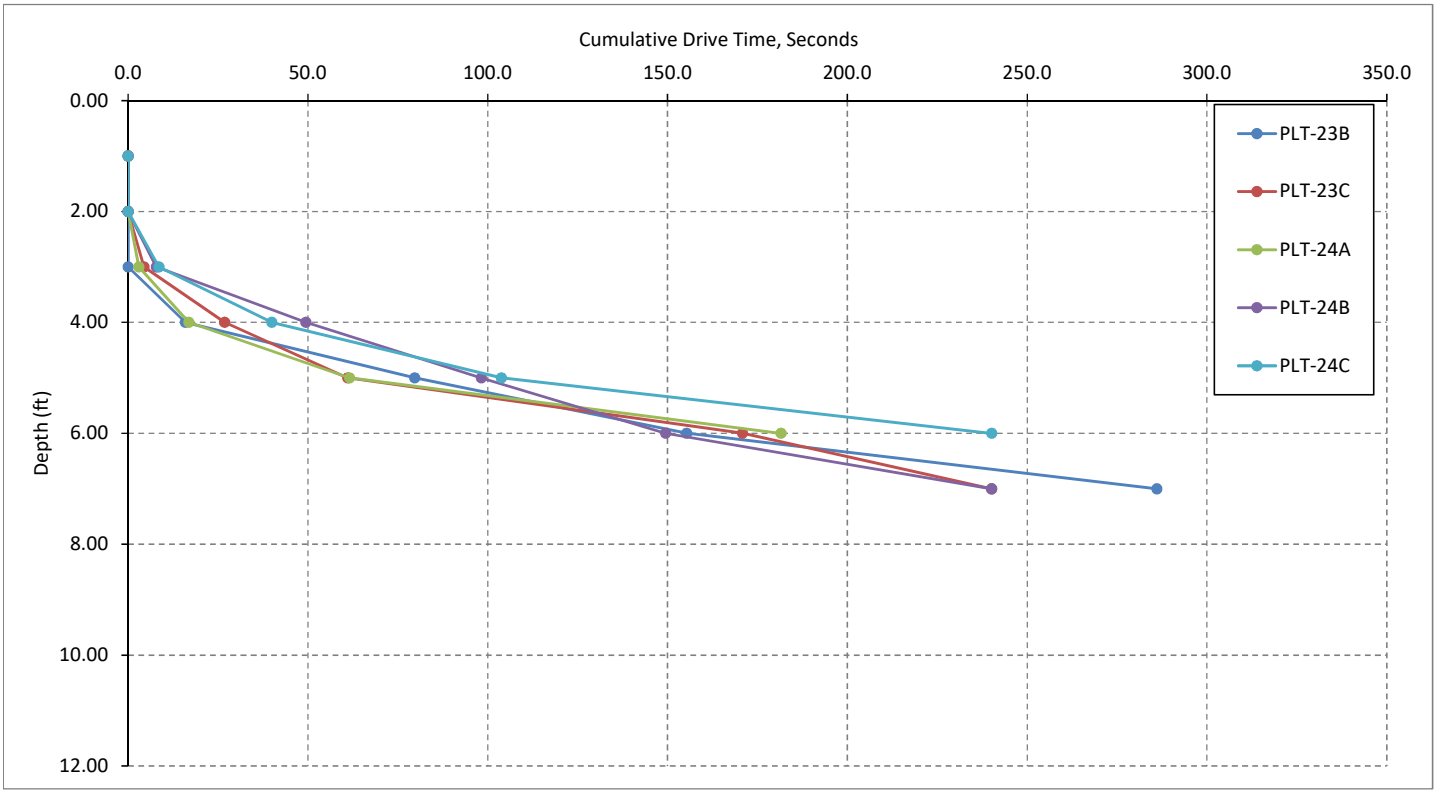


Photo 1: Axial uplift setup (Typical)

Photo 2: Axial uplift deflection measurements (Typical)

Photo 3: Lateral capacity beam clamp and dynamometer (Typical)

Photo 4: Lateral capacity setup (Typical)

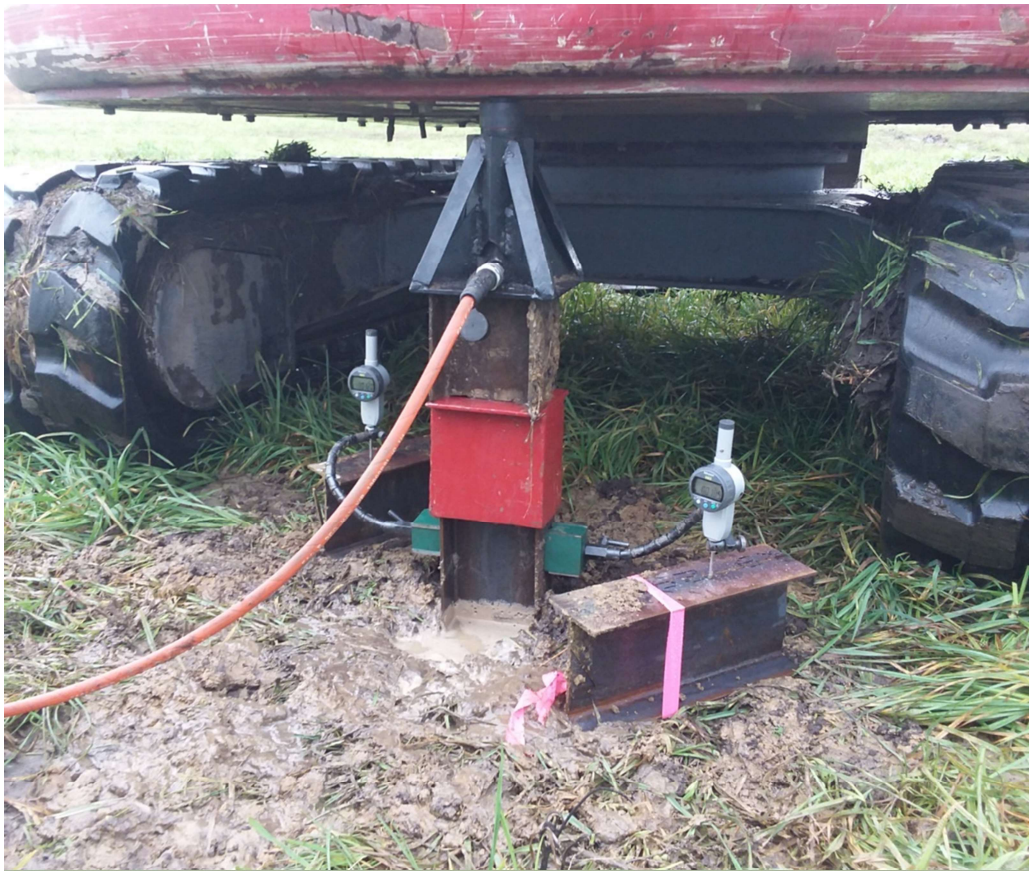


Photo 5: Compression load setup and deflection measurements (Typical)

Photo 6: Compression load setup (Typical)

Photo 7: PLT-1

Photo 8: PLT-2

Photo 9: PLT-4

Photo 10: PLT-9

Photo 11: PLT-10

Photo 12: PLT-22

Photo 13: PLT-23

Photo 14: PLT-24

APPENDIX F – PILE LOAD TEST RESULTS – AXIAL TENSION LOAD

Contents:

Note: All attachments are one page unless noted above.

Tension Load Test Result for PLT-1A

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

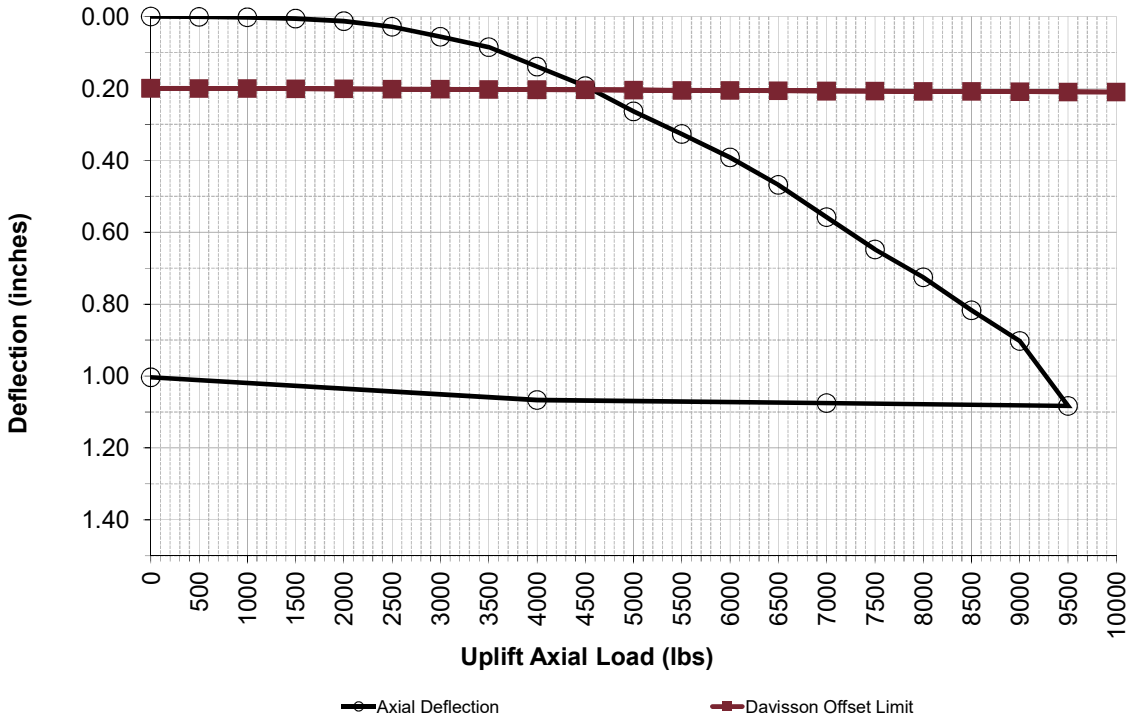
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/29/2021

Pile Information

Pile ID:	PLT-1A
Latitude:	43.14142
Longitude:	-76.65385
Pile Type:	W6x9
Pile Embedment Depth [in]:	84
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	207.4

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.001	0.001	0.200	
27%	1000	0.002	0.001	0.200	
40%	1500	0.006	0.002	0.201	
53%	2000	0.013	0.002	0.201	
67%	2500	0.028	0.003	0.202	
80%	3000	0.056	0.003	0.202	
93%	3500	0.085	0.004	0.203	
107%	4000	0.140	0.004	0.203	
120%	4500	0.193	0.005	0.204	
133%	5000	0.264	0.005	0.205	
147%	5500	0.327	0.006	0.205	
160%	6000	0.392	0.006	0.206	
173%	6500	0.468	0.007	0.206	
187%	7000	0.558	0.008	0.207	
200%	7500	0.648	0.008	0.207	
213%	8000	0.725	0.009	0.208	
227%	8500	0.817	0.009	0.208	
240%	9000	0.902	0.010	0.209	
253%	9500	1.083	0.010	0.209	
267%	10000		0.011	0.210	
187%	7000	1.075	0.008	0.207	
107%	4000	1.067	0.004	0.203	
0%	0	1.004	0.000	0.199	



Tension Load Test Result for PLT-1B

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

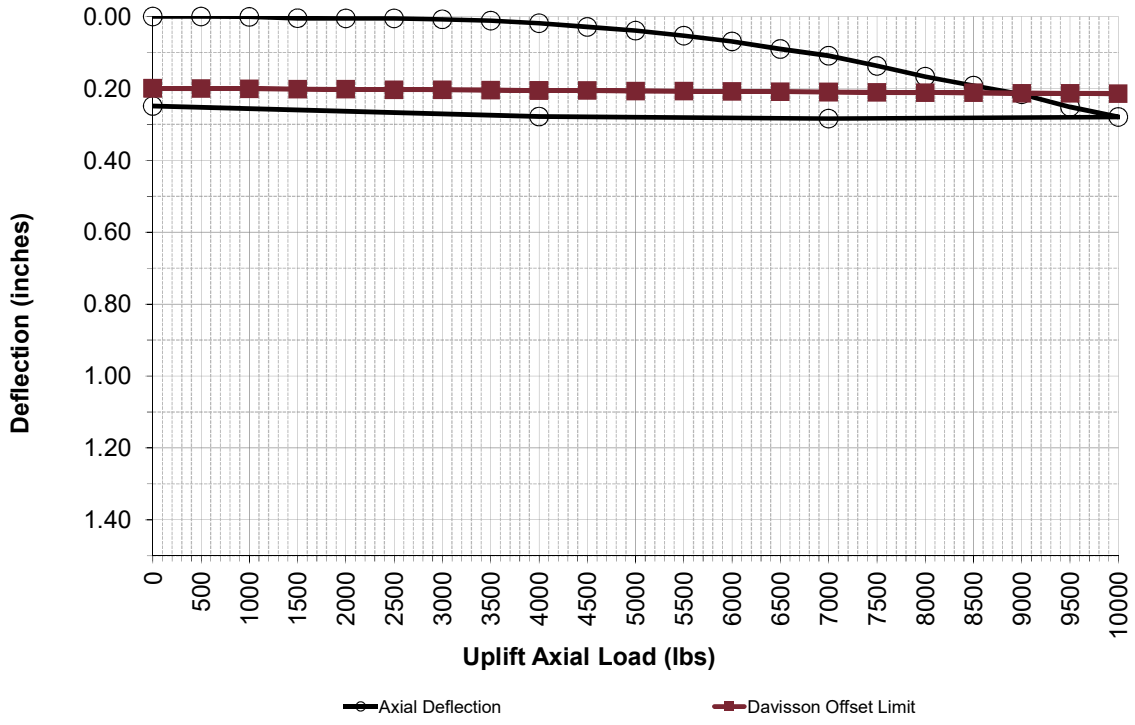
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/29/2021

Pile Information

Pile ID:	PLT-1B
Latitude:	43.14142
Longitude:	-76.65385
Pile Type:	W6x9
Pile Embedment Depth [in]:	120
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	421.6

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.000	0.001	0.200	
27%	1000	0.001	0.002	0.201	
40%	1500	0.005	0.002	0.201	
53%	2000	0.005	0.003	0.202	
67%	2500	0.005	0.004	0.203	
80%	3000	0.008	0.005	0.204	
93%	3500	0.011	0.005	0.205	
107%	4000	0.018	0.006	0.205	
120%	4500	0.029	0.007	0.206	
133%	5000	0.039	0.008	0.207	
147%	5500	0.053	0.008	0.208	
160%	6000	0.069	0.009	0.208	
173%	6500	0.090	0.010	0.209	
187%	7000	0.109	0.011	0.210	
200%	7500	0.137	0.012	0.211	
213%	8000	0.167	0.012	0.212	
227%	8500	0.192	0.013	0.212	
240%	9000	0.216	0.014	0.213	
253%	9500	0.251	0.015	0.214	
267%	10000	0.279	0.015	0.215	
187%	7000	0.284	0.011	0.210	
107%	4000	0.278	0.006	0.205	
0%	0	0.249	0.000	0.199	



Tension Load Test Result for PLT-2A

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

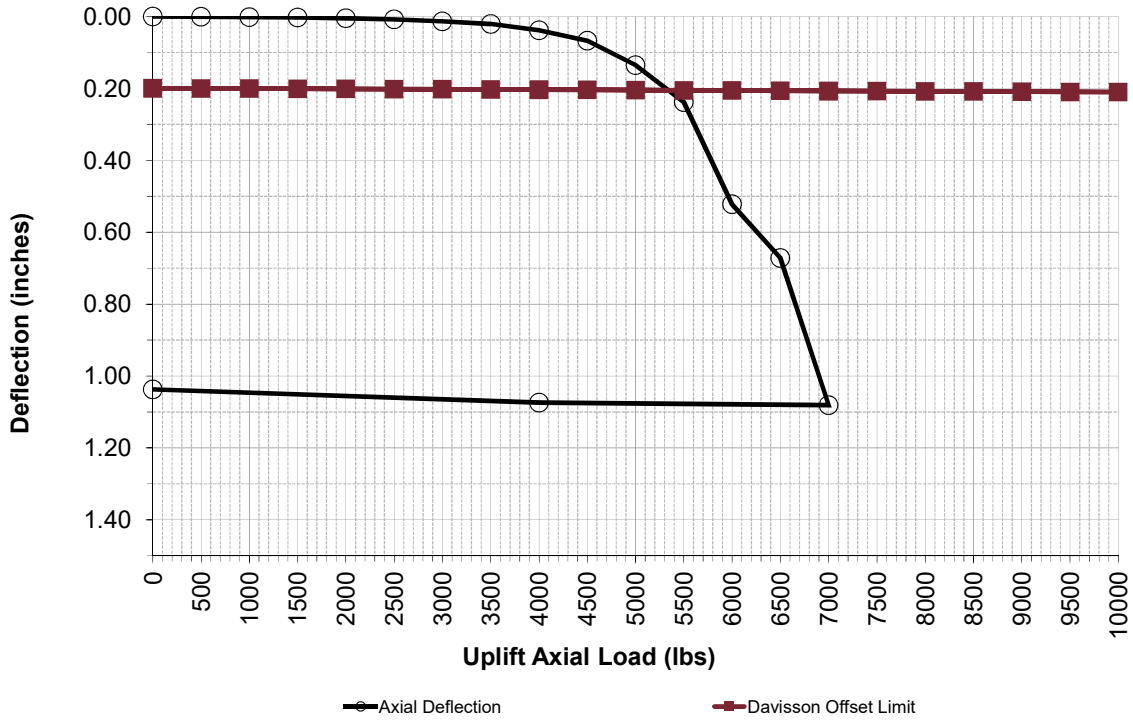
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/29/2021

Pile Information

Pile ID:	PLT-2A
Latitude:	43.13596
Longitude:	-76.65200
Pile Type:	W6x9
Pile Embedment Depth [in]:	84
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	187

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.000	0.001	0.200	
27%	1000	0.001	0.001	0.200	
40%	1500	0.003	0.002	0.201	
53%	2000	0.005	0.002	0.201	
67%	2500	0.008	0.003	0.202	
80%	3000	0.014	0.003	0.202	
93%	3500	0.021	0.004	0.203	
107%	4000	0.038	0.004	0.203	
120%	4500	0.067	0.005	0.204	
133%	5000	0.135	0.005	0.205	
147%	5500	0.238	0.006	0.205	
160%	6000	0.522	0.006	0.206	
173%	6500	0.672	0.007	0.206	
187%	7000	1.081	0.008	0.207	
200%	7500		0.008	0.207	
213%	8000		0.009	0.208	
227%	8500		0.009	0.208	
240%	9000		0.010	0.209	
253%	9500		0.010	0.209	
267%	10000		0.011	0.210	
187%	7000		0.008	0.207	
107%	4000	1.074	0.004	0.203	
0%	0	1.037	0.000	0.199	



Tension Load Test Result for PLT-2B

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

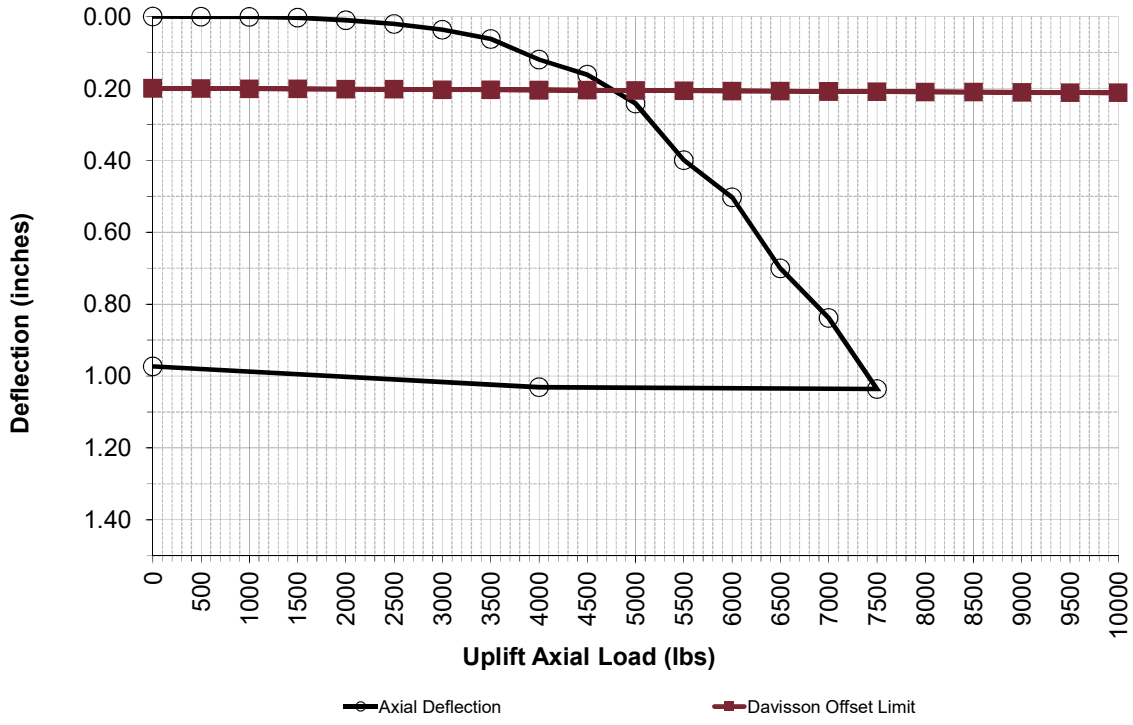
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/29/2021

Pile Information

Pile ID:	PLT-2B
Latitude:	43.13596
Longitude:	-76.65200
Pile Type:	W6x9
Pile Embedment Depth [in]:	100
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	240.1

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.001	0.001	0.200	
27%	1000	0.001	0.001	0.200	
40%	1500	0.003	0.002	0.201	
53%	2000	0.010	0.003	0.202	
67%	2500	0.020	0.003	0.202	
80%	3000	0.036	0.004	0.203	
93%	3500	0.063	0.005	0.204	
107%	4000	0.120	0.005	0.204	
120%	4500	0.162	0.006	0.205	
133%	5000	0.242	0.006	0.206	
147%	5500	0.400	0.007	0.206	
160%	6000	0.503	0.008	0.207	
173%	6500	0.701	0.008	0.208	
187%	7000	0.838	0.009	0.208	
200%	7500	1.036	0.010	0.209	
213%	8000		0.010	0.209	
227%	8500		0.011	0.210	
240%	9000		0.012	0.211	
253%	9500		0.012	0.211	
267%	10000		0.013	0.212	
187%	7000		0.009	0.208	
107%	4000	1.031	0.005	0.204	
0%	0	0.973	0.000	0.199	



Tension Load Test Result for PLT-4A

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

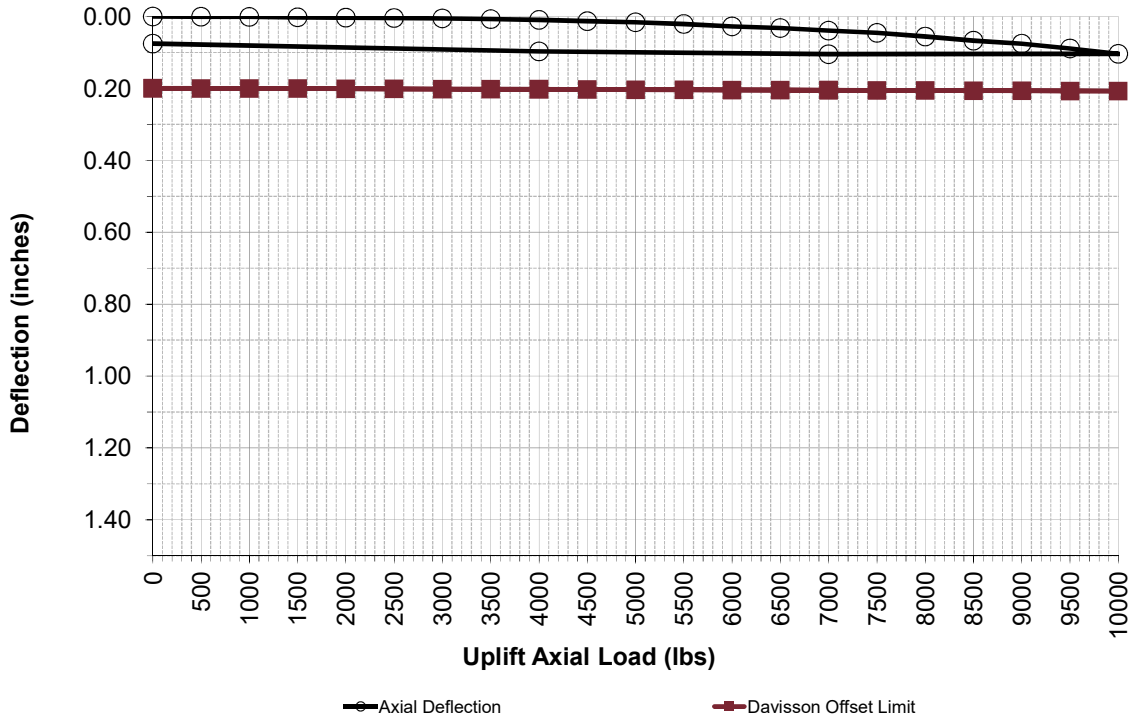
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/25/2021

Pile Information

Pile ID:	PLT-4A
Latitude:	43.13595
Longitude:	-76.64545
Pile Type:	W6x9
Pile Embedment Depth [in]:	64
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	240.1

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.001	0.000	0.200	
27%	1000	0.001	0.001	0.200	
40%	1500	0.002	0.001	0.200	
53%	2000	0.003	0.002	0.201	
67%	2500	0.004	0.002	0.201	
80%	3000	0.005	0.002	0.202	
93%	3500	0.007	0.003	0.202	
107%	4000	0.009	0.003	0.202	
120%	4500	0.013	0.004	0.203	
133%	5000	0.016	0.004	0.203	
147%	5500	0.020	0.005	0.204	
160%	6000	0.027	0.005	0.204	
173%	6500	0.032	0.005	0.205	
187%	7000	0.039	0.006	0.205	
200%	7500	0.045	0.006	0.205	
213%	8000	0.056	0.007	0.206	
227%	8500	0.067	0.007	0.206	
240%	9000	0.075	0.007	0.207	
253%	9500	0.089	0.008	0.207	
267%	10000	0.104	0.008	0.207	
187%	7000	0.105	0.006	0.205	
107%	4000	0.097	0.003	0.202	
0%	0	0.075	0.000	0.199	



Tension Load Test Result for PLT-4B

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

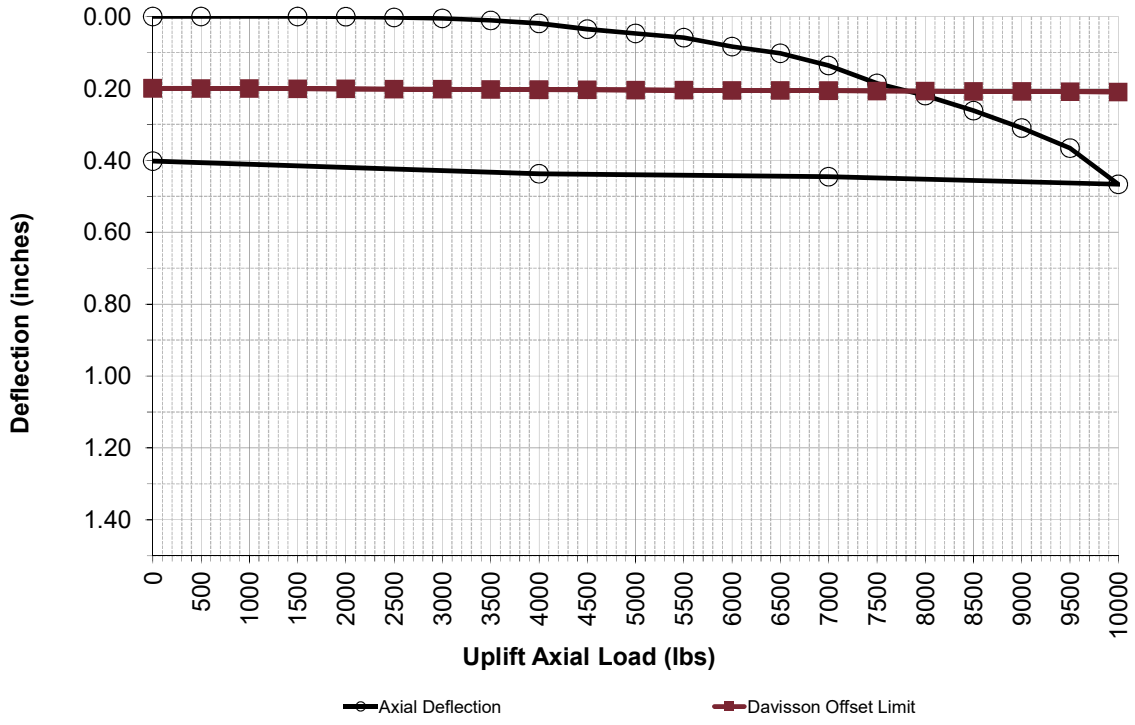
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/25/2021

Pile Information

Pile ID:	PLT-4B
Latitude:	43.13595
Longitude:	-76.64545
Pile Type:	W6x9
Pile Embedment Depth [in]:	80
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	240.2

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.000	0.001	0.200	
27%	1000	0.000	0.001	0.200	
40%	1500	0.000	0.002	0.201	
53%	2000	0.001	0.002	0.201	
67%	2500	0.002	0.003	0.202	
80%	3000	0.005	0.003	0.202	
93%	3500	0.011	0.004	0.203	
107%	4000	0.019	0.004	0.203	
120%	4500	0.035	0.005	0.204	
133%	5000	0.047	0.005	0.204	
147%	5500	0.059	0.006	0.205	
160%	6000	0.084	0.006	0.205	
173%	6500	0.102	0.007	0.206	
187%	7000	0.136	0.007	0.206	
200%	7500	0.186	0.008	0.207	
213%	8000	0.220	0.008	0.207	
227%	8500	0.262	0.009	0.208	
240%	9000	0.310	0.009	0.208	
253%	9500	0.366	0.010	0.209	
267%	10000	0.467	0.010	0.209	
187%	7000	0.446	0.007	0.206	
107%	4000	0.437	0.004	0.203	
0%	0	0.402	0.000	0.199	



Tension Load Test Result for PLT-6A

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

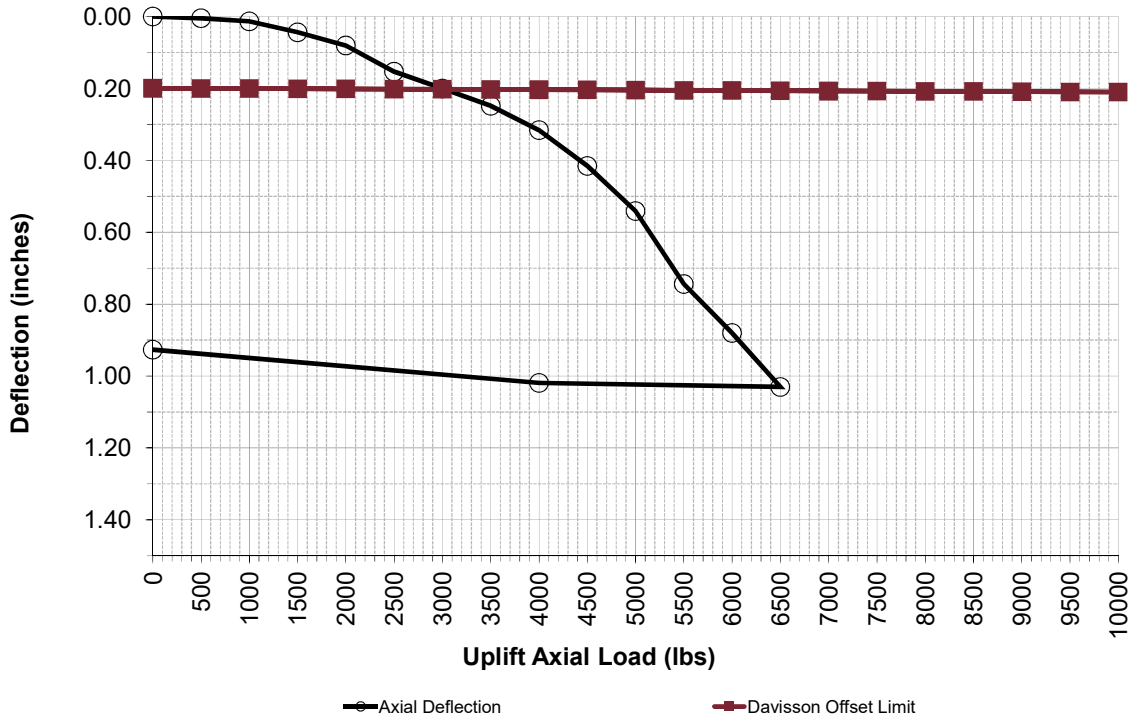
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/30/2021

Pile Information

Pile ID:	PLT-6A
Latitude:	43.12978
Longitude:	-76.64469
Pile Type:	W6x9
Pile Embedment Depth [in]:	84
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	262.9

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.004	0.001	0.200	
27%	1000	0.014	0.001	0.200	
40%	1500	0.044	0.002	0.201	
53%	2000	0.080	0.002	0.201	
67%	2500	0.153	0.003	0.202	
80%	3000	0.200	0.003	0.202	
93%	3500	0.248	0.004	0.203	
107%	4000	0.316	0.004	0.203	
120%	4500	0.415	0.005	0.204	
133%	5000	0.541	0.005	0.205	
147%	5500	0.744	0.006	0.205	
160%	6000	0.880	0.006	0.206	
173%	6500	1.030	0.007	0.206	
187%	7000		0.008	0.207	
200%	7500		0.008	0.207	
213%	8000		0.009	0.208	
227%	8500		0.009	0.208	
240%	9000		0.010	0.209	
253%	9500		0.010	0.209	
267%	10000		0.011	0.210	
187%	7000		0.008	0.207	
107%	4000	1.019	0.004	0.203	
0%	0	0.927	0.000	0.199	



Tension Load Test Result for PLT-6B

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

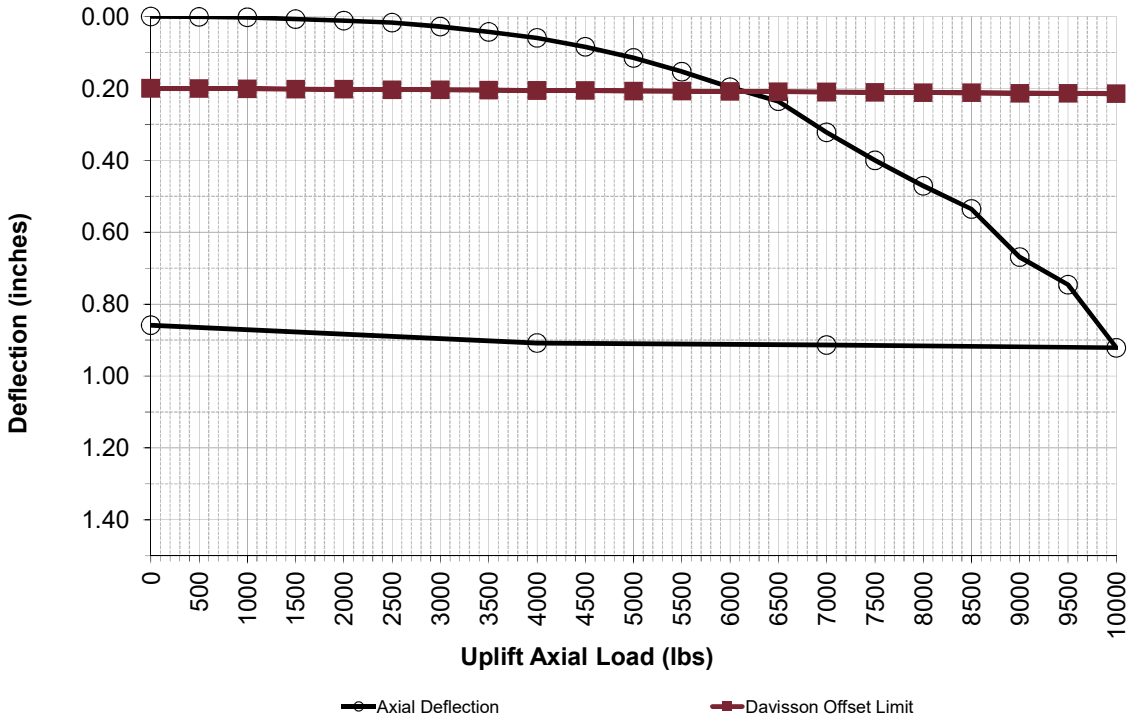
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/30/2021

Pile Information

Pile ID:	PLT-6B
Latitude:	43.12978
Longitude:	-76.64469
Pile Type:	W6x9
Pile Embedment Depth [in]:	120
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	314.3

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.001	0.001	0.200	
27%	1000	0.002	0.002	0.201	
40%	1500	0.007	0.002	0.201	
53%	2000	0.011	0.003	0.202	
67%	2500	0.017	0.004	0.203	
80%	3000	0.028	0.005	0.204	
93%	3500	0.043	0.005	0.205	
107%	4000	0.059	0.006	0.205	
120%	4500	0.084	0.007	0.206	
133%	5000	0.115	0.008	0.207	
147%	5500	0.153	0.008	0.208	
160%	6000	0.197	0.009	0.208	
173%	6500	0.236	0.010	0.209	
187%	7000	0.322	0.011	0.210	
200%	7500	0.400	0.012	0.211	
213%	8000	0.471	0.012	0.212	
227%	8500	0.535	0.013	0.212	
240%	9000	0.669	0.014	0.213	
253%	9500	0.746	0.015	0.214	
267%	10000	0.921	0.015	0.215	
187%	7000	0.914	0.011	0.210	
107%	4000	0.908	0.006	0.205	
0%	0	0.859	0.000	0.199	



Tension Load Test Result for PLT-9A

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

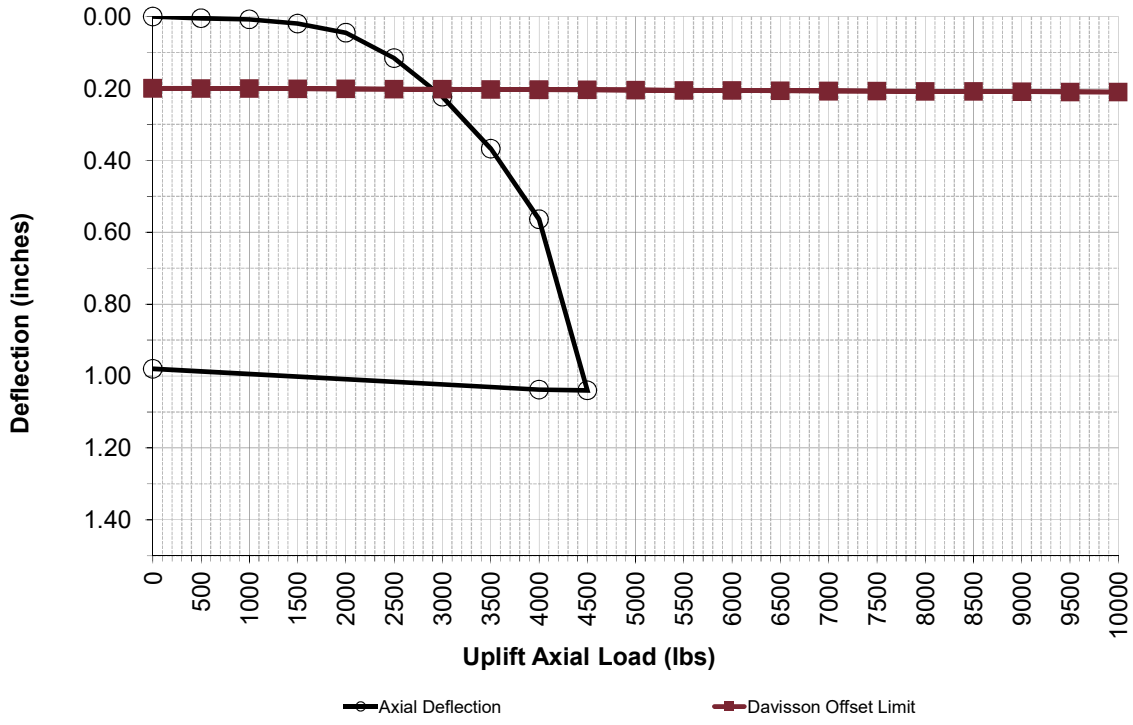
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/25/2021

Pile Information

Pile ID:	PLT-9A
Latitude:	43.14029
Longitude:	-76.63541
Pile Type:	W6x9
Pile Embedment Depth [in]:	84
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	110.9

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.005	0.001	0.200	
27%	1000	0.008	0.001	0.200	
40%	1500	0.019	0.002	0.201	
53%	2000	0.045	0.002	0.201	
67%	2500	0.116	0.003	0.202	
80%	3000	0.223	0.003	0.202	
93%	3500	0.368	0.004	0.203	
107%	4000	0.564	0.004	0.203	
120%	4500	1.040	0.005	0.204	
133%	5000		0.005	0.205	
147%	5500		0.006	0.205	
160%	6000		0.006	0.206	
173%	6500		0.007	0.206	
187%	7000		0.008	0.207	
200%	7500		0.008	0.207	
213%	8000		0.009	0.208	
227%	8500		0.009	0.208	
240%	9000		0.010	0.209	
253%	9500		0.010	0.209	
267%	10000		0.011	0.210	
187%	7000		0.008	0.207	
107%	4000	1.038	0.004	0.203	
0%	0	0.980	0.000	0.199	



Tension Load Test Result for PLT-9B

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

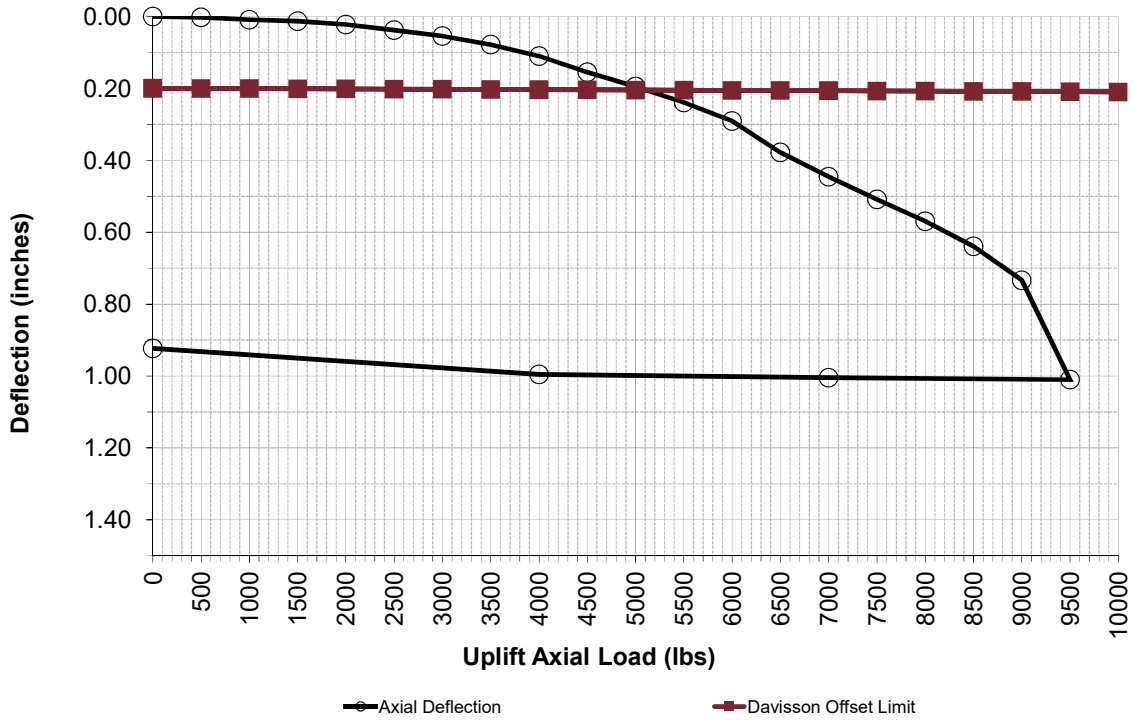
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/25/2021

Pile Information

Pile ID:	PLT-9B
Latitude:	43.14029
Longitude:	-76.63541
Pile Type:	W6x9
Pile Embedment Depth [in]:	79
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	193.3

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.002	0.001	0.200	
27%	1000	0.009	0.001	0.200	
40%	1500	0.013	0.002	0.201	
53%	2000	0.022	0.002	0.201	
67%	2500	0.038	0.003	0.202	
80%	3000	0.054	0.003	0.202	
93%	3500	0.078	0.004	0.203	
107%	4000	0.110	0.004	0.203	
120%	4500	0.155	0.005	0.204	
133%	5000	0.194	0.005	0.204	
147%	5500	0.239	0.006	0.205	
160%	6000	0.291	0.006	0.205	
173%	6500	0.378	0.007	0.206	
187%	7000	0.445	0.007	0.206	
200%	7500	0.508	0.008	0.207	
213%	8000	0.569	0.008	0.207	
227%	8500	0.639	0.009	0.208	
240%	9000	0.734	0.009	0.208	
253%	9500	1.010	0.010	0.209	
267%	10000		0.010	0.209	
187%	7000	1.005	0.007	0.206	
107%	4000	0.995	0.004	0.203	
0%	0	0.923	0.000	0.199	



Tension Load Test Result for PLT-10A

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

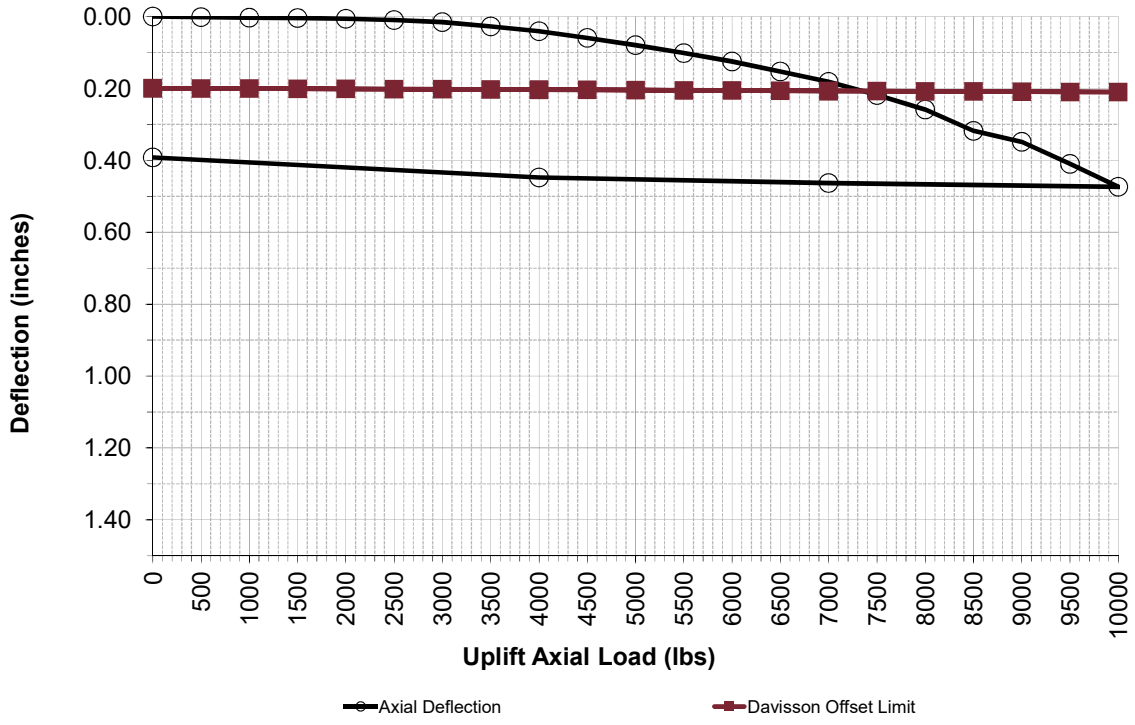
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/25/2021

Pile Information

Pile ID:	PLT-10A
Latitude:	43.14671
Longitude:	-76.63127
Pile Type:	W6x9
Pile Embedment Depth [in]:	84
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	195.5

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.002	0.001	0.200	
27%	1000	0.003	0.001	0.200	
40%	1500	0.004	0.002	0.201	
53%	2000	0.006	0.002	0.201	
67%	2500	0.010	0.003	0.202	
80%	3000	0.015	0.003	0.202	
93%	3500	0.027	0.004	0.203	
107%	4000	0.041	0.004	0.203	
120%	4500	0.059	0.005	0.204	
133%	5000	0.079	0.005	0.205	
147%	5500	0.102	0.006	0.205	
160%	6000	0.125	0.006	0.206	
173%	6500	0.153	0.007	0.206	
187%	7000	0.182	0.008	0.207	
200%	7500	0.218	0.008	0.207	
213%	8000	0.259	0.009	0.208	
227%	8500	0.318	0.009	0.208	
240%	9000	0.349	0.010	0.209	
253%	9500	0.410	0.010	0.209	
267%	10000	0.474	0.011	0.210	
187%	7000	0.463	0.008	0.207	
107%	4000	0.448	0.004	0.203	
0%	0	0.392	0.000	0.199	



Tension Load Test Result for PLT-10B

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

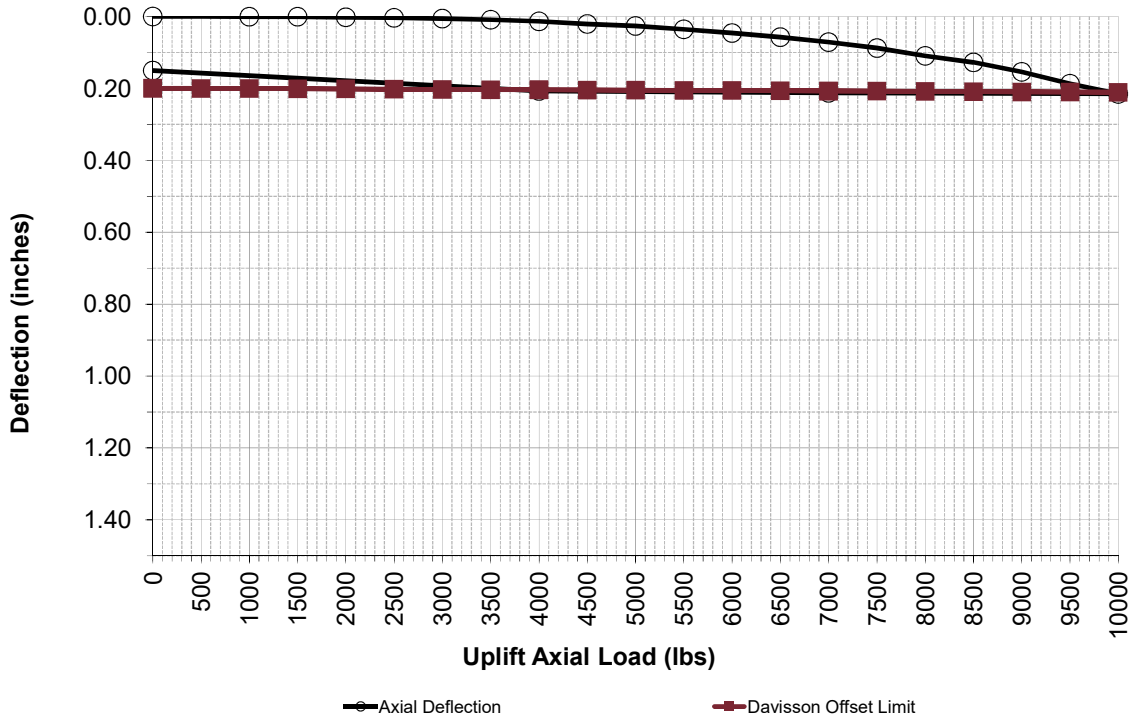
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/25/2021

Pile Information

Pile ID:	PLT-10B
Latitude:	43.14671
Longitude:	-76.63127
Pile Type:	W6x9
Pile Embedment Depth [in]:	88
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	240.1

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.000	0.001	0.200	
27%	1000	0.000	0.001	0.200	
40%	1500	0.001	0.002	0.201	
53%	2000	0.002	0.002	0.201	
67%	2500	0.003	0.003	0.202	
80%	3000	0.006	0.003	0.203	
93%	3500	0.009	0.004	0.203	
107%	4000	0.014	0.005	0.204	
120%	4500	0.021	0.005	0.204	
133%	5000	0.026	0.006	0.205	
147%	5500	0.035	0.006	0.205	
160%	6000	0.046	0.007	0.206	
173%	6500	0.057	0.007	0.207	
187%	7000	0.071	0.008	0.207	
200%	7500	0.088	0.008	0.208	
213%	8000	0.110	0.009	0.208	
227%	8500	0.128	0.010	0.209	
240%	9000	0.154	0.010	0.209	
253%	9500	0.187	0.011	0.210	
267%	10000	0.215	0.011	0.210	
187%	7000	0.212	0.008	0.207	
107%	4000	0.207	0.005	0.204	
0%	0	0.150	0.000	0.199	



Tension Load Test Result for PLT-12A

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

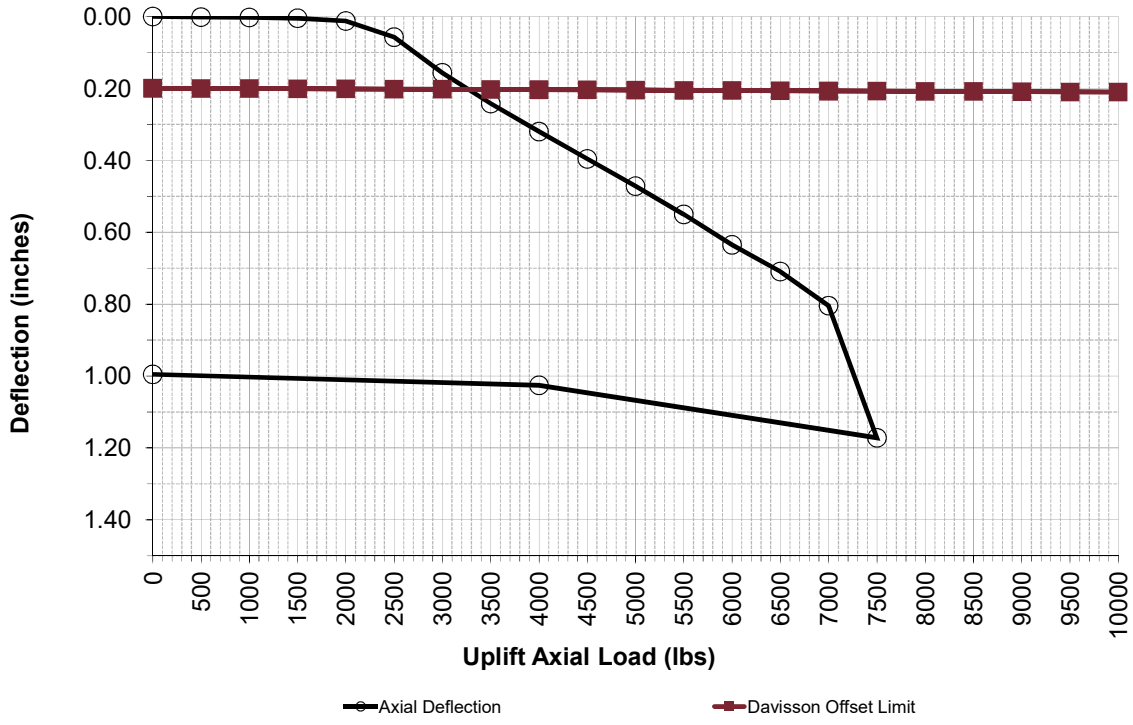
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/25/2021

Pile Information

Pile ID:	PLT-12A
Latitude:	43.15075
Longitude:	-76.62248
Pile Type:	W6x9
Pile Embedment Depth [in]:	84
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	104.9

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.002	0.001	0.200	
27%	1000	0.003	0.001	0.200	
40%	1500	0.005	0.002	0.201	
53%	2000	0.012	0.002	0.201	
67%	2500	0.057	0.003	0.202	
80%	3000	0.157	0.003	0.202	
93%	3500	0.242	0.004	0.203	
107%	4000	0.320	0.004	0.203	
120%	4500	0.396	0.005	0.204	
133%	5000	0.472	0.005	0.205	
147%	5500	0.550	0.006	0.205	
160%	6000	0.635	0.006	0.206	
173%	6500	0.710	0.007	0.206	
187%	7000	0.805	0.008	0.207	
200%	7500	1.172	0.008	0.207	
213%	8000		0.009	0.208	
227%	8500		0.009	0.208	
240%	9000		0.010	0.209	
253%	9500		0.010	0.209	
267%	10000		0.011	0.210	
187%	7000		0.008	0.207	
107%	4000	1.026	0.004	0.203	
0%	0	0.996	0.000	0.199	



Tension Load Test Result for PLT-12B

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

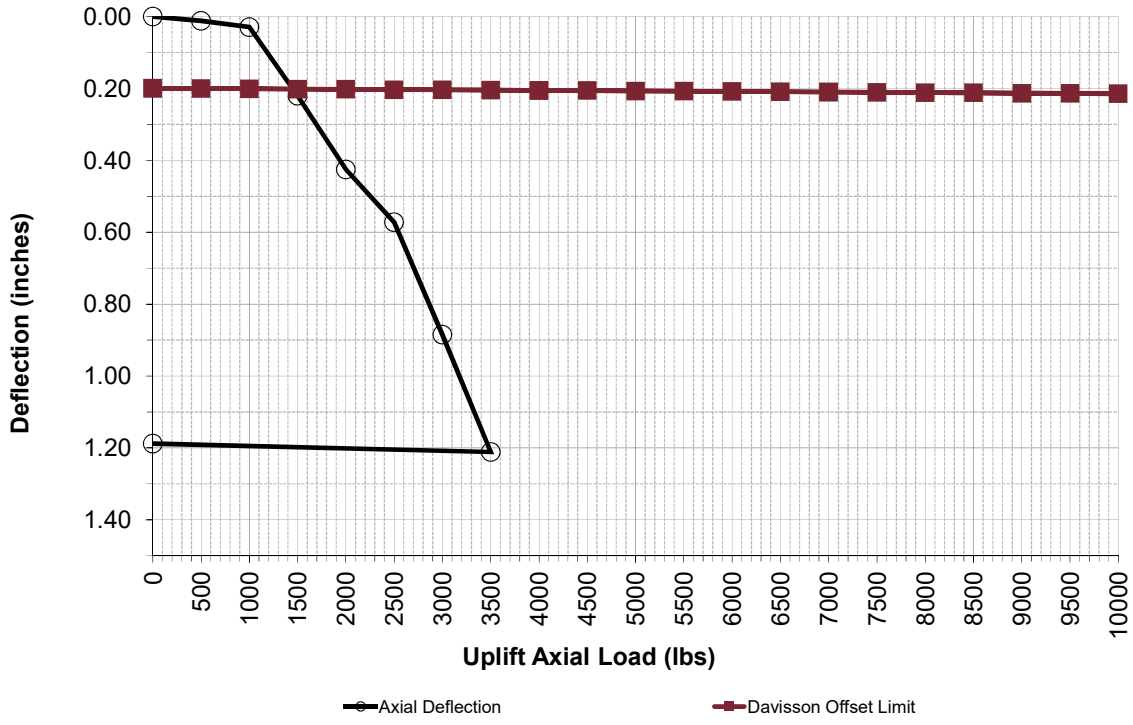
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/25/2021

Pile Information

Pile ID:	PLT-12B
Latitude:	43.15075
Longitude:	-76.62248
Pile Type:	W6x9
Pile Embedment Depth [in]:	120
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	148.5

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.012	0.001	0.200	
27%	1000	0.030	0.002	0.201	
40%	1500	0.221	0.002	0.201	
53%	2000	0.425	0.003	0.202	
67%	2500	0.572	0.004	0.203	
80%	3000	0.885	0.005	0.204	
93%	3500	1.211	0.005	0.205	
107%	4000		0.006	0.205	
120%	4500		0.007	0.206	
133%	5000		0.008	0.207	
147%	5500		0.008	0.208	
160%	6000		0.009	0.208	
173%	6500		0.010	0.209	
187%	7000		0.011	0.210	
200%	7500		0.012	0.211	
213%	8000		0.012	0.212	
227%	8500		0.013	0.212	
240%	9000		0.014	0.213	
253%	9500		0.015	0.214	
267%	10000		0.015	0.215	
187%	7000		0.011	0.210	
107%	4000		0.006	0.205	
0%	0	1.188	0.000	0.199	



Tension Load Test Result for PLT-16A

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

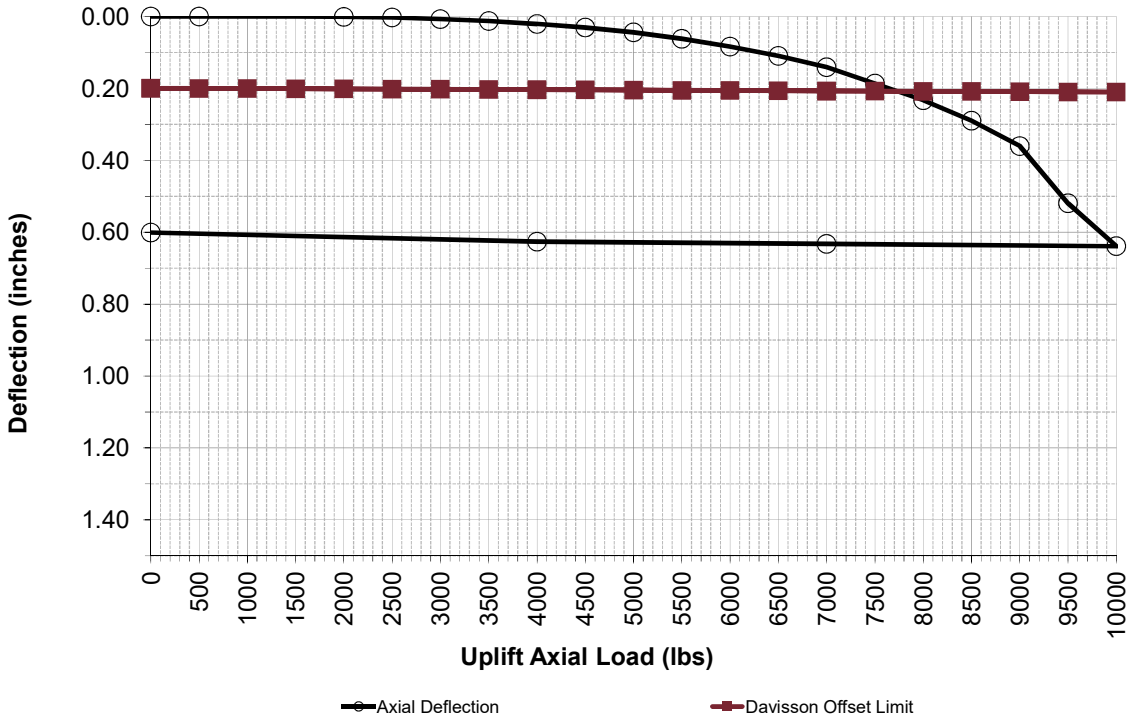
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/25/2021

Pile Information

Pile ID:	PLT-16A
Latitude:	43.13347
Longitude:	-76.62828
Pile Type:	W6x9
Pile Embedment Depth [in]:	84
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	211.4

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.000	0.001	0.200	
27%	1000	0.000	0.001	0.200	
40%	1500	0.000	0.002	0.201	
53%	2000	0.001	0.002	0.201	
67%	2500	0.002	0.003	0.202	
80%	3000	0.007	0.003	0.202	
93%	3500	0.012	0.004	0.203	
107%	4000	0.021	0.004	0.203	
120%	4500	0.030	0.005	0.204	
133%	5000	0.044	0.005	0.205	
147%	5500	0.062	0.006	0.205	
160%	6000	0.084	0.006	0.206	
173%	6500	0.110	0.007	0.206	
187%	7000	0.141	0.008	0.207	
200%	7500	0.187	0.008	0.207	
213%	8000	0.233	0.009	0.208	
227%	8500	0.290	0.009	0.208	
240%	9000	0.361	0.010	0.209	
253%	9500	0.519	0.010	0.209	
267%	10000	0.639	0.011	0.210	
187%	7000	0.632	0.008	0.207	
107%	4000	0.626	0.004	0.203	
0%	0	0.601	0.000	0.199	



Tension Load Test Result for PLT-16B

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

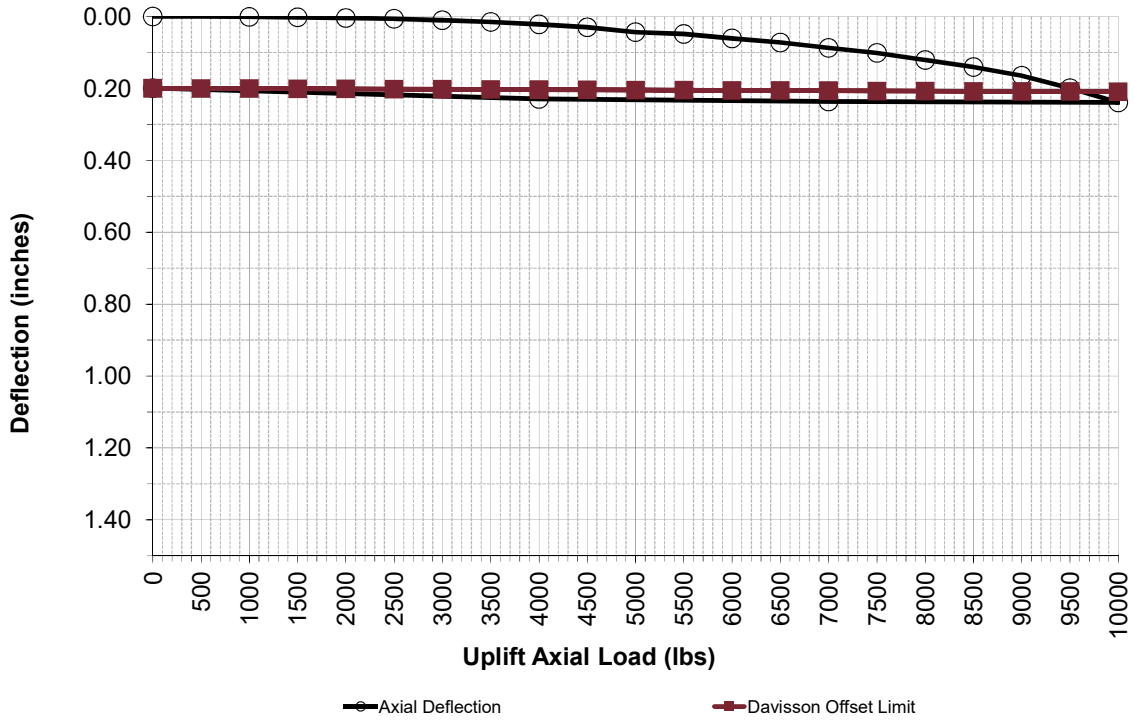
Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/25/2021

Pile Information

Pile ID:	PLT-16B
Latitude:	43.13347
Longitude:	-76.62828
Pile Type:	W6x9
Pile Embedment Depth [in]:	78
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	240.1

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.000	0.001	0.200	
27%	1000	0.001	0.001	0.200	
40%	1500	0.002	0.002	0.201	
53%	2000	0.004	0.002	0.201	
67%	2500	0.006	0.003	0.202	
80%	3000	0.010	0.003	0.202	
93%	3500	0.015	0.004	0.203	
107%	4000	0.022	0.004	0.203	
120%	4500	0.030	0.005	0.204	
133%	5000	0.043	0.005	0.204	
147%	5500	0.048	0.006	0.205	
160%	6000	0.061	0.006	0.205	
173%	6500	0.072	0.007	0.206	
187%	7000	0.087	0.007	0.206	
200%	7500	0.101	0.008	0.207	
213%	8000	0.121	0.008	0.207	
227%	8500	0.141	0.009	0.208	
240%	9000	0.165	0.009	0.208	
253%	9500	0.199	0.010	0.209	
267%	10000	0.239	0.010	0.209	
187%	7000	0.236	0.007	0.206	
107%	4000	0.229	0.004	0.203	
0%	0	0.199	0.000	0.199	



Tension Load Test Result for PLT-17A

Project Information

Project Name:	Garnet Solar
Project Location:	Conquest, NY
Project Number:	J5205196

Axial Load Test Set Up

Number of Gauges:	2
Height of Gauges [in]:	6
Load Cell:	Dillon ED Junior

Test Date and Representative

Tested By Terracon Rep:	T. Wooden
Date Tested:	3/24/2021

Pile Information

Pile ID:	PLT-17A
Latitude:	43.13577
Longitude:	-76.62598
Pile Type:	W6x9
Pile Embedment Depth [in]:	70
Pile Diameter [in]:	5.9
Pile Stick-Up [in]:	60
Axial Design Load [lbs]:	3750
Pile Area [sq. in]:	2.68
Elastic Modulus [ksi]:	29,000
Drive Time [sec]:	240.1

Tension Test Results			Davisson Offset Limit Lines		
% of Design Load	Axial Load [lbs]	Deflection Δ (in.) Gauges #1 & #2	Elastic Data (in) (PL/AE)	Davisson Offest Limit (in) (0.15+D/120+(PL/AE))	Comments
0%	0	0.000	0.000	0.199	
13%	500	0.000	0.000	0.200	
27%	1000	0.000	0.001	0.200	
40%	1500	0.001	0.001	0.201	
53%	2000	0.002	0.002	0.201	
67%	2500	0.002	0.002	0.201	
80%	3000	0.003	0.003	0.202	
93%	3500	0.005	0.003	0.202	
107%	4000	0.007	0.004	0.203	
120%	4500	0.011	0.004	0.203	
133%	5000	0.016	0.005	0.204	
147%	5500	0.021	0.005	0.204	
160%	6000	0.022	0.005	0.205	
173%	6500	0.035	0.006	0.205	
187%	7000	0.042	0.006	0.205	
200%	7500	0.052	0.007	0.206	
213%	8000	0.066	0.007	0.206	
227%	8500	0.078	0.008	0.207	
240%	9000	0.092	0.008	0.207	
253%	9500	0.105	0.009	0.208	
267%	10000	0.115	0.009	0.208	
187%	7000	0.053	0.006	0.205	
107%	4000	0.050	0.004	0.203	
0%	0	0.048	0.000	0.199