GEOLOGICAL FAULT STUDY

AND GEOTECHNICAL INVESTIGATION REPORT

PROPOSED MULTI-RESIDENTIAL BUILDING PROJECT

LOTS 11, 19 AND 20, BLOCK 15 OF TRACT 7803

1749 AND 1751 MALCOLM AVENUE AND 1772 GLENDON AVENUE

LOS ANGELES, CA 90024

FOR.

SINANIAN DEVELOPMENT, INC.

PROJECT NO. 15-363-26

JULY 21, 2015

July 21, 2015 Project No. 15-363-26

Sinanian Development, Inc.
18980 Ventura Blvd. Suite 200
Tarzana, CA 91356

Attention: Mr. Sinan Sinanian

Subject: Report of Geologic Fault Study
And Geotechnical Investigation
Proposed Multifamily Residential Building Project
1749-51 Malcolm Avenue and 1772 Glendon Avenue
Los Angeles, CA 90024

Gentlemen:

We are pleased to submit our combined fault investigation and geotechnical investigation report for the proposed residential development project to be located at 1749-51 Malcolm Avenue and 1772 Glendon Avenue, in the Westwood neighborhood of Los Angeles, California.

The scope of this investigation was based in part on our workplan as delineated in our Scope of Work as delineated in our Geologic and Geotechnical Scope of Work Proposals dated March 28 and.June 10, 2015, respectively, as well as preliminary discussions with city grading staff. Summaries of data gathered during our investigation, our analysis of this data, and our conclusions and recommendations are presented in this attached report. The first portion of the report discusses the geologic fault study, and the second portion presents the results of our geotechnical investigation.

Thank you for the opportunity to be of continued service on this project. Please call the undersigned if you have any questions regarding this report.

Respectfully Submitted,

APPLIED EARTH SCIENCES

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PART I. GEOLOGIC FAULT STUDY REPORT

Proposed Multi-Residential Building Project

1749-51 Malcolm Avenue and 1772 Glendon Avenue

Los Angeles, California

INTRODUCTION

We are pleased to present this report of geologic fault study for the subject project.

The scope of work performed and reported herein was based on our proposal agreement dated March 28, 2015, which in turn was based on the City of Los Angeles Grading Department's recent requirement for fault studies in this area of Century City and Westwood, in light of the recent zoning of the subject property as being within a Fault Rupture Hazard Study Area.

PRIOR REPORTS AND BACKGROUND

Although a thorough description of the Santa Monica fault zone is beyond this scope of work, a brief description of the fault follows. The so-called Santa Monica fault zone roughly extends from the West Beverly Hills Lineament approximately two miles to the east, near the Los Angeles/Beverly Hills corporate boundary; to the multiple sub-parallel strands of the Malibu fault approximately 10 miles to the west. The Malibu fault, however, is broadly considered the western extension of the Santa Monica fault zone. The Santa Monica fault itself is thought to be the continuation of the Hollywood fault zone to the east, which in turn is considered the western extension of the Raymond fault zone northeast of downtown Los Angeles. As such, although the name of the fault zone changes based on the locality, it is widely considered to be one prominent fault zone extending from the southern foothills of the western Santa Monica Mountains along Pacific Coast Highway, to the Monrovia area in the San Gabriel valley, where it crosses or connects to the Sierra Madre fault zone at the southern foothills of the San Gabriel

Mountains. As such, the total length of this fault zone ranges from 60 to 100 miles long, depending on which faults are included in the broadly defined zone. The fault exhibits both left-lateral strike slip as well as reverse thrusting features along its alignment (Parsons, 2011; Dolan, 2000). Recent research by Kenney (2012-14) indicates that the fault has a significant left-lateral strike-slip component and may also exhibit normal faulting over portions of the zone.

According to studies performed by Dolan et al starting in 1998, as well as several other workers, segments of the Santa Monica fault zone are thought to have ruptured in middle Holocene time, and as such the fault is considered active by the state of California as well as the city of Los Angeles and other governmental agencies (Cities of West Hollywood and Santa Monica). Although the Santa Monica fault has not yet been included as an Alquist-Priolo Earthquake Fault zone by the state, based on our correspondence with CGS officials, it is our understanding that the zoning of this fault is currently under way at the state level by the California Geological Survey. The city of Los Angeles, however, has, as of late 2013, already begun requiring fault studies for properties located within the proposed “Fault Rupture Study Area”. A map of this study area for west Los Angeles has yet to be released to the public by the city of Los Angeles or by the state of California, but personal conversations with City grading staff, review of city Navigate LA maps online, as well as review of available maps and literature regarding the Santa Monica fault, confirm that the subject property is close to or within the widely defined fault zone.

PROJECT CONSIDERATIONS

The proposed new building onsite will consist of two separate garden-style multifamily residential buildings, both with two of living space atop one level of semi-subterranean to full subterranean parking garage. The lowest garage level will range from five to ten feet below grade throughout different portions of the proposed new buildings. Please see Drawings 2 through 4 for a graphical depiction of the proposed new building with respect to the existing ground surface elevations.

There are existing on-grade apartment buildings onsite, constructed from 1938 through 1944, which will eventually be removed as part of the current project. The project area consists of three adjacent and contiguous lots with a total of 24,560 square feet.

Because of the existing apartment buildings on-site with onsite tenants, trenching was considered not to be a suitable option for field exploration for this fault study. Prior to organizing field exploration efforts, we have corresponded with Messrs. Wilson and Schneidereit of the city Grading Division regarding a suitable approach for a fault study of the site, which included a combination of Cone Penetrometer soundings and continuous core borings to a maximum depth of 80 feet depth. To this end, and at your request, we performed a fault study of the site in accordance with City of LA standards and correspondence with city officials, CGS Standards, and based on our professional geologic and engineering judgment and expertise.

FIELD EXPLORATION

To determine whether or not a fault exists on, or adjacent to, the subject lots, a total of sixteen (16) holes were advanced, as discussed above. All holes (borings as well as soundings) were drilled in a northwest-southeast alignment, nearly perpendicular to the suspected west/southwest-east/northeast trend of the fault. Prior to advancing the soundings and borings, necessary encroachment and excavation permits were obtained from the city of Los Angeles Public Works Engineering by the owner's representatives (see attachments).

Test hole spacing ranged from 5 feet (typically between closely spaced CPTs and Borings) to over 25 feet between successive CPTs in the public right of way, due to presence of multiple subsurface utilities, compromised drilling maneuverability, and site access restrictions. This is discussed in the section below in further detail.

CPT soundings were advanced over the course of two workdays, April 21, 2015 (on private property) and May 12, 2015 (on public right of way), by Kehoe Engineering and Testing of Huntington Beach. Of the thirteen CPT soundings, seven were advanced on the subject property (CPT-1 through CPT-7), and six were advanced beyond the northern and southern property boundaries (CPT-8 through CPT-13). The CPT soundings were advanced to depths ranging from 70 to 80 feet, depending on depth to refusal.

A total of three continuous core Borings 1, 2, and 3 were advanced on the subject property to depths of 80 feet each, by Martini Drilling of Huntington Beach. Drilling was conducted on April 23 and April 24, 2015. The continuous core borings were advanced using a hollow-stem auger specially fitted to collect continuous core samples in five-foot intervals. All three Borings were advanced within the confines of the private subject property; see Drawing No. 2 for locations of all test holes advanced onsite.

Continuous sampling resulted in relatively good recovery (average recovery was 88 percent). All samples were photographed with digital color film and the samples were placed in core boxes stored onsite at our facility in Glendale for later study and for review by others if necessary. These samples will be kept until such time that approval for development of the subject lots is attained. Selected pictures taken during field exploration and later detailed logging at our office have been attached in the Appendix.

The samples were preliminarily logged during drilling by the project engineering geologist Shant Minas as well as senior engineering geologist Steve Miller in the field. Completed logs were then prepared after further detailed study and comparison of all of the samples.

See Drawing No. 2 – Geologic Map and Fault Study Plan for the locations of the borings and CPT soundings discussed above, as well as advanced geotechnical borings by AES.

FIELD EXPLORATION LOGISTICAL CHALLENGES

Any part of a fault study report that covers a wide area should also discuss the myriad complexities, challenges, and risks associated with advancing several test holes in densely populated urban areas. Along Malcolm Avenue where our study took place, there were multiple challenges due to the presence of several underground buried utilities, driveway access to nearby buildings, overhead clearance from power lines and trees, and localized topographic humps from landscaping. Use of DIG Alert resulted in only a partial marking of underground utilities; the project also necessitated the use of private ground penetrating radar service to mark those utilities which were not properly marked on the street. Overall, our field exploration work had to contend with the presence of water, gas, electric, street lights, storm drain, sewer, and cable fiberoptic which posed considerable challenges and risks with respect to drilling. The reader of this report may wonder why certain test holes are spaced closer apart than others, for example between CPT-7 and CPT-10. There were multiple challenges due to the presence of several underground buried utilities. Use of DIG Alert resulted in only a partial marking of underground utilities; the project also necessitated the use of private ground penetrating radar service to mark those utilities which were not properly marked on the street, such as water.

In the northeast corner of the subject property, we were limited due to presence of a large tree and surrounding topographic high mound; see Photo 2 attached.

Overall, our field exploration work had to contend with the presence of water, gas, electric, street lights, storm drain, sewer, and fiberoptic cable, all of which together posed considerable challenges and risks with respect to drilling. In our estimation, we have performed a sufficiently detailed site-specific study given the logistical constraints and challenges of drilling in a densely populated urban area such as the subject site.

SITE SURFACE CONDITIONS

The subject site lies on an alluvial fan surface that is part of a larger series of coalesced alluvial fans emanating from the several small drainages at the south edge of the Santa Monica Mountains. The site has an irregular shape, has a surface area of 24,560 square feet. From the north to south property boundary, there is very little elevation difference from north to south property corners. Based on a 2013 topographic survey by J & B Surveyors that we utilized as our site-specific base map, the spot MSE elevation near the northern property boundary is around 225’, while the spot MSE elevation at the corresponding southern property boundary is nearly 227.00’. Incidentally, there is a negligible descending slope from south to north, instead of north to south, as is more typically the case across various portions of the wider Hollywood-Santa Monica fault zone. This will be discussed in further detail in later sections.

There is a condominium building (constructed in 1992) to the north along Malcolm Avenue, and another condominium building to the northwest along Glendon Avenue. The property is surrounded on the east, west and south by public rights-of-way Malcolm Avenue, Glendon Avenue, and an adjoining public alley, respectively.

SANTA MONICA FAULT LOCATION

It is now well known in the earth sciences community that starting from Century City through the Veteran's Administration grounds just west of Interstate 405, the Santa Monica fault extends roughly along the alignment of Santa Monica Boulevard (Dolan et al, 1998-2000; AMEC 2011; Parsons 2011-12). The original Pacific-Electric Red Car Line was established over one hundred years ago along what is now Santa Monica Boulevard, using natural breaks and depressions in the ground surface that are now known to be related to the presence of the Santa Monica fault zone underlying the Boulevard of the same name in this location. The large grass lawn in the front yard of the LDS Church at 10777 Santa Monica Boulevard, incidentally just one block (~400 feet) east of the subject site, is known by geologic workers (most recently Dolan et al., 1998, 2000) to be the location of the most prominent and visible fault scarp of the Santa Monica fault zone in this area.

In the vicinity of the subject lot in the Westwood area, the fault is thought to make a westward bend near the southwest corner of the LDS Church property, roughly parallel with the westward bend in Santa Monica Boulevard at nearly the same location. These bends have been interpreted by other geologic workers, based on their field findings and review of historic aerial photography, as representing the main "pre-urbanization, en-echelon series of escarpments" of the Santa Monica fault zone in this location (Dolan, 2000; AMEC and Parsons-Brinkerhoff, 2011-12; Shannon Wilson 2012).

In 2010, Mactec conducted a series of fault studies in this area as part of a region-wide investigation for the proposed Purple Line Metro subway extension. Mactec advanced a seismic line along Selby Avenue, oriented northwest-southeast, which is just one block east of the subject study area. In their seismic line, they encountered a geophysical anomaly and groundwater barrier which they inferred to be the location of the fault trace along Selby (Parsons, 2011). We have shown this barrier and anomaly location in our Drawing No. 1 – Regional Fault Map, with respect to the location of the subject property.

The city of Los Angeles, in their Navigate LA maps, show the main fault location to cut across the northern portion of Lot 20 (1749 Malcolm), part of the subject project area. This data is based on the Department of Conservation, California Geologic Survey Digital Database of Quaternary and Younger Faults from the Fault Activity Map of California, version 2.0, as well as on Bryant, 2005. We have recognized the postulated location of the fault in this area by the CGS and shown it as such on our maps; however, the alignment of the fault is based on a combination of recent regional-scale geologic modeling by Kenney et al. as well as rough discrete data compiled from several older maps at scales generally not suitable enough to depict the fault location accurately at the scale of the subject project. Nonetheless, we have included the Navigate LA fault location in our Drawing No. 1 – Regional Fault Map, and used that location as a basis for our detailed investigation of the subject site and periphery. We have also plotted on our Regional Fault Map the postulated fault traces from geologic and fault maps by Miles Kenney (see references), as well as Mactec's 2010 seismic line fault study along Selby Avenue and location of groundwater and geophysical anomalies.

Our approach to the site-specific fault study was to advance three continuous core borings and thirteen CPT soundings in a northwest-southeast alignment across the site and corresponding public right-of-way along Malcolm Avenue, research of geologic literature, and our professional engineering-geologic judgment, to determine whether an active trace of the fault underlies the subject site.

GEOLOGIC AND SOILS CONDITIONS

Examination of the boring samples indicated that the site is underlain by at least four distinct geologic units to the maximum depths explored.

Af (Artificial Fill): Fill generally consists of sandy silt to silty gravelly sand. It blankets the site and upper 2-4 feet of disturbed soils materials near the ground surface, mainly from original site grading prior to development.

Qa (Recent Alluvium): Native recent alluvium was found in continuous core boreholes Borings 1 and 2 and is thought to underlie minor surficial fill soils in the middle to southern portion of the site, to an approximate depth ranging from six to eight feet below ground surface. It consists of mainly sandy silt to silty gravelly fine sand.

Qsp (Sag Pond Deposits): The northern portion of the study area appeared to have a different native soil material from near the ground surface, below minor surficial fill. This material generally consists of clayey sandy silt to sandy silty clay. We have interpreted this material to be sag pond deposits from left-lateral strike slip motion along the Santa Monica fault as well as minor normal faulting component in this portion of the fault zone. This will be discussed in significant detail below and forms the basis for our conclusion regarding the presence of a fault strand across the subject site.

Qof (Older Alluvial and Fluvial Deposits): This unit generally corresponds to what is considered to be Pleistocene-age fluvial and alluvial granular deposits of mainly gravel and sandy materials. This unit is interfingered throughout the site and vicinity with Estuarine deposits (see below).

Qoe (Estuarine Deposits): This unit consists mainly of sandy silt, clay, and silty very fine sand materials will little gravel. It is also interpreted to be Pleistocene and is thought to be interfingered throughout the area with more granular fluvial and alluvial deposits (Qof).

Paleosols. As part of this fault study, senior engineering geologist Steve Miller was brought on to look through the samples to determine whether paleosols were present. The samples of the soil materials retrieved from the borings were examined for evidence of pedogenic soils that may have developed on the most recent sediments and on older fan surfaces during periods of relative stability (no deposition or erosion). Such evidence would be the presence of darker A horizons and/or argillic (Bt) horizons. Differentiation of these features is generally based on color, texture, and clay content. The samples from the three borings were compared with regard to these characteristics in order to try to correlate the fan surfaces. Although some thin layers displayed evidence of oxidation and incipient soil horizon formation, they were generally not continuous across the site and are thought to exist only in short discontinuous lenses. Well-developed paleosols, furthermore, were not found in the borings, as the depositional environment (rapid alluvial deposition with alternating estuarine fine-grained deposition) does not generally lend itself well to the development of distinct soil horizons. In the absence of easily recognizable, consistent and thick enough soil horizons, silty sandy gravel beds, as well as clayey sandy silt layers, were used as marker beds and for correlation across borings and CPT soundings.

Age of Deposits. A number of layers were found in our Borings 1, 2, and 3 to appear slightly oxidized (see detailed Boring Logs in the Appendix), but these layers were generally not continuous or thick enough to follow or cross-correlate across borings. The native materials as found in our borings correspond to “uplifted and highly dissected older sedimentary units” as described in Parsons 2011 report.

No detrital charcoal or any other organic material was found in any of the sediments underlying the subject site. Therefore, direct age-dating of materials was not possible with the materials encountered in this fault study.

However, studies by Parsons and AMEC (2011) suggest the Holocene-Pleistocene boundary to be at approximately eight to twelve feet below the ground surface. Parsons mentioned in their report that younger alluvium may be “locally present at shallow depths” from eight to ten feet. Hand augering within the depth of utilities, however, makes interpretation and description of younger alluvium difficult. We generally agree with AMEC’s findings that older (Pleistocene) alluvial deposits begin at depths ranging from eight to twelve feet depth across the subject site.

Groundwater

Historically highest groundwater near the subject site is shown on published maps (Figure No. 4) to vary considerably with increasing proximity to the fault zone. At the site location, historic groundwater depth is shown to be approximately 10 to 20 feet below ground surface, although these are historic levels and predate extensive pumping since the original measurements. True current groundwater levels are likely to be lower than what is shown on the historic maps.

Groundwater was encountered in one of the three continuous core borings, in Boring 3, located in the northern portion of the subject site. Along the northern property boundary, groundwater was encountered in our Boring 3 at a depth of 47 feet, whereby groundwater was not detected in Borings 1 and 2 in the middle to southern portion of the subject property. As such, there appears to be a groundwater barrier at around the location of B-3 on the subject site.

It should be noted that, whereas B-1 and B-2 were backfilled with earth since groundwater was not encountered, due to the presence of groundwater at 47 feet depth in B-3, B-3 was concreted up to the ground surface as is required by county law for boreholes that penetrate the local groundwater table.

In recognized fault zones, shallower groundwater levels or springs generally correspond to the presence of faulting. As such, this information is also of significance in our overall fault study, which is discussed further below.

FINDINGS

In order to determine whether a fault extends through the subject site, we have prepared Geologic Cross Section A-A', drawn roughly parallel to Malcolm Avenue and roughly 70 degrees to the orientation of the main trace of the fault, as shown on Navigate LA. We then present at their respective locations along the section, the profiles of each of the continuous core borings and cone penetrometer soundings, including groundwater data.

As shown in Geologic Cross Section A, starting from the southern end of the study area at CPT-13, the encountered soils units tend to roughly correspond in elevation northward, approximately until the location of Boring 3 and CPT-7. North of B-3, the upper 35 feet of soils appear to be soft, fine-grained silt and clayey materials. Moreover, starting from Boring 3 and extending northward, groundwater was encountered in Boring 3 as well as in CPT-7 through 10, which are all north of B-3. Whereas CPT-1 through CPT-6 and CPT-11 through CPT-13 (south of fault) did not encounter groundwater or significant caving, CPT-7 through CPT-1o all encountered caving in the 2" CPT hole immediately after drilling, in the wet section below 45 feet, such that water rose in the hole to depths of approximately 33 to 35 feet bgs.

Moreover, as mentioned previously, the ground elevation actually drops toward the north portion of the site, as noted in the topographic survey. The ground elevation drops by two feet north along Malcolm in the near vicinity of the property, before beginning to rise again in elevation approximately 50 feet northwest of the project area. This area of the Santa Monica fault exhibits a stronger left-lateral strike slip component, as well as a less prominent normal faulting component, according to referenced publications by fault specialist Miles Kenney, Ph.D. This is in contrary to other parts of this fault zone, particularly in the Hollywood and West Hollywood areas, where the fault is defined by a prominent scarp, higher elevations to the north compared to south of the fault, and reverse faulting (Dolan, 2000).

Based in part on a discussion with retired fault specialist Richard Crook, Jr., we have interpreted these fine-grained soft clayey materials as found in the upper 35 feet of CPT-7 through CPT-10 to be related to sag pond deposits typical of strike-slip fault zones with a normal fault slip component.

In summary, this elevation anomaly, groundwater barrier, break in units around B-3, and presence of sag pond deposits in the north part of the study area, bring us to the conclusion that the fault extends through the subject property, at approximately the location of B-3. This generally corresponds to the fault location as shown on Navigate LA as well as other fault maps by Kenney and Dolan; as well as the groundwater and geophysical anomalies along Selby Avenue as detected by Mactec (now Amec Foster Wheeler) in their 2010 study.

Based on these findings, and our review of prior investigations by others as well as several published and unpublished maps and reports, it is our professional opinion that a prominent strand of the Santa Monica fault zone extends through the northeast portion of the subject site, approximately ten feet south of the location as shown on Navigate LA maps. Please see our Geologic Map and Fault Study Plan – Drawing No. 2, for the location of the fault across the subject site, based on our field exploration and geologic interpretation of the subsurface data.

MITIGATION OF FAULT RUPTURE HAZARD

Since a fault splay was found during our study, it is therefore recommended, that as part of the site development, two forms of mitigation to be utilized.

1. Avoidance. As required by state and city law, no new structure shall be constructed across the active fault splay, as shown on our Geologic Map. The new structures may be as close as ten feet to the fault splay, toward the south (since the proposed basement level is only five feet below ground surface in this location), provided the second mitigation measure is also adopted;
2. A thick slab “mat” foundation should be utilized for the eastern-most building in this project; see Drawing No. 4 through 6 for a graphical depiction. (The western building which will be structurally independent from the eastern building can utilize a conventional foundation without using a 2’ mat, since it is more than 50 feet away from the westward-projected fault trace; see geotechnical engineering recommendations later in this report.) The “mat” should have a thickness of 2 feet. For design, the “mat” should be designed based on a modulus of subgrade reaction of 400 kips per cubic foot. This type of mitigation is considered by the

undersigned to be sufficient mitigation of fault rupture hazard within close proximity of the subject site.

We have included a Geotechnical Site Plan, in which we restrict the footprint of the proposed construction to ten feet south of the fault as shown on our Geologic Map.

Moreover, we have shown in our Geotechnical Cross Section B-B and C-C', the two-feet thick mat foundation which will be required for the proposed eastern building, due to incidence and proximity of active faulting in the project area.

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PART II. GEOTECHNICAL INVESTIGATION REPORT

Proposed Multi-Residential Building Project

1749-51 Malcolm Avenue and 1772 Glendon Avenue

Los Angeles, California

INTRODUCTION

This report presents the results of a geotechnical investigation for the subject project. During the course of this investigation, the engineering properties of the subsurface materials were evaluated in order to provide recommendations for design and construction of temporary excavations, foundations, grade slabs, and subsurface walls. The investigation included subsurface exploration, soil sampling, laboratory testing, engineering evaluation and analysis, consultation and preparation of this report.

During the course of this investigation, the project plans provided by the client were used as reference. The plans were prepared by the offices of Alajajian Marcoosi, Architects, Inc., and the topographic survey was prepared by J & B Engineers Surveyors, dated 10/8/2013.

The enclosed Geotechnical Site Plan; Drawing No. 4, shows the approximate location of the drilled geotechnical borings in relation to the site boundaries. This drawing also shows the approximate locations of Geotechnical Cross Sections B-B' and C-C'. Drawing Nos. 5 and 6 show the profiles of the Cross Sections B-B' and C-C'.

Figure Nos. 1 through 4 show the associated Site Location Maps, Regional Geologic Map as well as the Historically Highest Groundwater Contour Map of the site. Figure Nos. 5 through 7 show the associated Seismic Hazard Zone Maps.

The attached Appendix I, describes the method of field exploration. Figure Nos. I-1 through I-7 present summaries of the materials encountered at the location of our borings. Figure No. I-8 presents the Uniform Soil Classification System Chart; a guide to the Log of Exploratory Borings. (CPT data used in the fault study is also included in this Appendix.)

The attached Appendix II describes the laboratory testing procedures. Figure Nos. II-1 and II-2 present the results of direct shear and consolidation tests performed on selected undisturbed soil samples.

Appendix III includes selected photographs taken during the fault study, and Appendix IV includes miscellaneous fault maps and permits related to the fault study.

It should be noted that the presented design recommendations for temporary excavation and foundation are based on the provided project plans and assumed structural loading conditions. This office should be consulted if the actual magnitude of the structural loading and excavation depths are different from those used during this investigation. Modifications to the presented design recommendations may then be made to reflect the actual conditions.

PROJECT CONSIDERATIONS

It is our understanding that the proposed project will consist of construction of two separate multifamily residential buildings on the subject sites. One building will face Malcolm Avenue and the other will face Glendon Avenue. See the enclosed Site Plan and Cross Sections; Drawing Nos. 1 through 3, for approximate location on the plan and the profiles of the proposed buildings with respect to present grades.

The proposed buildings are expected to be two-story wood frame structures constructed over parking garage. Due to descending of the site grades from west to east through an approximate elevation of about 8 feet, depths to the garage level will vary for the east and west buildings. The finished grades of the garage of the building facing Glendon Avenue will essentially be established close to the present grade. The finished grade of the garage of the building facing Malcolm Avenue will be established at some 5 feet below grade. The grade between the two buildings will then be raised to provide access. See the enclosed Site Plan and Cross Sections for detail.

The exterior walls of the basement garage will have variable horizontal setbacks from the respective property lines. See the enclosed Site Plan and Cross Sections for the building plan and profile with respect to the existing grades. Maximum depth of excavation to the garage grade of the east building is expected to be on the order of 6 feet. Therefore, total height of excavation to the perimeter wall footing levels of the basement garage of the east building (facing Malcolm Avenue) is expected to be on the order of 8 feet.

As part of the construction of the basement garage of the east building, therefore, excavation will be required. Where adequate horizontal distance beyond the planned line of excavation is available, unsupported, open excavation slopes with gradients as recommended in this report may be used. Where adequate horizontal spacing is not available, temporary shoring should be used. Such shoring should be in a form of cantilevered soldier piles.

Structural loading data was not available at the time of this investigation. For the purpose of this report, it is assumed that the maximum concentrated loads of the interior columns will be on the order of 450 kips, combined dead plus frequently applied live loads. Perimeter and interior wall footings of the structure are expected to exert loads of on the order of 12 kips per lineal foot.

ANTICIPATED SITE GRADING WORK

For the west building facing Glendon Avenue, site grading will involve removal and recompaction of the any surficial fill and disturbed soils generated from demolition of the existing structures. The compacted soils will be used for support of grade slabs only. Because of the fine grained nature and potentially expansive character, when used in the areas of the new compacted fill, the site soils should be placed at some 3 percent higher than the optimum moisture content. Also, the grade slabs for this project should be designed for expansive soil conditions.

For the east building facing Malcolm Avenue, site grading will basically include excavation in order to establish the basement garage grade. As part of the site grading work, slab subgrade will be prepared for the basement garage.

As part of the site grading work, the space between the 2 buildings will be raised by nearly 10 feet. Only the excavated sandy soils should be used for wall backfilling. It is anticipated that, after completion of the site grading work, materials will be exported from the site.

SITE CONDITIONS

SURFACE CONDITIONS

The site of the proposed project is spans between Glendon Avenue and Malcolm Avenue, in west Los Angeles, California. The site is irregular in shape and covers a plan area of about 24,560 square feet. See the enclosed Site Plan; Drawing No. 1 for site shape and location.

At the time of our field investigation, the subject site was occupied by residential buildings. Such structures will be removed from the site. The ground surface of the site was noted to rise from east to west through an average gradient of less than 3 percent. The elevation difference between the east and west sides of the site is about 8 feet.

Existing off-site buildings occur to the sides of the subject site. See the enclosed Site Plan for approximate locations of the existing off-site buildings.

SUBSURFACE CONDITIONS

(**Note:** Subsurface geologic conditions were described in considerable detail in Part I of this combined geologic and geotechnical report. What follows is a description of subsurface conditions strictly from a geotechnical engineering point of view.)

Correlation of the subsoil between the borings was considered to be good. Generally, the site, to the depths explored, was found to be covered by surficial fill underlain by natural deposits of sandy and/or clayey silt, silty gravelly sand, and silty clay soils to the depths explored. Thickness of the surficial fill was found to be less than two feet at the location of our borings. Deeper fill, however, may be present beneath the existing buildings and in old utility lines. For the west building, the existing fill will be automatically removed by the planned basement garage excavations. For the east building, the existing fill should be removed and recompacted for support of grade slabs only.

The upper native soils through which the basement garage excavations will be made for the east building were found to consist of sandy silt and silty sand soils. These soils were found to be generally firm to stiff in-place. The results of our laboratory investigations indicated that these materials were of moderate to high strengths.

For the west building, the sandy silt native soils within the influence zone of the foundation pressure were found to be generally firm to stiff in-place and adequate to receive new fill, structural foundations and grade slabs. The results of our laboratory testing indicated that these materials were of moderate to high strengths and low to moderately compressible.

The soils near the planned foundation levels of the east building facing Malcolm Avenue, were found to consist of generally dense, silty sand soils, although stiff sandy silt soils may also be exposed. The results of our laboratory testing indicated that these materials were of moderate to high strengths and low to moderately compressibility.

The site upper soils, extending locally to the garage level of the east building, were found to be fine grained in nature and potentially expansive. The expansion index of the site upper soils was found to be 46.

During the course of our investigation, no groundwater was found in our borings drilled to a maximum depth of 50 feet. Our fault study borings drilled to depths of 80 feet also did not encounter groundwater.

Caving was not experienced in our open boring (Boring No. 4).

SEISMIC DESIGN CONSIDERATIONS

In accordance with the 2013 California Building Code (CBC 2013), the project site can be classified as site “D”. The mapped spectral accelerations of S_S=2.210 (short period) and S_1 =0.821 (1-second period) can be used for this project. These parameters corresponds to site Coefficients values of F_a =1.00 and F_V =1.5, respectively.

The seismic design parameters would be as follows:

Sms= Fa (Ss) = 1.0 (2.210) = 2.210

Sm1=Fv (S1) = 1.5 (0.821) =1.231

Sds=2/3 (Sms) = 2/3 (2.210) = 1.474 and

Sd1=2/3 (Sm1) = 2/3 (1.231) = 0.821

EVALUATION OF LIQUEFACTION POTENTIAL

As part of our field exploration, one of the geotechnical borings was drilled at the subject site to a maximum depth of 51 feet. No groundwater was encountered. However, the available maps indicate that the historically highest groundwater level at the site was near a depth of about 10 feet. For the purpose of evaluating liquefaction potential, therefore, SPT (Standard Penetration Test) were conducted from a depth of 10 feet.

The results of our liquefaction analysis (using CivilTech program) with lower level peak ground acceleration (PGA) corresponding to 2/3 of PGAm (a value of 0.565g) and the predominant earthquake magnitude of 6.72 with 10% probability of exceedance in 50 years (475-year return period) a factor of safety of greater than 1.1 was obtained for all layers. The corresponding seismic related settlements is found to be 0.02 inches.

The above given magnitudes of settlements should be added to the settlements associated with gravity loading. See FOUNDATION Section of this report. It is estimated that total and differential settlements from all causes would be less than 1.5 inches and 0.75 of one inch respectively.

When using higher level peak ground acceleration value of 0.848g corresponding to PGA based on PGAm (Maximum Considered Earthquake-Geometric Mean, MCEg, adjusted to site effects, ASCE 7-10 Eq. 11.8-1) and the predominant earthquake magnitude of 6.84 2% probability of exceedance in 50 years (2475-year return period) a factor of safety of greater than 1.0 was also obtained for all layers. The corresponding seismic related total settlements, however, was found to be 0.11 inches. See the enclosed Engineering calculations.

Based on the above, therefore, it is our opinion that soil liquefaction will not occur at the subject site.

EVALUATION AND RECOMMENDATIONS

GENERAL

Based on the geotechnical engineering data derived from this investigation, the site is suitable for the proposed development. Conventional spread footing foundation system can be used for support of the proposed buildings. The foundation bearing materials for the west building facing Glendon Avenue are expected to be stiff native soils. For the east building facing Malcolm Avenue, the foundation bearing materials will consist of dense, silty sand soils, although locally stiff sandy silt may also be exposed. 1.

The support system for the east building fronting Malcolm Avenue should be in a form of thick slab, 2' thick "mat foundation" The "mat" should underlay the entire east building, because of its proximity to the fault. The west building facing Glendon Avenue may utilize conventional foundations as discussed further below, since the western building will be in excess of 50 feet distance from the westward trace of the fault.

For the purpose of this project, we recommend the "mat" to have a minimum thickness of 2-feet. For design, the "mat" should be designed based on a Modulus of Subgrade Reaction of 400 kips per cubic foot.

It is anticipated that the basement garage excavations for the east building will be made through surficial fill and native soils consisting of sandy silt and silty sand soils. The maximum height of excavation to the perimeter wall footing levels of the basement garage are expected to be less than 8 feet.

It is anticipated that the perimeter walls of the basement will have variable horizontal setbacks form the respective property lines. Where adequate horizontal distance beyond the planned line of excavation is available, unsupported, open excavation slopes in accordance with the recommendations of this report may be used. In the areas where space is limited, temporary shoring should be used. Such shoring should be in a form of cantilevered soldier piles.

The grade slabs for the west building can be supported on the finished grades which will consist of properly compacted fill soils. The garage slabs can be supported on the native subgrade, provided that any disturbed soils would be compacted in-place to a relative compaction of at least 90 percent at optimum moisture content. The fine grained soils should be placed at some 3 percent higher than the optimum moisture content. For the purpose of this project, and due to potentially expansive character, the grade slabs should be at least 5 inches and be reinforced with #4 bars placed at every 16 inches on center.

The following sections present our specific recommendations for site grading, site drainage, temporary excavations, foundations, lateral design, grade slabs, basement walls, and observations during construction.

GRADING RECOMMENDATIONS

For the west-building facing Glendon Avenue, site grading will involve removal and recompaction of the any surficial fill and disturbed soils generated from demolition of the existing structures. The compacted soils will be used for support of grade slabs only. Because of the fine grained nature and potentially expansive character, when used in the areas of the new compacted fill, the site soils should be placed at some 3 percent higher than the optimum moisture content. Also, the grade slabs for this project should be designed for expansive soil conditions.

For the east-building facing Malcolm Avenue, site grading will basically include excavation in order to establish the basement garage grade. As part of the site grading work, slab subgrade will be prepared for the basement garage.

As part of the site grading work, the space between the 2 buildings will be raised by nearly 10 feet. Only the excavated sandy soils should be used for wall backfilling. It is anticipated that, after completion of the site grading work, materials will be exported from the site.

Prior to placing any fill, the Soil Engineer should observe the excavation bottoms. The areas to receive compacted fill should be scarified to a depth of about 8 inches, moistened as required to bring to approximately optimum moisture content or higher (for fine grained soils) and compacted to at least 90 percent of the maximum dry density as determined by the ASTM Designation D 1557 Compaction Method.

General guidelines regarding site grading are presented below which may be included in the earthwork specification. It is recommended that all fill be placed under engineering observation and in accordance with the following guidelines:

1. All fill should be granular in nature. Therefore, only the excavated sandy soil from the site may be reused in the areas of compacted fill.

2. Before wall backfilling, subdrain should be installed. The subdrain system should consist of 4-inch diameter perforated pipes embedded in about 1 cubic feet of free draining gravel per foot of pipe. An approved filter fabric should then be wrapped around the free draining gravel in order to reduce the chances of siltation. Non-perforated outlet pipes should then be used to pass through the wall into an interior sump. The subdrain pipes should be laid at a minimum grade of two percent for self-cleaning.

3. The excavated sandy soils from the site are considered to be satisfactory to be reused in the areas of compacted fill and wall backfill provided that rocks larger than 6 inches in diameter are removed.

4. Fill material, approved by the Soil Engineer, should be placed in controlled layers. Each layer should be compacted to at least 90 percent of the maximum unit weight as determined by ASTM designation D 1557 for the material used.

5. The fill material shall be placed in layers which, when compacted, shall not exceed 8 inches per layer. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to insure uniformity of material in each layer.

6. When moisture content of the fill material is too low to obtain adequate compaction, water shall be added and thoroughly dispersed until the moisture content is near optimum.

7. When the moisture content of the fill material is too high to obtain adequate compaction, the fill material shall be aerated by blading or other satisfactory methods until near optimum moisture condition is achieved.

8. Inspection and field density tests should be conducted by the Soil Engineer during grading work to assure that adequate compaction is attained. Where compaction of less than 90 percent is indicated, additional compactive effort should be made with adjustment of the moisture content or layer thickness, as necessary, until at least 90 percent compaction is obtained.

SITE DRAINAGE

Site drainage should be provided to divert roof and surface waters from the property through nonerodible drainage devices to the street. In no case should the surface waters be allowed to pond adjacent to building or behind the basement garage walls. A minimum slope of one and two percent are recommended for paved and unpaved areas, respectively.

The site drainage recommendations should also include the following:

1. Having positive slope away from the buildings, as recommended above;
2. Installation of roof drains, area drains and catch basins with appropriate connecting lines;
3. Managing landscape watering;
4. Regular maintenance of the drainage devices;
5. Installing waterproofing or damp proofing, whichever appropriate, beneath concrete grade slabs and behind the basement walls.
6. The owners should be familiar with the general maintenance guidelines of the City requirements.

TEMPORARY EXCAVATION

Unshored Excavations: Where space limitations permit, unshored temporary excavation slopes could be used. Based upon the engineering characteristics of the site upper soils, it is our opinion that temporary excavation slopes in accordance with the following table should be used:

Maximum Depth of Cut (Ft)	Maximum Slope Ratio (Horizontal:Vertical)
0-4	Vertical
>4	3/4:1

Water should not be allowed to flow over the top of the excavation in an uncontrolled manner. No surcharge should be allowed within a 45-degree line drawn from the bottom of the excavation. Excavation surfaces should be kept moist but not saturated to retard raveling and sloughing during construction.

It would be advantageous, particularly during wet season construction, to place polyethylene plastic sheeting over the slopes. This will reduce the chances of moisture changes within the soil banks and material wash into the excavation.

Cantilevered Soldier Piles: Cantilevered soldier piles should be as a means of temporary shoring where adequate space is not available to make unsupported, open excavation slopes. Soldier piles consist of structural steel beams encased in slurry mix.

The lateral resistance for cantilevered soldier piles may be assumed to be offered by available passive pressure below the basement level. An allowable passive pressure of 500 pounds per square foot per foot of depth may be used below the basement level for soldier piles having center-to-center spacing of at least 2-1/2 times the pile diameter. Maximum allowable passive pressure should be limited to 3,600 pounds per square foot. The maximum center-to-center spacing of the vertical shafts should be maintained no greater than 10 feet.

For design of temporary support, active pressure on piles may be computed using an equivalent fluid density of 30 pounds per cubic foot. Uniform surcharge may be computed using an active pressure coefficient of 0.30 times the uniform load.

When using cantilevered soldier piles for temporary shoring, the point of fixity (for the purpose of moment calculations), may be assumed to occur at some 2 feet below the base of the excavation. In order to limit local sloughing, it is recommended that lagging be used where fill is exposed between the soldier piles. All wood members left in ground should be pressure treated.

Where off-site buildings occur within a horizontal distance equal to the depth of cut, the allowable lateral deflection at the tops of the piles should be limited to ½ of one inch. In the areas where the shoring system supports public right-of-way, and where off-site buildings occur outside a horizontal distance equal to the depth of excavation, the allowable lateral deflection at the tops of the piles can be increased to one inch.

The temporary shoring should be monitored during the course of basement garage excavation. The report of monitoring should be provided to the Project and Soil Engineers for review and comment. If excessive lateral movements are noted, additional lateral support system in a form of internal bracing may be required.

Caving was not experienced in our open boring. Therefore, it is anticipated that significant caving will not occur during drilling of the shoring piles.

The recommendations presented in this section are for use in design and for cost estimating purposes before construction. The contractor is solely responsible for safety during construction.

MONITORING

The lateral support of the existing off-site buildings should be maintained by the temporary shoring system. The project Structural Engineer should examine the subject site and use appropriate shoring system to secure lateral stability of the off-site improvements assuming appropriate surcharge loads of the off-site buildings (add to the lateral earth pressure). Proper monitoring program should be maintained during basement garage excavation to assure the shoring pile deflections would not exceed the tolerable limits, as recommended in the preceding section.

It is important that the survey of the conditions of the off-site improvements be recorded before installation of the shoring piles and basement garage excavation.

FOUNDATIONS

Conventional spread footing foundation systems can be used to support the proposed buildings. The foundation bearing materials for the west building facing Glendon Avenue are expected to be stiff native soils. For the east building facing Malcolm Avenue, the foundation bearing materials will consist of dense, silty sand soils, although locally stiff sandy silt may also be exposed.

The support system for the east building fronting Malcolm Avenue should be in a form of a 2’ thick slab “mat foundation” .

For the purpose of this project, we recommend the “mat” to have a minimum thickness of 2-feet. For design, the “mat” should be designed based on a Modulus of Subgrade Reaction of 400 kips per cubic foot.

Exterior and interior spread footings should be a minimum of 18 inches wide and should be placed at a minimum depth of 24 inches below the lowest adjacent final grades. The recommended allowable maximum bearing pressure for minimum size footings placed in stiff and/or dense native soils can be taken as 2,400 pounds per square foot. This value may be increased at a rate of 100 and 200 pounds per square foot for each additional foot of footing width and depth, to a maximum value of 3,000 pounds per square foot.

The above given values are for the total of dead and frequently applied live loads. For short duration transient loading, such as wind or seismic forces, the given values may be increased by one-third.

Under the allowable maximum soil pressure, footings with assumed collected loads of 450 kips are expected to settle on the order of ¾ of one inch. Wall footings, with loads of about 12 kips per linear foot are expected to settle on the order of 5/8 of one inch. Maximum differential settlements are expected to be on the order of 1/4 of an inch. The major portions of the static loading settlements are expected to occur during construction. The seismic settlements should be added to the above values.

LATERAL DESIGN

Lateral resistance at the base of footings in contact with native soils may be assumed to be the product of the dead load forces and a coefficient of friction of 0.30. Passive pressure on the face of footings may also be used to resist lateral forces. A passive pressure of zero at the finished grades and increasing at a rate of 250 pounds per square foot per foot of depth to a maximum value of 2,000 pounds per square foot may be used for footings poured against native soils.

GRADE SLABS

The grade slabs for the west building can be supported on the finished grades which will consist of properly compacted fill soils. The garage slabs can be supported on the native subgrade, provided that any disturbed soils would be compacted in-place to a relative compaction of at least 90 percent at optimum moisture content. The fine grained soils should be placed at some 3 percent higher than the optimum moisture content. For the purpose of this project, and due to potentially expansive character, the grade slabs should be at least 5 inches and be reinforced with #4 bars placed at every 16 inches on center.

In the areas where moisture sensitive floor covering is used and slab dampness cannot be tolerated, a vapor-barrier should be used beneath the slabs. This normally consists of a 10-mil polyethylene film covered with 2 inches of clean sand.

BASEMENT WALLS

The perimeter walls of the basement garage of the proposed building are expected to be buried to a maximum depth of about 6 feet. Static design of these walls (being restrained against rotation) could be based on an equivalent fluid pressure of 54 pounds per square foot per foot of depth. This assumes that no hydrostatic pressure will occur behind the retaining walls. This will require that proper subdrain be installed behind the basement garage walls.

Subdrain normally consists of 4-inch diameter perforated pipes encased in gravel (at least one cubic foot per lineal foot of the pipes). In order to reduce the chances of siltation and drain clogging, the free-draining gravel should be wrapped in filter fabric proper for the site soils.

In accordance with new City Code requirements, the basement garage walls should be designed not only for static, but also for seismic lateral earth pressures. Basically, during the course of strong ground motion earthquake, an additional lateral earth pressure will be applied to the retaining walls. For this project, the magnitude of the seismic earth pressure can be assumed to be ½ of the static lateral earth pressure value of 54 pounds per square foot per foot of depth, however, in a form of a reverse triangle, where the maximum intensity of 27 pounds per square foot will occur at the top of the wall and the intensity decreases linearly downward to zero at the bottom of the wall. The resultant of the seismic pressure should be applied at a level 0.6 times the wall height above the base of the wall.

In addition to the lateral earth pressure, the basement garage walls should also be designed for any applicable uniform surcharge loads imposed on the adjacent grounds. Uniform surcharge effects may be computed using a coefficient of 0.40 times the assumed uniform loads.

Where adequate space is available, granular fill should be placed and compacted behind the retaining walls (after the subdrain is installed) to a relative compaction of at least 90 percent. At least one field density tests should be taken for each 2 feet of the backfill. The degree of compaction of the wall backfill should be verified by the Soil Engineer.

Where space is limited, free-draining gravel should be placed behind the retaining walls. The gravel should then be capped with at least 18 inch thick site soils also compacted to a relative compaction of at least 90 percent. It should be noted that the backfill placed behind the basement garage walls should be made after the concrete decking is cast. All grading surrounding the building should be such to ensure that water drains freely from the site and does not pond.

ON-SITE STORM WATER INFILTRATION

It is our understanding that, as part of the development of the subject site, the City requires an on-site storm water infiltration system. This normally consists of diversion of the storm water into a system that will allow infiltration into the ground. The infiltration system should normally be kept away from existing and proposed structural foundations and property lines by at least 10 feet. Also, a 10 feet buffer zone for natural infiltration is required from the base of the water dispersing trench and the water level.

The subject project will have a basement garage extending to some 6 feet below grade. Considering that the historically highest groundwater level at the site is near a depth of about 10 feet, use of on-site storm water infiltration system at the subject site would not be feasible.

Based on the above, a system of “capture and use” may be used for this project. This normally consists of a closed system where the water is collected and used in the areas of planters. Any excess water, after going through proper infiltration process, would be diverted to the curb line.

OBSERVATION DURING CONSTRUCTION

The presented recommendations in this report assume that all structural foundations will be established in native soils. All footing excavations should be observed by a representative of this office before reinforcing is placed.

The depths of cantilevered soldier piles should be confirmed by a representative of this office before concrete is placed. It is essential to assure that soldier piles are drilled to proper depths and diameters, and in accordance with the project plans and specifications.

Site grading work, such as wall backfilling, and subgrade preparation for basement slab support, should be conducted under observation and testing by a representative of this firm. All backfill soils should be properly compacted to at least 90 percent relative compaction. For proper scheduling, please notify this office at least 24 hours before any observation work is required.

CLOSURE

The findings and recommendations presented in this report were based on the results of our field and laboratory investigations combined with professional engineering experience and judgment. The report was prepared in accordance with generally accepted engineering principles and practice. We make no other warranty, either express or implied.

It is noted that the conclusions and recommendations presented are based on exploration "window" borings and excavations which is in conformance with accepted engineering practice. Some variations of subsurface conditions are common between "windows" and major variations are possible.

The following plates and appendices are attached and complete this report:

References

Liquefaction Evaluation Calculations

Regional Fault Map – Drawing No. 1

Geologic Map and Fault Study Plan – Drawing No. 2

Geologic Cross Section A-A’ – Drawing No. 3

Geotechnical Site Plan – Drawing No. 4

Geotechnical Cross Section B-B’ – Drawing No. 5

Geotechnical Cross Section C-C’ – Drawing No. 6

Figure No. 1 – Site Vicinity Map

Figure No. 2 – Regional Topographic Map showing fault (Navigate LA)

Figure No. 3 – Regional Geologic Map (Dibblee)

Figure No. 4 – Historically Highest Groundwater Contours

Figure Nos. 5, 6 and 7 – Seismic Hazards Maps

Appendix I – Methods of Field Exploration

Figure Nos. I-1.1 through I-3.3 – Logs of Continuous Core Geologic Borings

Figure No. I-4 through I-7 – Logs of Geotechnical Borings

Figure No. I-8 – Unified Soil Classification System

Cone Penetrometer Report by Kehoe Testing and Engineering

Appendix II – Methods of Laboratory Testing

Figure No. II-1 and II-2

Appendix III – Selected Photographs Taken During Field Exploration

Appendix IV – Miscellaneous Attachments

Geomorphic Terrace Map, Miles Kenney, 2014

Mactec/Parsons Fault Map, 2011

Kenney Right vs. Left Lateral Model, Fault Map, 2014

Street Closure, Encroachment and Excavation Permits

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We appreciate the opportunity to be of continued service on this project. If you have any questions, please do not hesitate to contact the undersigned.

Respectfully Submitted,

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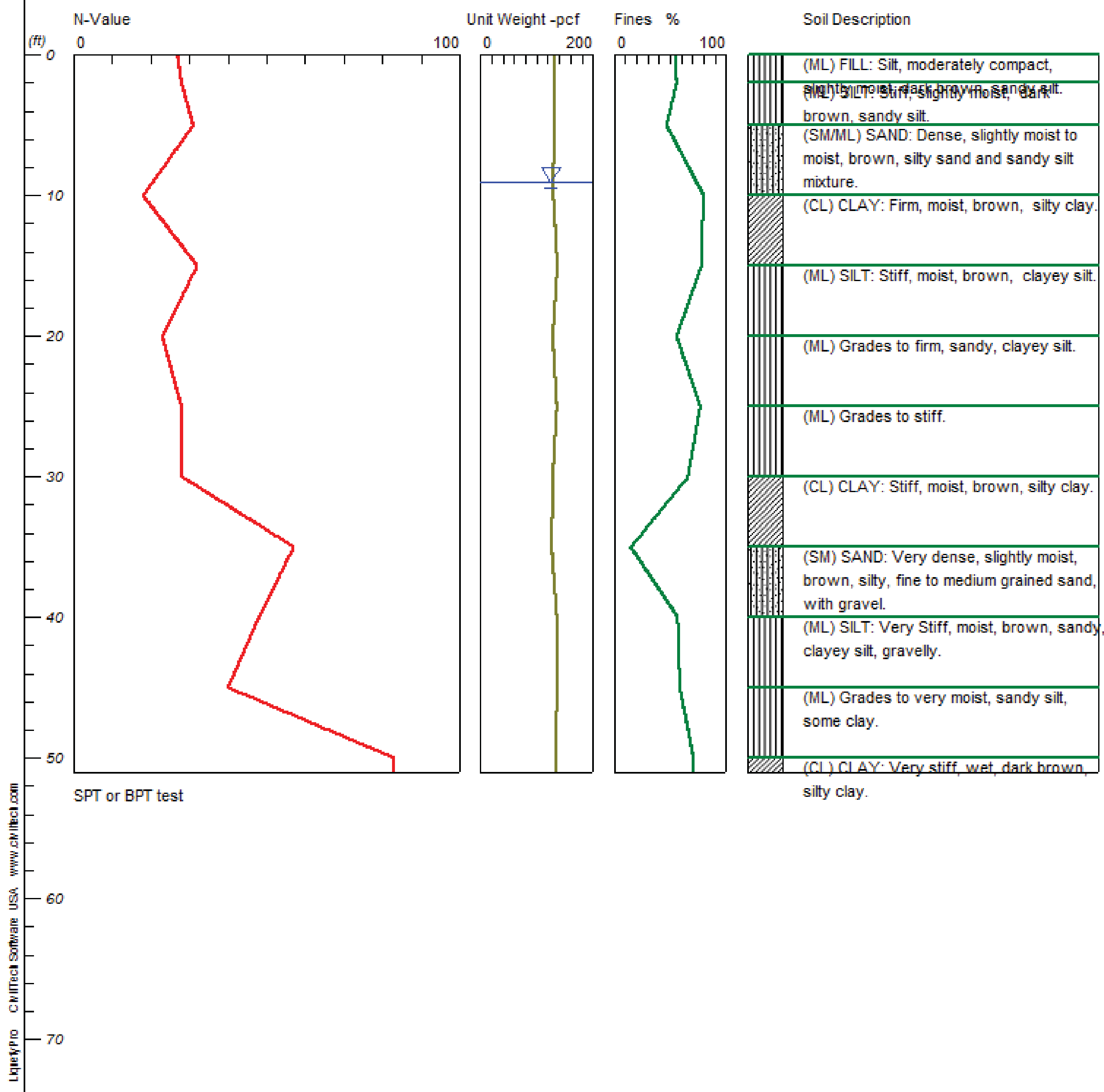
LIQUEFACTION ANALYSIS

1751 Malcolm Ave

Hole No.=1 Water Depth=9 ft

Magnitude=6.84
Acceleration=.848g

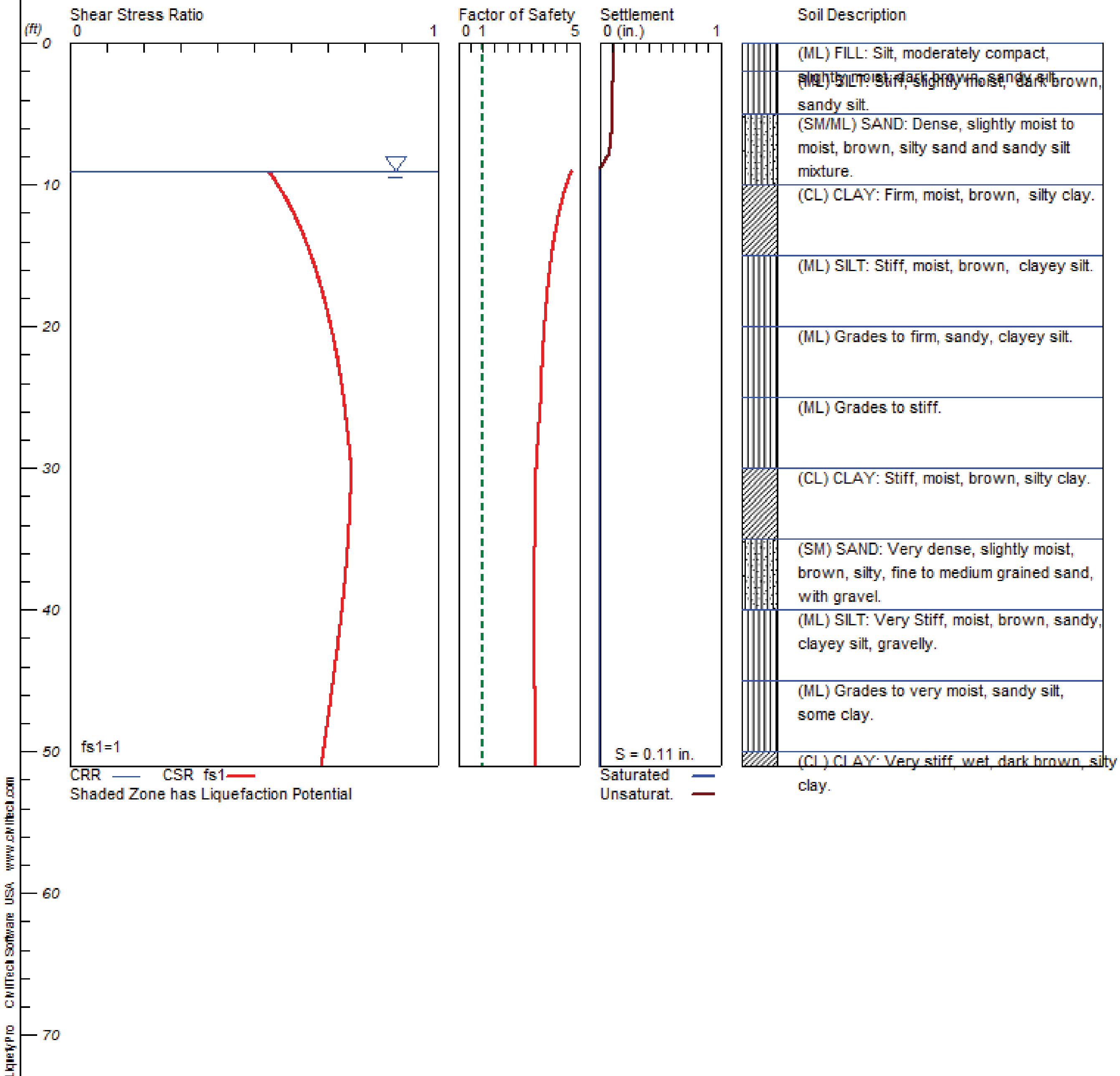


LIQUEFACTION ANALYSIS

1751 Malcolm Ave

Hole No.=1   Water Depth=9 ft

Magnitude=6.84
Acceleration=.848g



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LIQUEFACTION ANALYSIS SUMMARY

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Input File Name:
P:\Projects-2015\15-363-26\Engineering-Calculation\Liquefaction\15-363-02_2%.liq
Title: 1751 Malcolm Ave
Subtitle: 15-363-02_2%

Surface Elev.=
Hole No.=1
Depth of Hole= 51.00 ft
Water Table during Earthquake= 9.00 ft
Water Table during In-Situ Testing= 55.00 ft
Max. Acceleration= 0.85 g
Earthquake Magnitude= 6.84

Input Data:
Surface Elev.=
Hole No.=1
Depth of Hole=51.00 ft
Water Table during Earthquake= 9.00 ft
Water Table during In-Situ Testing= 55.00 ft
Max. Acceleration=0.85 g
Earthquake Magnitude=6.84
No-Liquefiable Soils: Based on Analysis

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Ishihara / Yoshimine
3. Fines Correction for Liquefaction: Stark/Olson et al.*
4. Fine Correction for Settlement: During Liquefaction*
5. Settlement Calculation in: All zones*
6. Hammer Energy Ratio, Ce = 1.2
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1
Plot one CSR curve (fs1=1)
10. Use Curve Smoothing: Yes*
* Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	27.00	131.00	55.00
2.00	28.00	131.00	56.00
5.00	31.00	131.00	47.00
10.00	18.00	130.00	80.00
15.00	32.00	137.00	78.00
20.00	23.00	129.00	56.00
25.00	28.00	136.00	77.00
30.00	28.00	129.00	66.00
35.00	57.00	127.00	15.00
40.00	48.00	136.00	57.00

45.00	40.00	136.00	59.00
50.00	83.00	135.00	71.00

Output Results:

Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.11 in.
Total Settlement of Saturated and Unsaturated Sands=0.11 in.
Differential Settlement=0.054 to 0.071 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	2.53	0.55	5.00	0.00	0.11	0.11
2.00	2.53	0.55	5.00	0.00	0.11	0.11
4.00	2.53	0.55	5.00	0.00	0.10	0.10
6.00	2.53	0.54	5.00	0.00	0.09	0.09
8.00	2.53	0.54	5.00	0.00	0.06	0.06
10.00	2.53	0.57	4.48	0.00	0.00	0.00
12.00	2.53	0.61	4.16	0.00	0.00	0.00
14.00	2.53	0.64	3.94	0.00	0.00	0.00
16.00	2.53	0.67	3.78	0.00	0.00	0.00
18.00	2.53	0.69	3.66	0.00	0.00	0.00
20.00	2.53	0.71	3.56	0.00	0.00	0.00
22.00	2.53	0.73	3.49	0.00	0.00	0.00
24.00	2.53	0.74	3.43	0.00	0.00	0.00
26.00	2.52	0.75	3.37	0.00	0.00	0.00
28.00	2.49	0.76	3.29	0.00	0.00	0.00
30.00	2.46	0.77	3.21	0.00	0.00	0.00
32.00	2.43	0.76	3.19	0.00	0.00	0.00
34.00	2.40	0.76	3.17	0.00	0.00	0.00
36.00	2.38	0.75	3.15	0.00	0.00	0.00
38.00	2.35	0.75	3.14	0.00	0.00	0.00
40.00	2.32	0.74	3.14	0.00	0.00	0.00
42.00	2.30	0.73	3.14	0.00	0.00	0.00
44.00	2.27	0.72	3.15	0.00	0.00	0.00
46.00	2.24	0.71	3.16	0.00	0.00	0.00
48.00	2.22	0.70	3.17	0.00	0.00	0.00
50.00	2.20	0.69	3.19	0.00	0.00	0.00

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

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

---

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

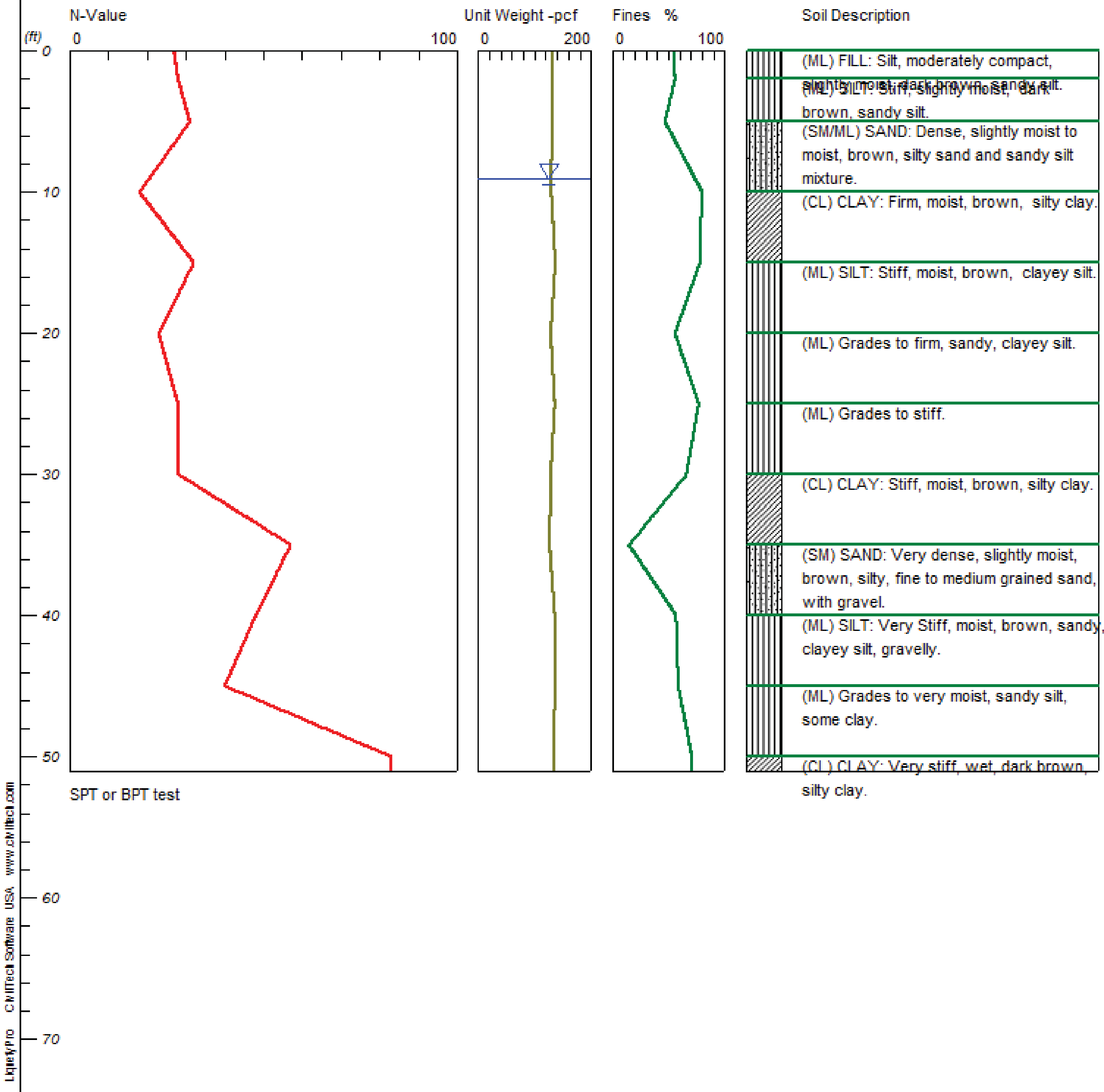
CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated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

LIQUEFACTION ANALYSIS

1751 Malcolm Ave

Hole No.=1   Water Depth=9 ft

Magnitude=6.72
Acceleration=.565g

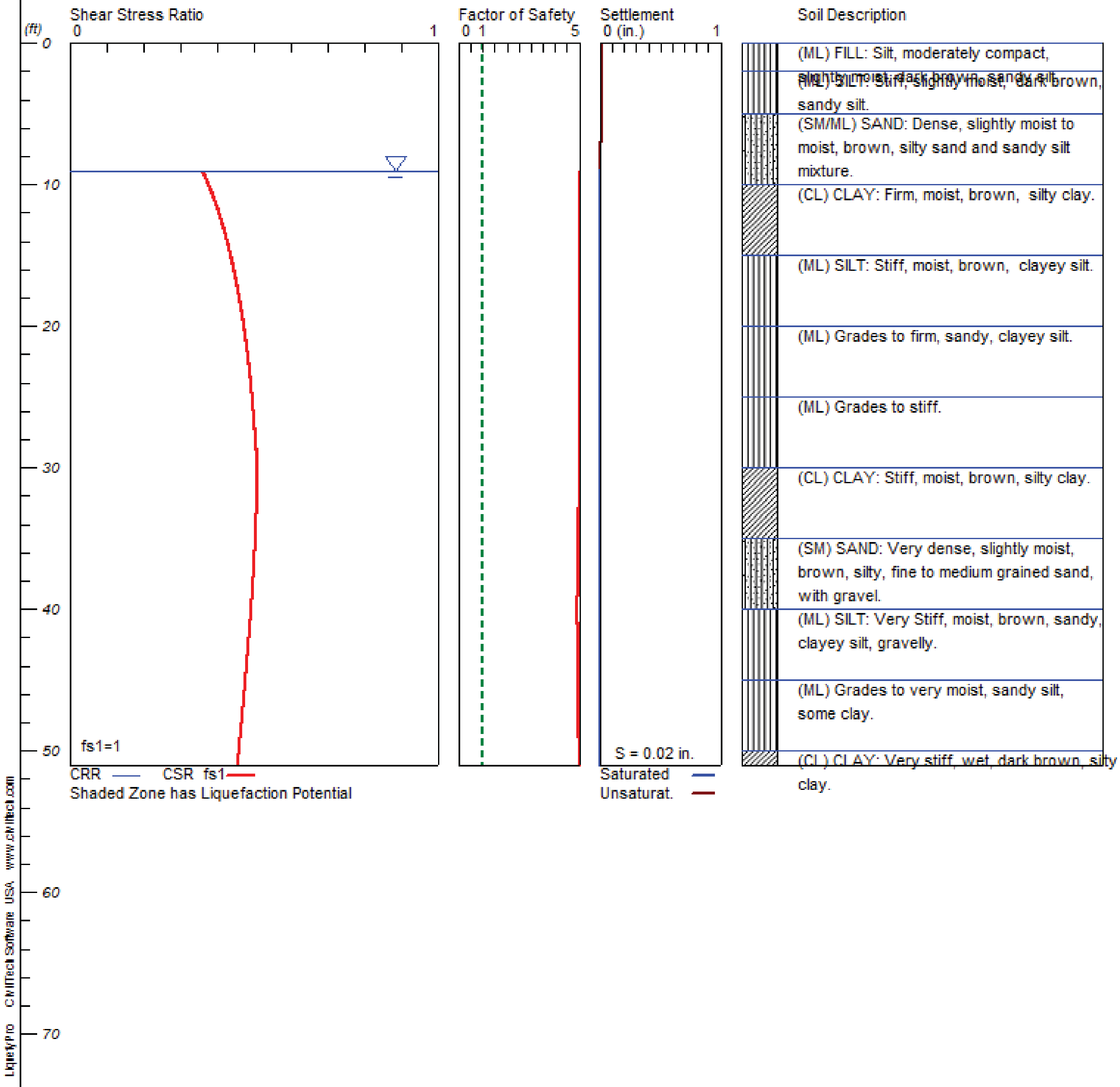


LIQUEFACTION ANALYSIS

1751 Malcolm Ave

Hole No.=1 Water Depth=9 ft

Magnitude=6.72
Acceleration=.565g



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*******************
                                           LIQUEFACTION ANALYSIS SUMMARY

                                          Copyright by CivilTech Software
                                                www.civiltech.com

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        Licensed to ,   7/20/2015       11:17:01 AM

        Input File Name:
P:\Projects-2015\15-363-26\Engineering-Calculation\Liquefaction\15-363-02_10%.liq
        Title:  1751 Malcolm Ave
        Subtitle:  15-363-02_10%

        Surface Elev.=
        Hole No.=1
        Depth of Hole= 51.00 ft
        Water Table during Earthquake= 9.00 ft
        Water Table during In-Situ Testing= 55.00 ft
        Max. Acceleration= 0.56 g
        Earthquake Magnitude= 6.72

 Input Data:
        Surface Elev.=
        Hole No.=1
        Depth of Hole=51.00 ft
        Water Table during Earthquake= 9.00 ft
        Water Table during In-Situ Testing= 55.00 ft
        Max. Acceleration=0.56 g
        Earthquake Magnitude=6.72
        No-Liquefiable Soils:   Based on Analysis

        1. SPT or BPT Calculation.
        2. Settlement Analysis Method: Ishihara / Yoshimine
        3. Fines Correction for Liquefaction: Stark/Olson et al.*
        4. Fine Correction for Settlement: During Liquefaction*
        5. Settlement Calculation in: All zones*
        6. Hammer Energy Ratio,                                   Ce = 1.2
        7. Borehole Diameter,                                         Cb= 1
        8. Sampling Method,                                          Cs= 1
        9. User request factor of safety (apply to CSR) ,   User= 1
           Plot one CSR curve (fs1=1)
        10. Use Curve Smoothing: Yes*
        * Recommended Options

        In-Situ Test Data:
```

Depth ft	SPT	gamma pcf	Fines %
0.00	27.00	131.00	55.00
2.00	28.00	131.00	56.00
5.00	31.00	131.00	47.00
10.00	18.00	130.00	80.00
15.00	32.00	137.00	78.00
20.00	23.00	129.00	56.00
25.00	28.00	136.00	77.00
30.00	28.00	129.00	66.00
35.00	57.00	127.00	15.00
40.00	48.00	136.00	57.00

45.00	40.00	136.00	59.00
50.00	83.00	135.00	71.00

Output Results:
Settlement of Saturated Sands=0.00 in.
Settlement of Unsaturated Sands=0.02 in.
Total Settlement of Saturated and Unsaturated Sands=0.02 in.
Differential Settlement=0.008 to 0.010 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	S_all in.
0.00	2.65	0.37	5.00	0.00	0.02	0.02
2.00	2.65	0.37	5.00	0.00	0.01	0.01
4.00	2.65	0.36	5.00	0.00	0.01	0.01
6.00	2.65	0.36	5.00	0.00	0.01	0.01
8.00	2.65	0.36	5.00	0.00	0.00	0.00
10.00	2.65	0.38	5.00	0.00	0.00	0.00
12.00	2.65	0.41	5.00	0.00	0.00	0.00
14.00	2.65	0.43	5.00	0.00	0.00	0.00
16.00	2.65	0.45	5.00	0.00	0.00	0.00
18.00	2.65	0.46	5.00	0.00	0.00	0.00
20.00	2.65	0.47	5.00	0.00	0.00	0.00
22.00	2.65	0.48	5.00	0.00	0.00	0.00
24.00	2.65	0.49	5.00	0.00	0.00	0.00
26.00	2.64	0.50	5.00	0.00	0.00	0.00
28.00	2.61	0.50	5.00	0.00	0.00	0.00
30.00	2.58	0.51	5.00	0.00	0.00	0.00
32.00	2.55	0.51	5.00	0.00	0.00	0.00
34.00	2.52	0.51	4.97	0.00	0.00	0.00
36.00	2.49	0.50	4.95	0.00	0.00	0.00
38.00	2.46	0.50	4.94	0.00	0.00	0.00
40.00	2.43	0.49	4.93	0.00	0.00	0.00
42.00	2.40	0.49	4.94	0.00	0.00	0.00
44.00	2.37	0.48	4.94	0.00	0.00	0.00
46.00	2.35	0.47	4.96	0.00	0.00	0.00
48.00	2.32	0.47	4.98	0.00	0.00	0.00
50.00	2.30	0.46	5.00	0.00	0.00	0.00

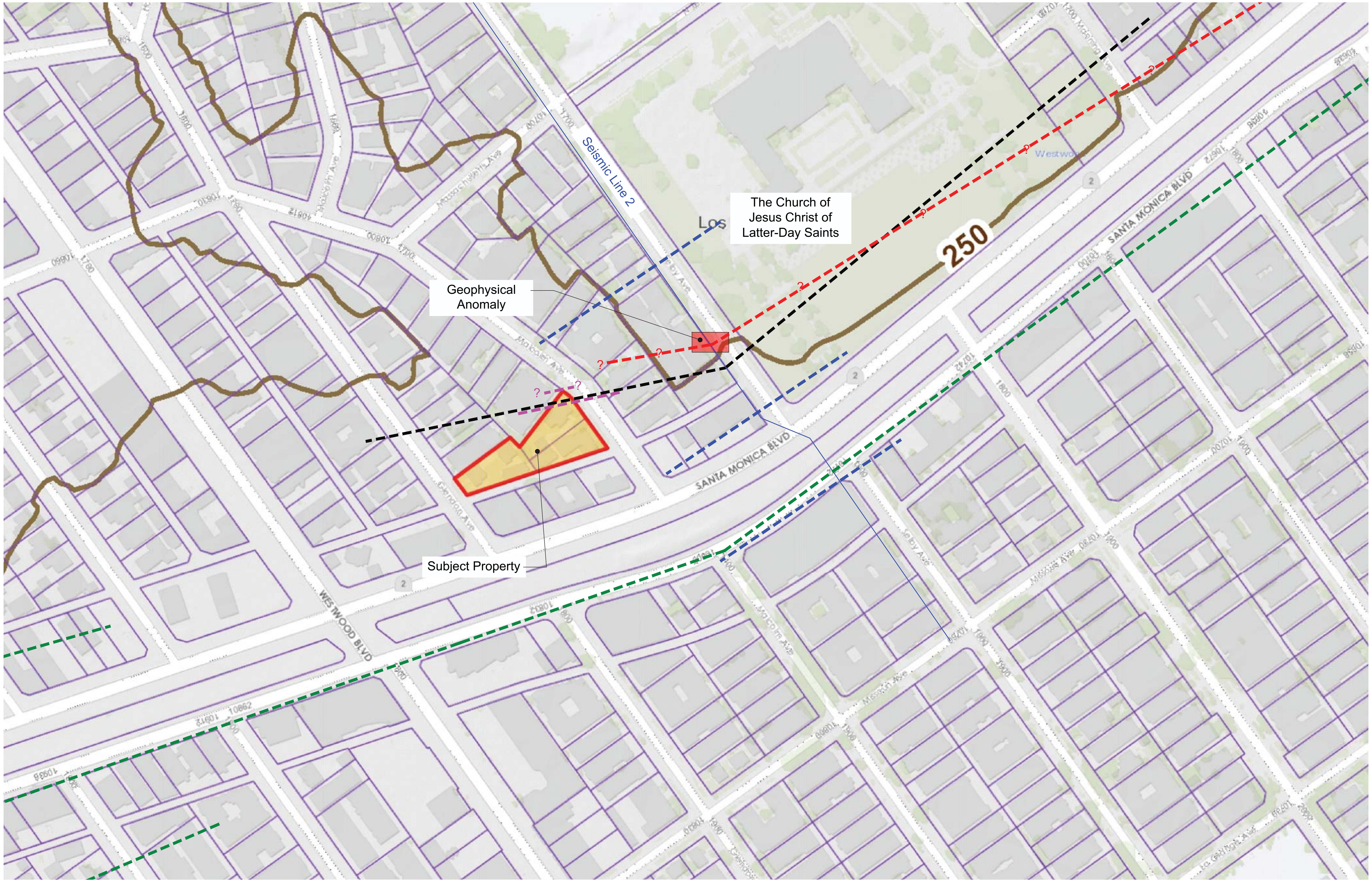
* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

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

---

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

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



= Fault Location (AES, 2015, Based on Site-specific Investigation)
= Approximate Location of Fault Trace, Navigate LA, & Bryant, 2005
= Inferred Trace of Santa Monica Fault Shown Based on Preliminary Geophysical Data & Interpretation of Geomorphology, Parsons 2011 Metro Fault Study Report
= Fault, Mactec, 2010; Kenney Geomorphic Map
= Fault, Miles Kenney Geo Maps

N

Scale: 1" = 100'

REGIONAL FAULT MAP		PROJECT No: 15-363-26	
DESCRIPTION:	Proposed Multifamily Building	DATE:	07 / 22 / 2015
FOR:	Sinanian Development Inc.	DRAWN BY:	VM
ADDRESS:	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024	CHECKED BY:	SM
Applied Earth Sciences	GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS www.aessoil.com (818) 552-6000	DRAWING No:	1

U:\VINCE\2015\-M-\1730 MALCOLM AVENUE-FAULT STUDY\DRAWING 1-REGIONAL FAULT MAP.dwg, 7/22/2015 11:04:30 AM

LEGEND

Qa = Recent Alluvium

Qsp = Sag Pond Deposits

CPT-13 = Approximate Location of CPT Sounding (Approx. every 20')

B-3 = Approximate Location of Continuous Core Drilling

B-7 = Approximate Location of Geotechnical Boring

= Area of Work :
1- Excavation Permit
2- Street Use Permit
3- Traffic Control Plan
4- Encroachment Permit

= Area of Work Within Private Property

= Fault Location (Based on Navigate LA)

= Fault Location (AES, 2015, Based on Site-specific Investigation)

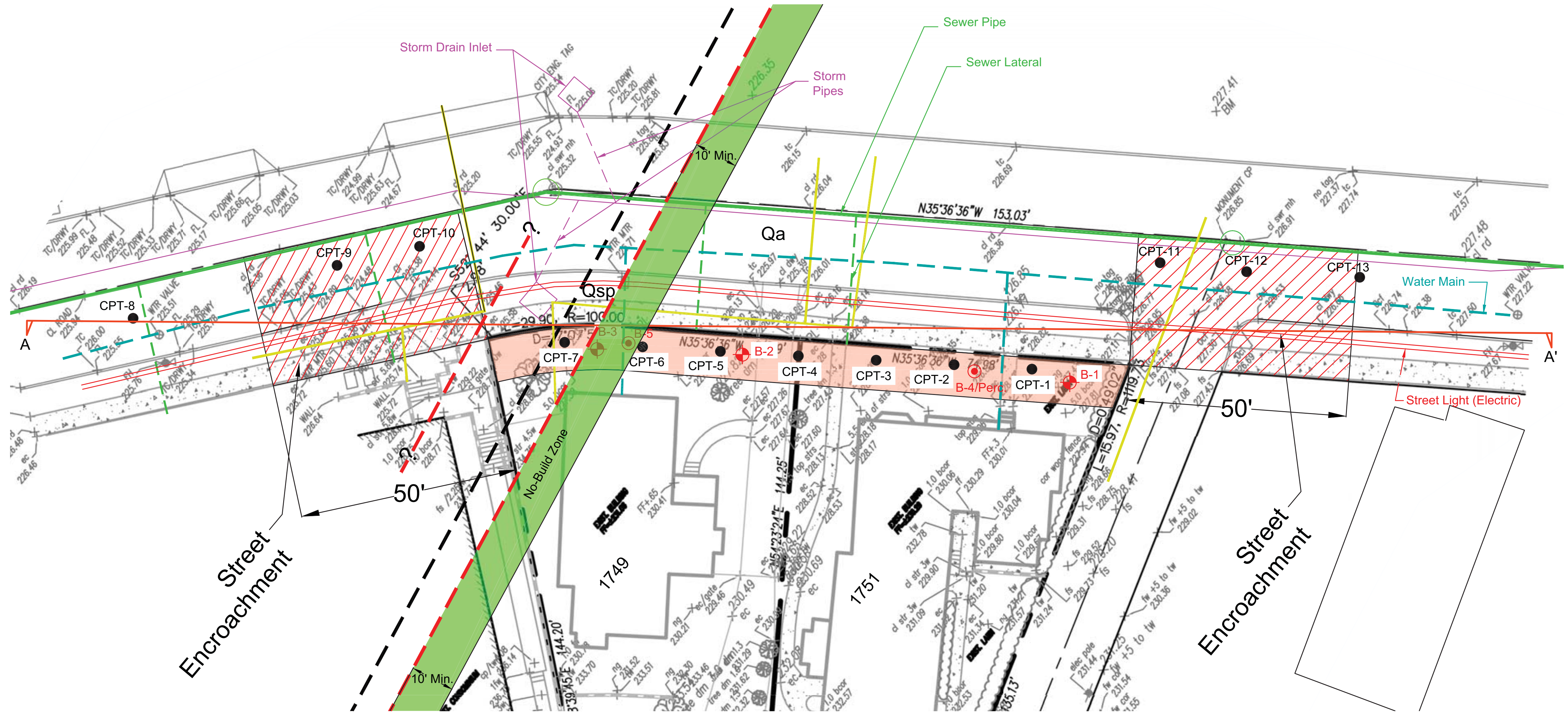
= Area of No-Build Zone

= Sewer Pipe & Lateral (By Navigate LA)

= Storm Drain Inlet & Pipes (By Navigate LA)

= Gas Line (By Field Mapping & Dig Alert)

= Water Line (By Field Mapping & Dig Alert)



N

Scale: 1" = 20'

GEOLOGIC MAP & FAULT STUDY PLAN		PROJECT No: 15-363-26
DESCRIPTION:	Proposed Multifamily Building	DATE: 07 / 22 / 2015
FOR:	Sinanian Development Inc.	DRAWN BY: VM
ADDRESS:	1749 & 1751 Malcolm Avenue, Los Angeles, CA 90024	CHECKED BY: SM
Applied Earth Sciences	GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS www.aessoil.com (818) 552-6000	DRAWING No: 2

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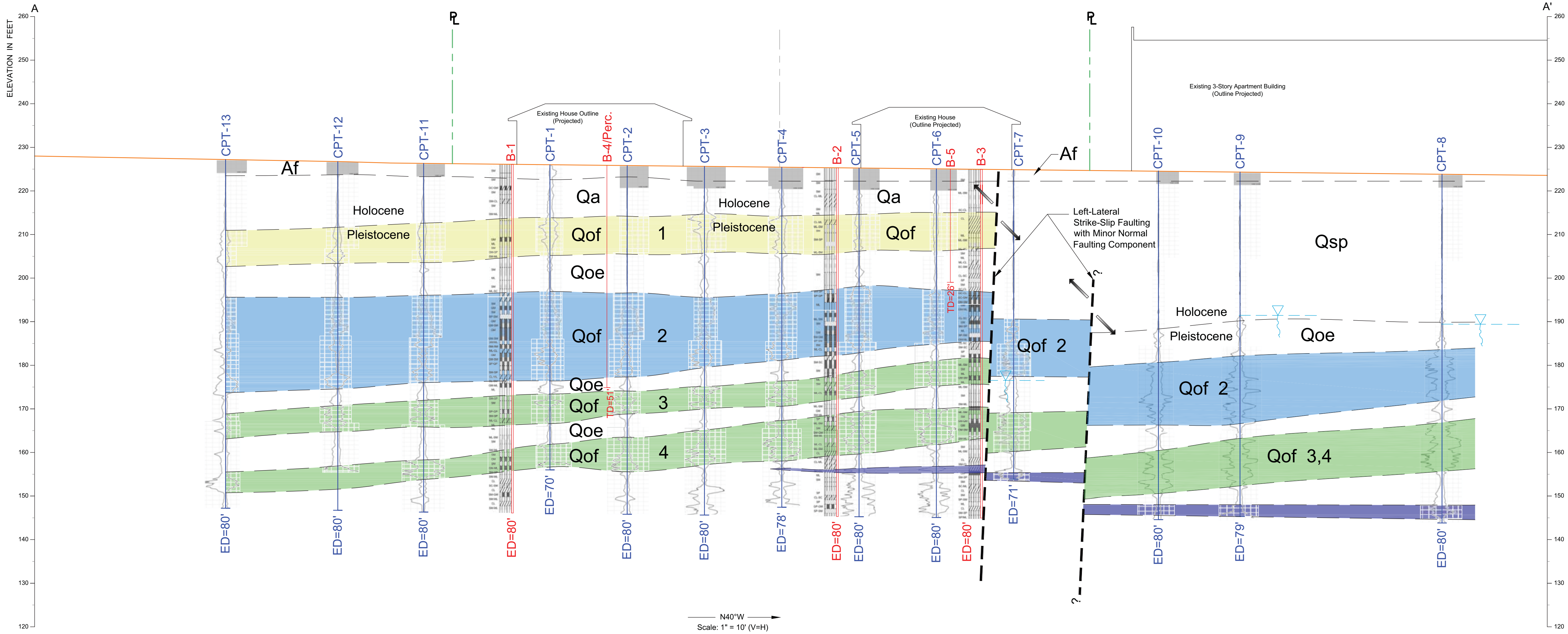


LEGEND

Holocene
- Af = Surficial Fill
- Qa = Recent Alluvium
- Qsp = Sag Pond Deposits

Pleistocene
- Qof = Older Fluvial & Alluvial Deposits
- Qoe = Older Estuarine Deposits

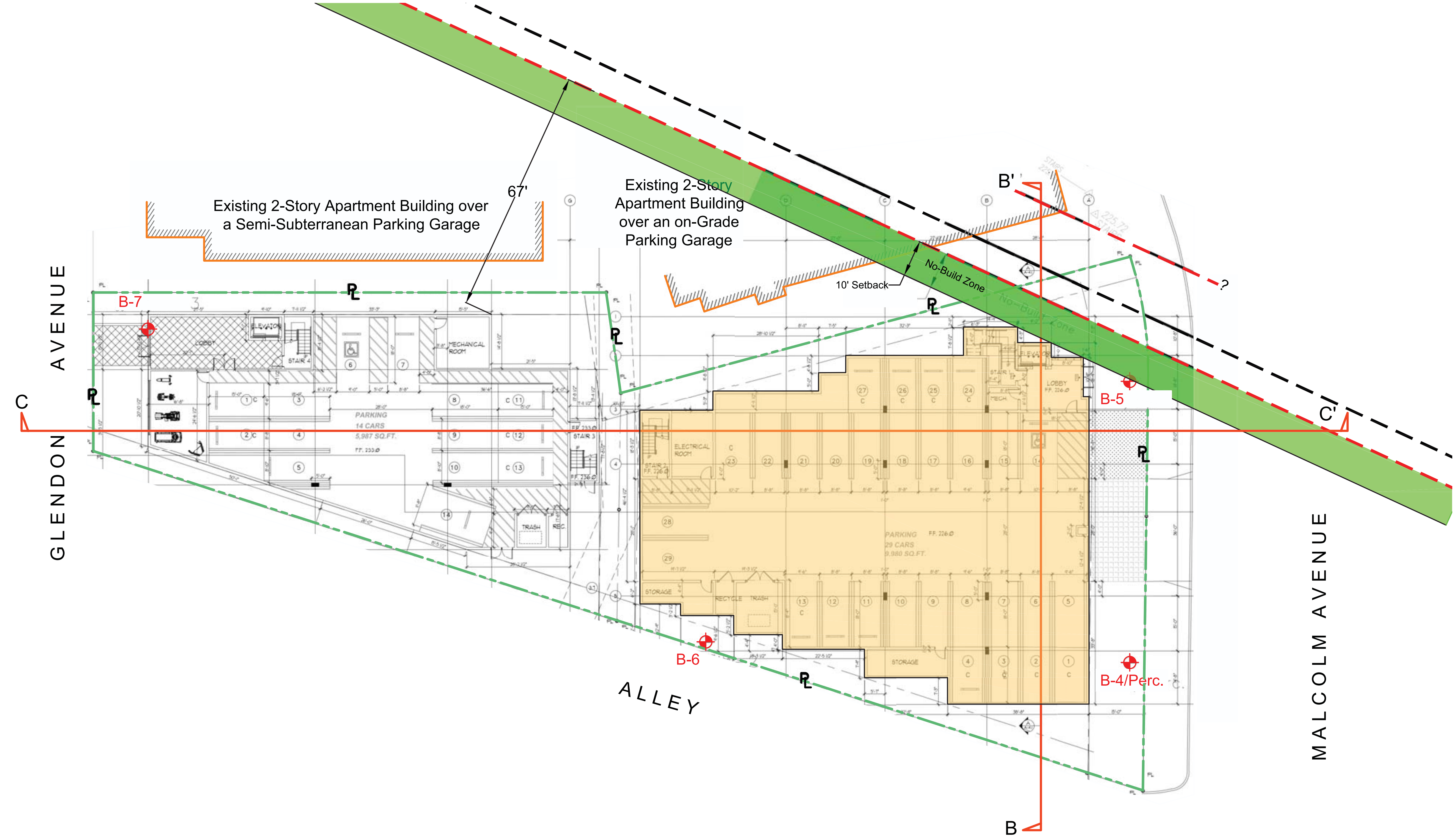
CPT-10 ... ED=80' = Approximate Location of Proposed CPT Sounding (Approx. every 20', Estimated Depth=80')

B-3 ... ED=80' = Approximate Location of Proposed Continuous Core Drilling (Estimated Depth=80')

B-7 ... TD=10' Location of Geotechnical Boring

= Location of Faults, Based on Subsurface Exploration (AES, 2015)

GEOLOGIC CROSS SECTION A-A'		PROJECT No: 15-363-26
DESCRIPTION:	Proposed Multifamily Building	DATE: 07 / 22 / 2015
FOR:	Sinanian Development Inc.	DRAWN BY: VM
ADDRESS:	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024	CHECKED BY: SM
Applied Earth Sciences	GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS www.aessoil.com (818) 552-6000	DRAWING No: 3



LEGEND:

B-7 = Location & Number of Geotechnical Boring

= Fault Location (Based on Navigate LA)

= Fault Location (AES, 2015, Based on Site-specific Investigation)

= Area of No-Build Zone

= Area of 2' Mat Foundatiom

GEOTECHNICAL SITE PLAN

DESCRIPTION:	Proposed Multifamily Residential Building Project
FOR:	Sinanian Development Inc.
ADDRESS:	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024

PROJECT No:	15-363-02
DATE:	07 / 22 / 2015
DRAWN BY:	VM
CHECKED BY:	CM
DRAWING No:	4

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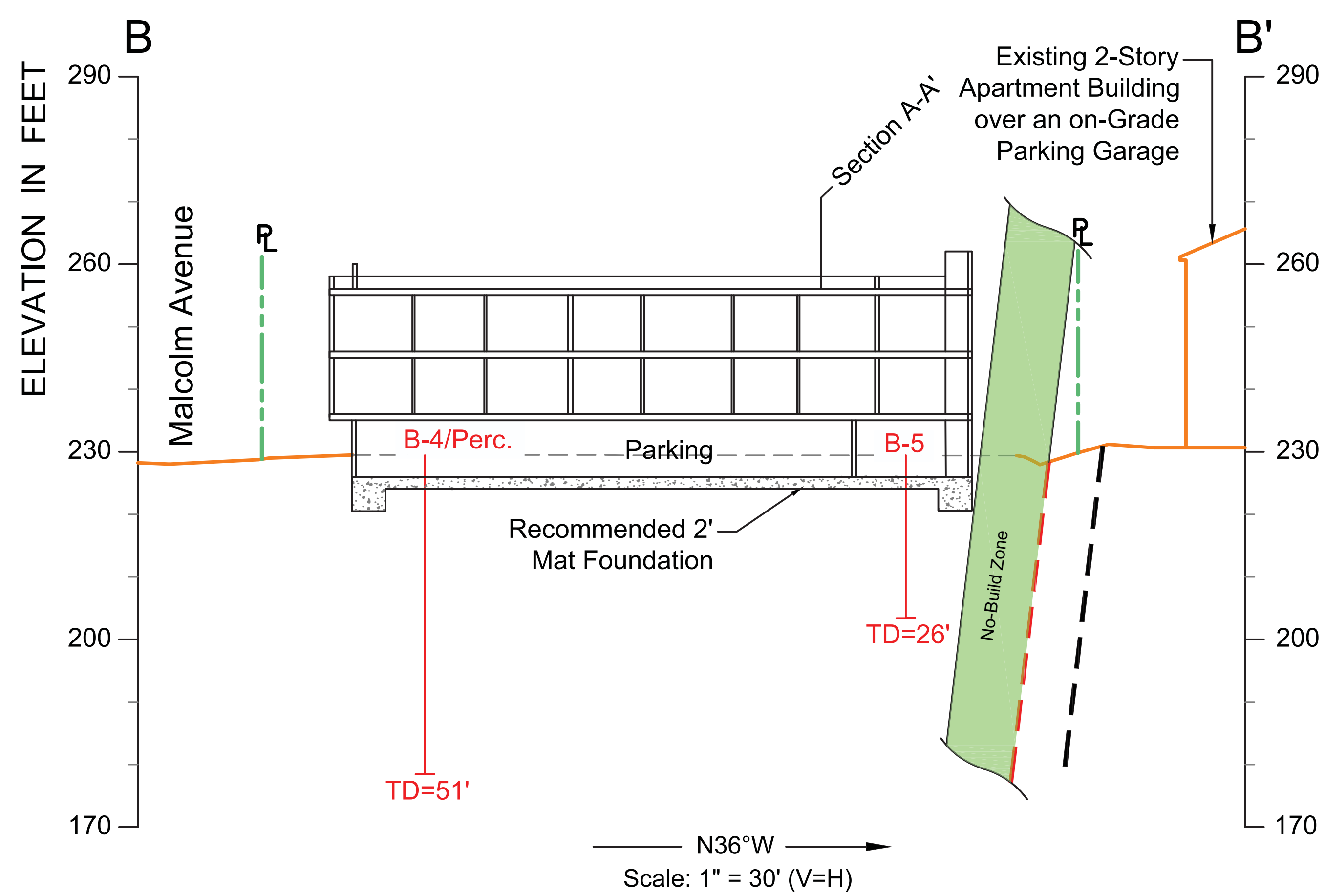
U:\VINCE\2015\-M-\1730 MALCOLM AVENUE-FAULT STUDY\DRAWING 4 TO 6-GEOTECHNICAL SITE PLAN & SECTIONS B-B' & C-C'.dwg, 7/22/2015 11:21:04 AM



LEGEND:

B-4 / TD=10' (Projected) = Location & Number of Boring

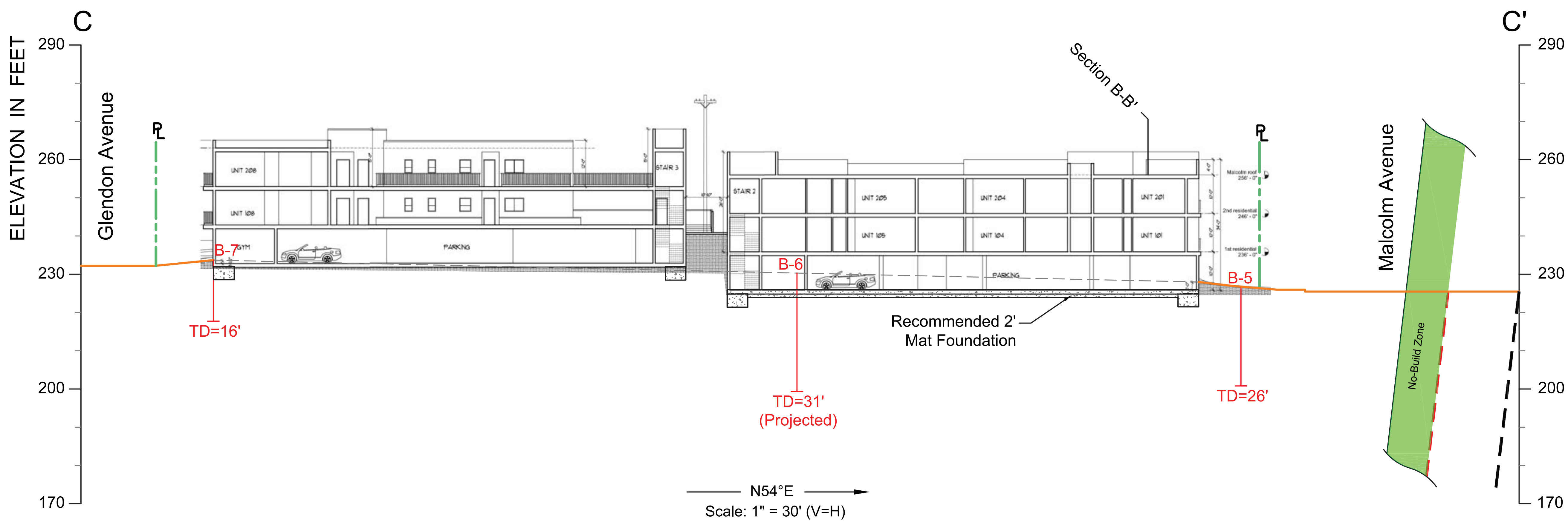
= Fault Location (Based on Navigate LA)

= Fault Location (AES, 2015, Based on Site-specific Investigation)

= Area of No-Build Zone

GEOTECHNICAL CROSS SECTIONS B-B'

DESCRIPTION:	Proposed Multifamily Residential Building Project	PROJECT No:	15-363-02
		DATE:	07 / 22 / 2015
FOR:	Sinanian Development Inc.	DRAWN BY:	VM
ADDRESS:	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024	CHECKED BY:	CM
Applied Earth Sciences	GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS www.aessoil.com (818) 552-6000	DRAWING No:	5



LEGEND:

B-4 TD=10' (Projected) = Location & Number of Boring

= Fault Location (Based on Navigate LA)

= Fault Location (AES, 2015, Based on Site-specific Investigation)

= Area of No-Build Zone

GEOTECHNICAL CROSS SECTIONS C-C'

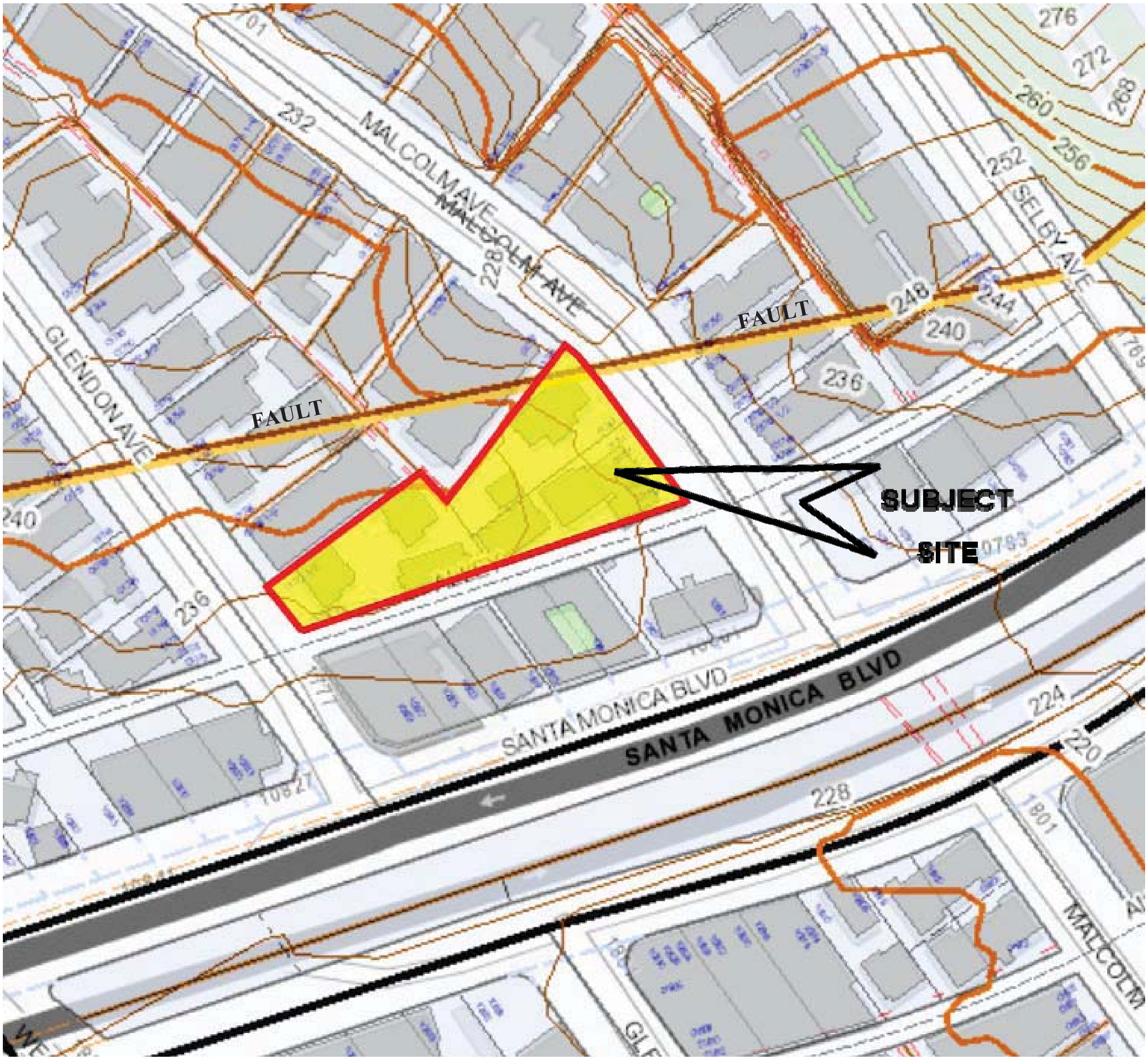
DESCRIPTION:	Proposed Multifamily Residential Building Project	PROJECT No:	15-363-02
FOR:	Sinanian Development Inc.	DATE:	07 / 22 / 2015
ADDRESS:	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024	DRAWN BY:	VM
		CHECKED BY:	CM
Applied Earth Sciences	GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS www.aessoil.com (818) 552-6000	DRAWING No:	6

Reference: Portion of Google Maps

SITE VICINITY MAP

Proposed Multifamily Residential Building Project	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024

FOR Sinanian Development, Inc.	DATE 07 / 22 / 2015	PROJECT No. 15-363-26
APPLIED EARTH SCIENCES GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS		FIGURE No. 1

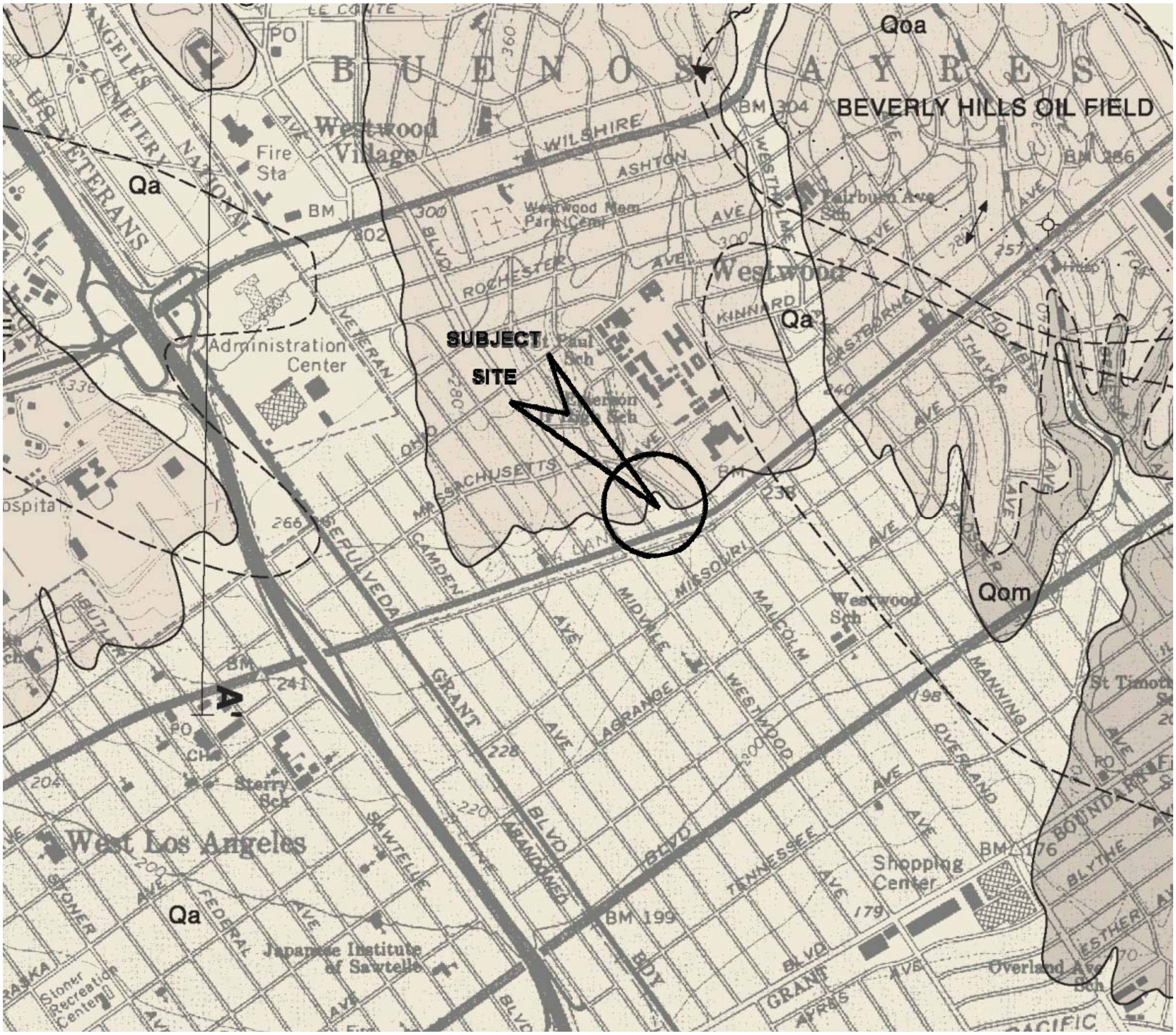


Scale 1" = 100'
Reference: Navigate LA Los Angeles City

REGIONAL TOPOGRAPHIC MAP

Proposed Multifamily Residential Building Project	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024

FOR Sinanian Development, Inc.	DATE 07 / 22 / 2015	PROJECT No. 15-363-26
APPLIED EARTH SCIENCES GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS		FIGURE No. 2



***Qa** Alluvial gravel, sand and silt-clay, derived mostly from Santa Monica Mountains; includes gravel and sand of stream channels*

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

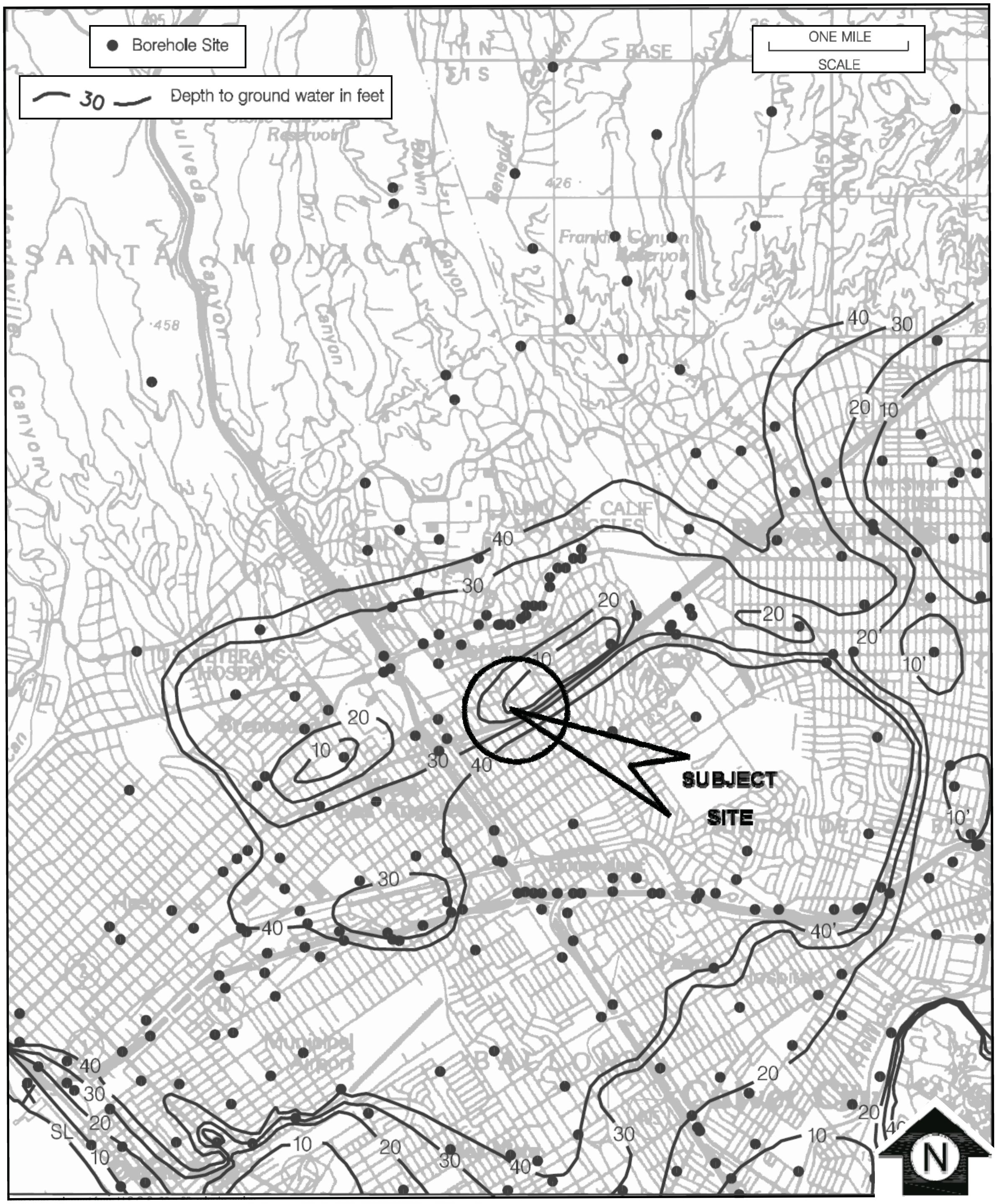
Reference: Dibblee Geologic Map of the Beverly Hills 7.5 Minute Quadrangle

REGIONAL GEOLOGIC MAP

Proposed Multifamily Residential Building Project

1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024

FOR	DATE	PROJECT No.
Sinanian Development, Inc.	07 / 22 / 2015	15-363-26
APPLIED EARTH SCIENCES GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS		FIGURE No. 3



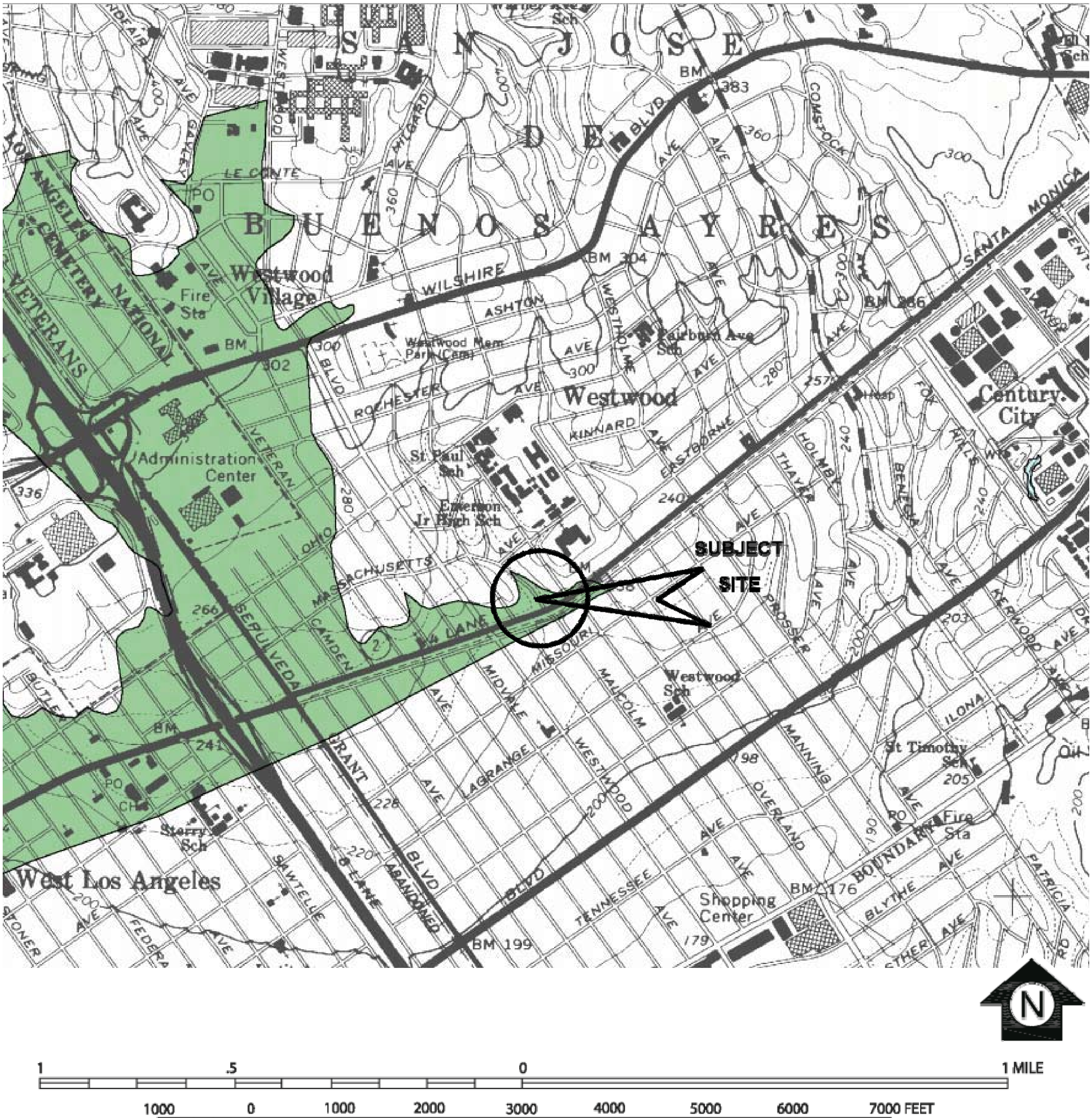
Reference: Beverly Hills 7.5 Minute Quadrangle

HISTORICALLY HIGHEST GROUNDWATER (Contour Map)

Proposed Multifamily Residential Building Project	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024

FOR	DATE	PROJECT No.
Sinanian Development, Inc.	07 / 22 / 2015	15-363-26

APPLIED EARTH SCIENCES GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS	FIGURE No. 4

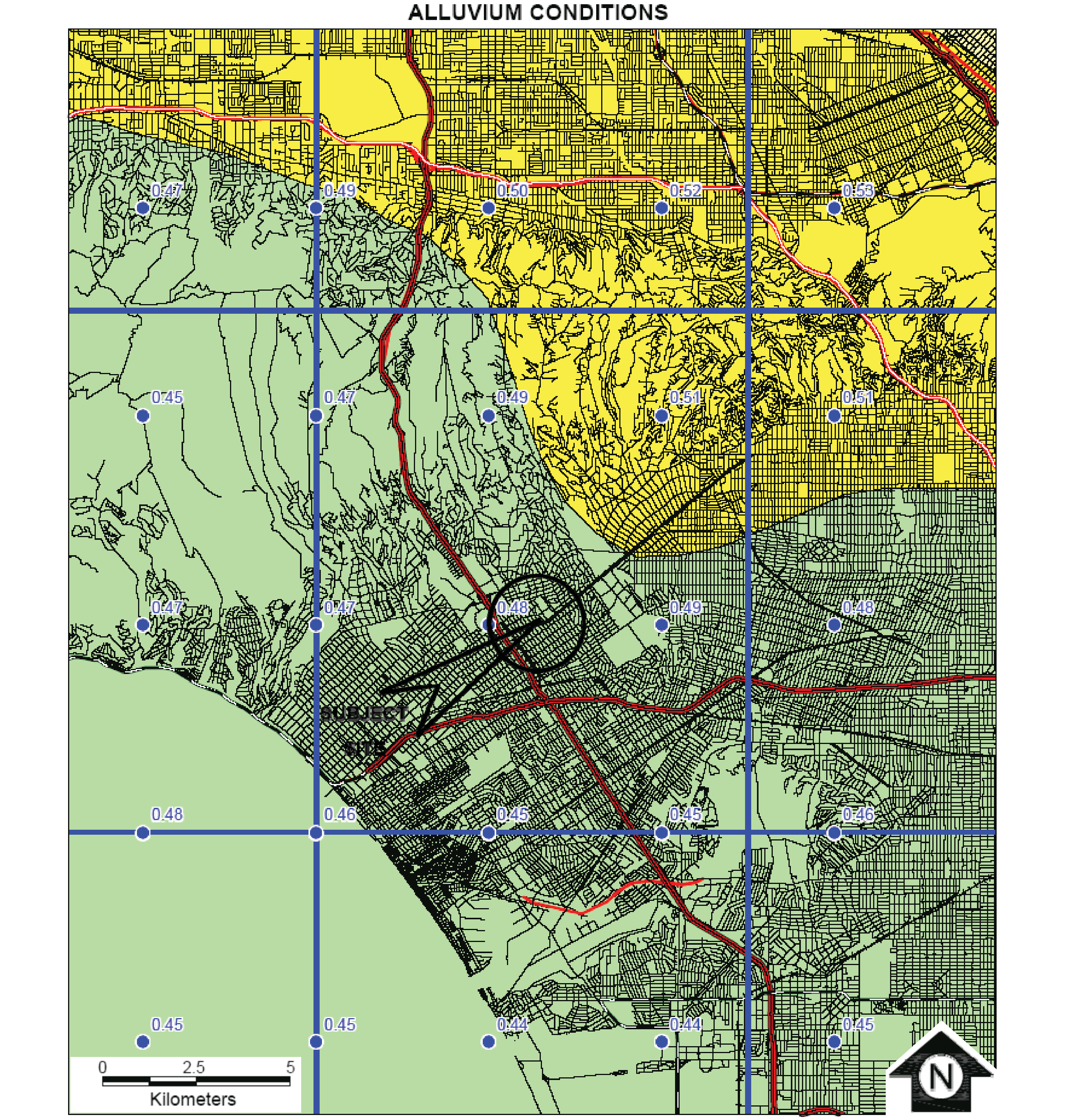


Reference: Portion of Seismic Hazard Zone Map of The Beverly Hills Quadrangle

SEISMIC HAZARD ZONES MAP

Proposed Multifamily Residential Building Project	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024

FOR Sinanian Development, Inc.	DATE 07 / 22 / 2015	PROJECT No. 15-363-26
APPLIED EARTH SCIENCES GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS		FIGURE No. 5



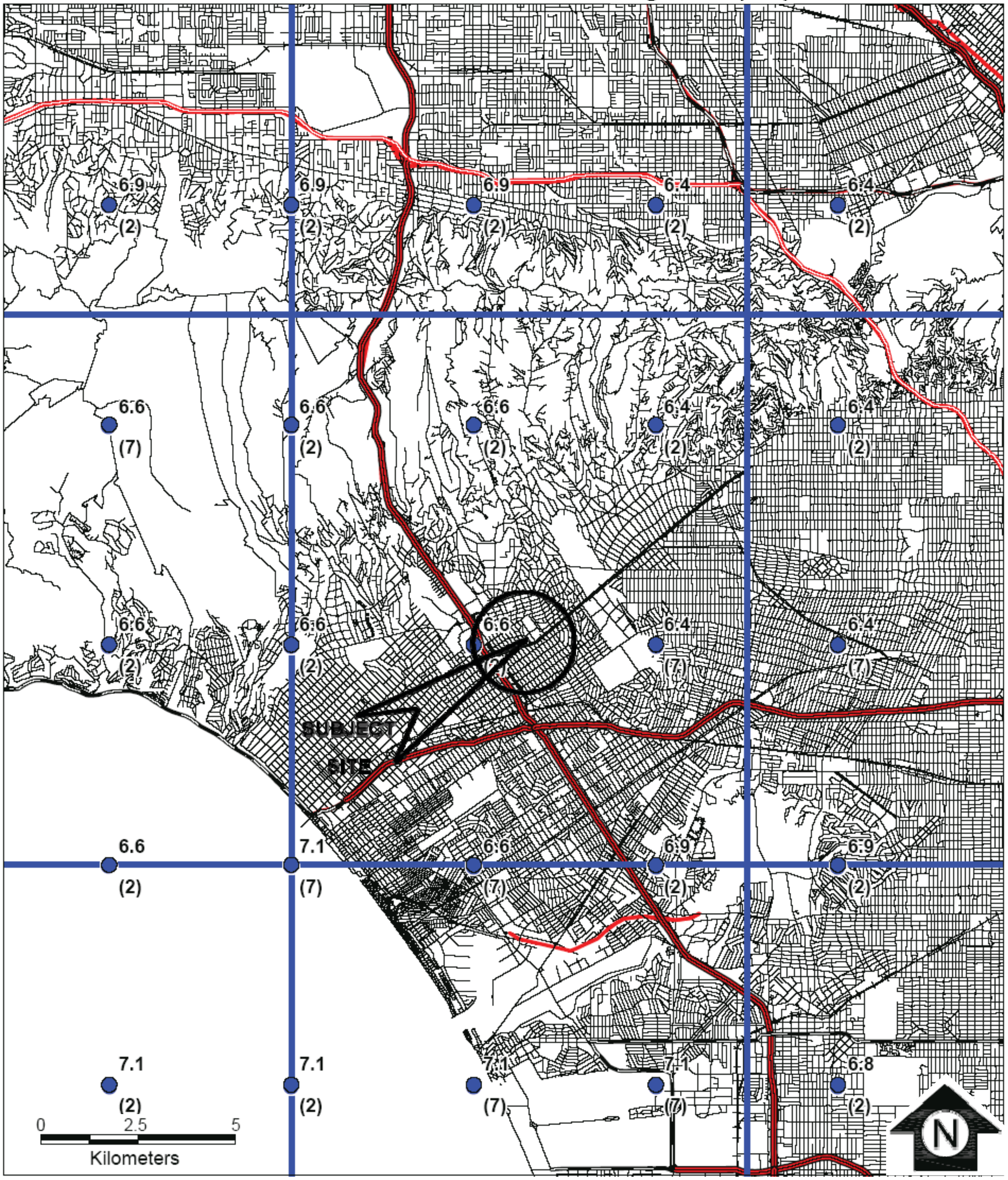
Reference: Beverly Hills 7.5 Minute Quadrangle

SEISMIC HAZARD MAP (Alluvium Conditions)

Proposed Multifamily Residential Building Project	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024
FOR Sinanian Development, Inc.	DATE 07 / 22 / 2015
PROJECT No. 15-363-26	FIGURE No. 6

APPLIED EARTH SCIENCES
GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS

PREDOMINANT EARTHQUAKE Magnitude (Mw)



Reference: Beverly Hills 7.5 Minute Quadrangle

SEISMIC HAZARD MAP (Predominant Earthquake)

Proposed Multifamily Residential Building Project	1749 & 1751 Malcolm Ave. & 1772 Glendon Ave., Los Angeles, CA 90024

FOR	DATE	PROJECT No.
Sinanian Development, Inc.	07 / 22 / 2015	15-363-26
APPLIED EARTH SCIENCES GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS		FIGURE No. 7

APPENDIX I

METHOD OF FIELD EXPLORATION

In order to define subsurface conditions, a total of twenty borings were advanced on and offsite. Three of the sixteen borings were advanced using a CME 75 hollow stem drilling rig specially fitted to obtain continuous core samples to a maximum depth of 80 feet. Thirteen of the borings are cone penetrometer soundings advanced using a 30-ton CPT rig to a maximum depth of 80 feet. Finally, four geotechnical borings were advanced with a conventional CME 75 hollow stem auger rig to obtain geotechnical samples for testing. The approximate locations of all of the drilled borings and CPT soundings are shown in the enclosed Geologic Map and Fault Study Plan – Drawing No. 2; geotechnical borings only are shown on the Geotechnical Site Plan – Drawing No. 4.

With the hollow-stem drilling, relatively undisturbed continuous and discrete samples of the subsoils were obtained using a split-tube sampler, to a maximum depth of 80 feet. Some of the samples expanded up to 10 percent of the drilled depth.

Logs of the subsurface materials, as encountered in the borings, were recorded in the field and are presented in Figure Nos. I-1.1 through I-7 within Appendix I.

A brief report prepared by Kehoe Testing and Engineering describing the cone penetrometer testing is also included in this Appendix I and attached to following the boring logs.

Field investigation for this project was conducted from April 21 through May 12, 2015 for the fault study and June 15, 2015 for the geotechnical study. The material excavated from the borings was placed back and tamped/compacted upon completion of the field work. Such material may settle. The owner should periodically inspect these areas and notify this office if the settlement creates a hazard to persons or property.

BORING No. 1

DATE EXCAVATED: 4/23/15. Hole Diameter: 8”. Ground Elevation: ~227’. **LOGGED BY: S, Minas, EG**

DEPTH IN FEET	ELEVATION.		CORE RECOVERY	BOX NO.	MATERIAL TYPE	MATERIAL SYMBOL	MATERIAL DESCRIPTION
							Earth Cover. Upper 5’ Hand Auger for Utilities
			0		SM		**Fill:** Af 0-3’, mixture of sand (SM) and silt, scattered debris, firm, moist, medium brown, topsoil
		7.5YR			SM		**Recent Alluvium (Qa)** @3’ Native soil, silty sand, firm, fine-grained, trace clayey, little to no gravel.
5	222	3/3		1			
					GC-GM		@6’ clayey to silty gravel, sandy, 6” horizon,
		7.5YR	80		SM		@6.5’ grades back to silty fine to very fine sand, scattered fine gravel
		4/2					
		10YR			SM-CL		@9’ grades to more clayey
10	217	4/3			SM		@10’ very fine to fine sand, silty,
							Older Alluvial and Fluvial Deposits (Qof)
		7.5YR	90		SM-ML		And interfingered **Older Estuarine Deposits (Qoe)**
		4/3					Change to fine sand/silt mixture, slightly clayey, trace gravel Brown to yellowish brown, uniform, homogeneous,
15	212			2			
							@16’ buff-colored horizon, grades to siltier, tight, moist
			90				
					GM		@18’ grades to more gravelly, subangular gravel to 3/4”
		7.5YR			ML		6” layer. Back to Silt at 18.5’, brown, sandy
20	207	5/4			SM		@20’ silty sand, grades to less silt, relatively clean sand
		10YR			SM-SP		Light yellowish brown, fine to medium-grained sand
		6/4	98		SM-ML		@22’ grades to siltier, tight, stiff, slightly clayey, brown
							@23’ grades to sand, fine-grained, silty, no gravel
25	202			3	SM		@26’ softer zone, continued sand
		10YR					@27’3” grades to silty, yellowish brown
		5/4	89		ML		
					SM		Sand-silt mixture from 22’ thru 34’
30	197	7.5YR			ML-SC		@31’ stiff, fine sand, silt and clay mixture
		6/8					
		7.5YR			SM		@33’ silty fine sand with scattered slate gravel, subangular up to 1.5”, moist.
		5/4	80				

LOG OF BORING

JOB NAME: Fault Study, 1749-51 Malcolm Avenue, LA. JOB No. 15-363-26

APPLIED EARTH SCIENCES
GEOTECHNICAL ENGINEERING CONSULTANTS

FIGURE NO : I-1.1

BORING No. 1 cont'd

DATE EXCAVATED: 4/23/15. Hole Diameter: 8". Ground Elevation: ~227'. **LOGGED BY: S, Minas, EG**

DEPTH IN FEET	ELEVATION.		CORE RECOVERY	BOX NO.	MATERIAL TYPE	MATERIAL SYMBOL	MATERIAL DESCRIPTION
		7.5YR			ML-SC		@31' stiff, fine-sand, silt and clay mixture
		6/8	80				
		7.5YR			SM		@33' silty fine sand with scattered slate gravel up to 1.5",
		5/4			GM		moist
							NR from 34' to 35' Driller: change to dense gravel
35	192			4	SM		Abrupt change to gravel, silty, mixed gray, brown
		7.5YR			SP-SM		Grades to sand
							Older Fluvial Deposits (Qof)
		6/3	83		GM		Relatively clean, little silt, scattered gravel
					GM-SM		Prominent gravel marker layer, gravel and coarse sand,
		10YR			GM		slightly silty,
40	187	5/3					
							Interbedded sand and gravel, dense to very dense, slightly
					GM-SM		silty, trace clayey. NR from 39'2" to 40'
			80		SM/ML		
							Gravel/sand mixture continued to 41'
		10YR			GM-SM		@41'3" grades to sand, siltier at 42', very moist, slightly clayey,
		5/4			ML-CL		Interbdd silt, gravel-sand sequence. @44' soft,
45	182			5	GM		silt-clay
							Soft horizon lost during sampling (driller)
					GM-SM		@45' 9" conspicuous gravel lens, blackish blue, 1.5" thick
		7.5YR	99		SP-GP		@46' sand, silty, orange brown, fine to medium grained
		6/6					@47'3" Orange to reddish yellow, illuviated zone, sand-gravel,
							little to no silt. Oxidized sand-gravel
					SM-SP		@48'6" change to bluish gray silty sand, very moist,
50	177				CL-ML		@49' grayish blue SP sand, medium-grained, fining
							downward sequence.
					CL-SM		Change to clay-silt @50'. Scattered gravel, interbdd sand
		7.5YR	98		GM-ML		horizons,
		3/2			ML		Grades to gravelly at 52'. Good recovery of core sample.
		7.5YR					@52'2" grades to silt, clean, tight, dense, sandy, slightly
							clayey, scattered fine gravel.
55	172	4/4		6	SM-SP		
					SM		@55' sand, scattered gravel,
							Grades to siltier,
		7.5YR	98				
		4/4			SP-GP		
					SM-SP		Sharp change to clean sand and gravel, little to no fines.
							Another fining downward sequence.
60	167				ML-CL		
					ML		Grades to silty sandy clay at bottom of sample.
			99				Stiff silt, brown to grayish brown, very moist.
							Good recovery

LOG OF BORING

JOB NAME: Fault Study, 1749-51 Malcolm Ave. JOB No. 15-363-26

APPLIED EARTH SCIENCES
GEOTECHNICAL ENGINEERING CONSULTANTS

FIGURE NO : I-1.2

BORING No. 1 cont'd

DATE EXCAVATED: 4/23/15. Hole Diameter: 8". Ground Elevation: ~227'. **LOGGED BY: S, Minas, EG**

DEPTH IN FEET	ELEVATION.		CORE RECOVERY	BOX NO.	MATERIAL TYPE	MATERIAL DESCRIPTION
		7.5YR			ML	Stiff silt, brown to grayish brown, very moist.
		5/4	99			Good recovery
					ML-SM	This five foot section is fairly uniform, ML-SM sandy silt to silty fine sand, slightly clayey, scattered gravel from 63' - 64'9"
					SM	
65	162			7		
					SM-ML	@65'9" grades to more silty, brown with blackish grey.
			100		SM	Silty, very fine to fine sand,
					GM	Gravelly horizon @ 68'3", 2" thick
					SM	Back to silty sand, moist to very moist, brown,
70	157	10YR			GM-ML	2" gravel band in sandy silt material.
		5/3			SM-SP	@70' sand, slightly silty to relatively clean sand, medium grained, scattered slate gravel. Grades to silty fine sand, very moist, slightly clayey
		7.5YR	99		SM-ML	
		5/4			CL	Grades to clay, silty and sandy, very moist, tight, grey to greyish brown
					SC-SM	
75	152			8	CL	@75' sandy clay, very moist
					SM-GM	
		10YR	98		SM-ML	@76'3" change to silty sand, grades to silty gravel @ 76'8"
		5/3			CL	@77'2" grades to sandy silt Interbedded clay layers in 10' thick silt-sand horizon
					SM-ML	
80	147					
						End of Boring at 80'. No Caving. No standing groundwater detected during drilling.

LOG OF BORING

JOB NAME: Fault Study, 1749-51 Malcolm Ave. JOB No. 15-363-26

APPLIED EARTH SCIENCES
GEOTECHNICAL ENGINEERING CONSULTANTS

FIGURE NO : I-1.3

BORING No. 2

DATE EXCAVATED: 4/23/15. Hole Diameter: 8”. Ground Elevation: ~227’. **LOGGED BY: S, Minas, EG**

DEPTH IN FEET	ELEVATION.		CORE RECOVERY	BOX NO.	MATERIAL TYPE	MATERIAL SYMBOL	MATERIAL DESCRIPTION
			0		SM		**Earth Cover. Upper 5’ Hand Auger for Utilities** **Fill:** Af 0-3’, mixture of sand (SM) and silt, scattered debris, firm, moist, medium brown, topsoil
					SM		**Recent Alluvium (Qa)** @3’ Native soil, silty sand, firm, fine-grained, trace clayey, little to no gravel.
5	222			1			
					SM		Medium brown silty sand,
		7.5YR 5/3	80		CL-ML		Change to silty clay, blackish brown to light greyish brown
		7.5YR					Dark brown silty sand
10	217	3/2			SM		**Older Alluvial and Fluvial Deposits (Qof)**
					ML		**And interbedded Older Estuarine Deposits (Qoe)** Change to fine sand/silt mixture, slightly clayey, trace gravel
			90				Brown to yellowish brown, uniform, homogeneous,
					CL-ML		
					ML-SM		Grades to orange brown @14’ NR from 14’6” to 15’
15	212			2	SM		
							Grades to silty medium sand, orange brown, scattered gravel.
		7.5YR 7/8	98		SM-SP		Slightly less silty, relatively clean medium sand, slightly moist, medium dense, slightly gravelly. Good recovery
20	207				ML-SM		Sandy silt to silty fine to very fine sand horizon, relatively homogeneous, slightly clayey,
		7.5YR 7/8	98				Reddish brown, scattered fine gravel, trace clay.
25	202			3	SM		Very fine sand, silty, slightly oxidized, orange @25’ coarsening downward sequence.
			89				Slightly less silt, grades to clean sand, with some silt, fining upward.
		7.5YR 7/6					@29’ gravelly
					SM-SP		
30	197				SP-GP		
							@31’ NR below 31’ 3”. Driller says material very soft, likely a clayey silt
					ML		
			25				

LOG OF BORING

JOB NAME: Fault Study, 1749-51 Malcolm Avenue, LA. JOB No. 15-363-26

APPLIED EARTH SCIENCES
GEOTECHNICAL ENGINEERING CONSULTANTS

FIGURE NO : I-2.1

BORING No. 2 cont'd

DATE EXCAVATED: 4/23/15. Hole Diameter: 8". Ground Elevation: ~227'. **LOGGED BY: S, Minas, EG**

DEPTH IN FEET	ELEVATION.		CORE RECOVERY	BOX NO.	MATERIAL TYPE	MATERIAL DESCRIPTION
					ML	From 31'3" to 35 no recovery, driller says "soft stuff"
			25			Likely a silt and clay mixture
35	192			4	ML-SM	@35' silt, soft to slightly firm, moist to very moist, sandy, scattered fine gravel.
					SM	@35'5" grades to SM
			83			**Older Fluvial Deposits (Qof)** @37' SM-ML fining downward, sequence, orange silt-sand
		10YR			GM	
		6/8			SM-GM	Gravel at 38'3" sandy silty gravel,
40	187				SP-SM	
						Grades to orange oxidized clean sand @39'6". Marker bed.
					SM	Abrupt change to silty fine sand layer, very moist to wet, soft,
		10YR	98		ML-CL	
		5/1				Change to silty clay @ 43' stiff, grey
						Grades to clayey silty sand @44'8"
45	182	5YR		5	SM-SC	Sand silt mixture with some clay, very mosit to wet, stiff
		4/4				Grades to sandier @47'2"
			100		SM	Scattered gravel
		10YR				Yellowish brown. Grades to sandy clayey silt with some gravel, mostly medium brown throughout.
		5/4			ML	Sand @50'4", coarsening downward scattered gravel.
50	177				SM	
		7.5YR				Grades to silty clay, stiff, very moist, grey-brown, slightly sandy to sandy, clay-silt mixture. Little to no gravel.
		6/6	98		ML-CL	
		5YR				Grades to sandy, reddish brown
55	172	4/3		6	ML-SM	3" gravel lens, subangular,
					GM	Change to sandy clayey silt,
			98		SM-ML	@57'10" conspicuous oxidized sand lens, orange, 3" thick
					SP	Uniform silt and fine sand mixture.
					ML-SM	Sandier
60	167	7.5YR			SM	Gravelly @61'
		6/6			SM-GM	Grades to silty, fine to medium sand, slightly clayey, medium brown
			99		SM-ML	

LOG OF BORING

JOB NAME: Fault Study, 1749-51 Malcolm Ave. JOB No. 15-363-26

APPLIED EARTH SCIENCES
GEOTECHNICAL ENGINEERING CONSULTANTS

FIGURE NO : I-2.2

BORING No. 2 cont'd

DATE EXCAVATED: 4/23/15. Hole Diameter: 8". Ground Elevation: ~227'. **LOGGED BY: S, Minas, EG**

DEPTH IN FEET	ELEVATION.		CORE RECOVERY	BOX NO.	MATERIAL TYPE	MATERIAL SYMBOL	MATERIAL DESCRIPTION
		10YR	99		SM-ML		Silty fine sand to sandy silt, scattered fine gravel, medium brown
		5/4					
					ML-CL		Interlayered silty sand and silty sandy clay horizons
65	162			7	ML-SM		
					CL		Grades to clay, wet, stiff,
			100		SM-SC		Clayey silty sand,
					CL-ML		Grades to more clayey @68'+
		10YR					Clay, sandy, stiff, olive brown,
70	157	6/4			SC-CL		
					ML		Clayey sandy silt from 71' - 73'
			99		SM		
		10YR					@73' grades to sandy, silty with scattered gravel, orange brown to brown.
		6/4					Clean sand lens, no silt, greyish brown, scattered fine gravel
75	152			8	SP		
					CL-SC		Grades to clayey sand, to sandy clay
		7.5YR	98		SP		Alternating sandy clay and clean sand horizons. Greyish orange clean sand.
		7/1			GP-GM		Gravel lens,
					SP-SM		Change to fine sand, slightly silty to silty, rust color
80	147						

End of Boring at 80'. No Caving. No standing groundwater detected during drilling.

LOG OF BORING

JOB NAME: Fault Study, 1749-51 Malcolm Ave. JOB No. 15-363-26

APPLIED EARTH SCIENCES
GEOTECHNICAL ENGINEERING CONSULTANTS

FIGURE NO : I-2.3

BORING No. 3

DATE EXCAVATED: 4/23/15. Hole Diameter: 8”. Ground Elevation: ~227’. **LOGGED BY: S, Minas, EG**

DEPTH IN FEET	ELEVATION.		CORE RECOVERY	BOX NO.	MATERIAL TYPE	MATERIAL SYMBOL	MATERIAL DESCRIPTION
							Earth Cover. Upper 5’ Hand Auger for Utilities
			0				**Fill:** Af 0-3’, mixture of sand (SM) and silt, scattered debris,
							firm, moist, blackish brown, topsoil
					SM		**Recent Alluvium (Qa)** @3’ Native soil, silt sand mixture,
							blackish brown to medium brown,
5	222			1			
		10YR			ML-SM		
		3/2	30				Poor recovery, sandy silt to silty sand, clayey, moist, tight.
							Older Alluvial and Fluvial Deposits (Qof)
							And Interbedded **Older Estuarine Deposits (Qoe)**
10	217				SC-CL		Blackish brown with slightly reddish tinge, clayey silty sand
							from 10’ to 10’8”
							Grades to sandy silty clay, very moist, stiff, slightly organic,
			100		CL		slightly gravelly, buff-colored fine gravel.
		2.5Y					
							Mostly uniform clay from 10’8” to 15’ depth, dark grey
		3/1					
15	212			2			
					ML		Change to sandy clayey silt, medium brown, with grey tint,
							slightly soft @15’ - 15’8” to increased sand content,
		5YR	98		ML-SM		very moist. Reddish brown at 17’
		5/3					
		10YR			ML-SC		Grades to stiff at 19’, brownish yellow
							Slightly clayey to clayey at 19’6”
20	207	6/6			SM		@20’ silty, fine to medium sand, mottled colors.
					ML		Grades to silt, sandy, firm to stiff
			98		ML-CL		Grades to more clayey @21’5”,
							Grades to more sandy,
					SC-SM		Reddish brown, slightly more silty
							Older Estuarine Deposits (Qoe)
							Sandy clay to clayey silty sand with scattered gravel,
25	202	7.5YR		3	CL-SC		brown to orange reddish tint, orange oxidized sandy lens
		4/2			SP		@25’10”
			97		SM		Grades to very moist, soft to firm,
					SC-CL		Clayey gravel horizon, 2” thick,
					GC-CL		Subrounded fine gravel in clay-sand matrix
30	197	7.5YR			GC-GM		Silty sandy gravel @30’, grades to coarser grained,
		4/4			GM-SM		Gravel horizon starting from 29’ to 33’, with various fines
							amounts
			95		GM		Alternating silty gravel and sandy silt horizons

LOG OF BORING

JOB NAME: Fault Study, 1749-51 Malcolm Avenue, LA. JOB No. 15-363-26

APPLIED EARTH SCIENCES
GEOTECHNICAL ENGINEERING CONSULTANTS

FIGURE NO : I-3.1

BORING No. 3 cont'd

DATE EXCAVATED: 4/23/15. Hole Diameter: 8". Ground Elevation: ~227'. **LOGGED BY: S, Minas, EG**

DEPTH IN FEET	ELEVATION.		CORE RECOVERY	BOX NO.	MATERIAL TYPE	MATERIAL SYMBOL	MATERIAL DESCRIPTION
					GM		
			25		GM-ML		Alternating silty gravel and sandy silt horizons
					CL-SC		Change to clay at 34', blackish clayey sand
35	192	7.5YR		4	GM		Gravel horizon @ 35'4" change to orange sand with scattered gravel.
		6/8			SM-SP		36'9" change to gray SP clean sand,
		5Y	98		ML		Change to silt @37'4", olive to gray
		5/2			SP-SM		Coarsening downward sequence, grades to silty sand and clean sand
		10Y			GM-ML		Gravel-silt and sand mixture. Greenish grey
40	187	3/2			CL-SC		Grades to clayey, change to silt-clay with fine sand.
					SM-SC		Dark grey silt-clay-sand mixture from 40' to 41'5"
		10YR	95		SP		Light orange sand lens @43'5" lamination 1cm to 2cm
		4/4			GM		Gravel zone @ 43'8", followed by light buff-colored sand lens at 43'10"
45	182			5	ML-SM		Change to dark grey silt-sand mixture,
							Grades to bluish gray, fine to very fine sand,
					SM		Very silty, scattered fine gravel, medium sand
			94		ML		Change to silt,
		5Y			GM-SM		Gravel and sand lens @47'2" to 47'7"
							Back to sandy gravelly silt, olive grey
		4/2			ML		
50	177				ML-SM		50' - 54' fine sand and silt mixture, trace clay, little to no gravel, very moist, dense, stiff, medium to dark grey
		2.5Y					
		4/3	95		SM		
							Fluvial Deposits (Qof)
					SM-ML		@54' grades to silty gravelly sand, orange brown to grey
55	172			6	GM		Blackish brown coarse gravel horizon in sand silt matrix
					ML-SM		@55'6" change to sand-silt, brown, orange red tinge,
							@57' sand, fine-grained, scattered gravel.
		7.5YR	96		SM		@57'10" 2cm light tan, sand-gravel lens
		4/3			SM-GM		@58'8" grades to more gravel, slate fragments, orange brown, with dark grey slate, moist dense.
					GM		
60	167				GM-SM		Coarse sand and gravel in fine to medium silty sand matrx to about 60'8"
			99		ML-SM		Grades to silt-sand, fine-grained, scattered gravel

LOG OF BORING

JOB NAME: Fault Study, 1749-51 Malcolm Ave. JOB No. 15-363-26

APPLIED EARTH SCIENCES
GEOTECHNICAL ENGINEERING CONSULTANTS

FIGURE NO : I-3.2

BORING No. 3 cont'd

DATE EXCAVATED: 4/23/15. Hole Diameter: 8". Ground Elevation: ~227'. **LOGGED BY: S, Minas, EG**

DEPTH IN FEET	ELEVATION.		CORE RECOVERY	BOX NO.	MATERIAL TYPE	MATERIAL SYMBOL	MATERIAL DESCRIPTION
					ML-SM		Grades to silt-sand, slightly clayey, @ 60'9"
			99		SM-ML		Blackish grey sand lens at 61'1"
							Mixed sand, silt and scattered gravel, interlayered coarser and finer layers alternate.
					SM		
65	162	7.5YR 4/3		7	ML-SM		Alternating silt and sand, general same color and hue.
			100		CL		Mixed clayey and silty sand horizons, Clay at 67'3" and 67'9"
					SM-CL		
							wet.
							Gravel at 69'6"
70	157				GM		Relatively clean medium grained sand, slightly silty, @71' grades to silty sand
					SM-SP		
			99		SM		Grades to increased clay, sandy silt
					SC-ML		
		10YR			CL		Clay @ 74' 3" grades to SM-ML,
75	152	6/6		8	SM		coarsens to Sand @75', brown
					SP-SM		
			95		ML		Alternating fine-grained horizons of sand, silty sand, sandy silt, sandy silty clay, and clayey sandy silt form 71' to end of boring @ 80'
					CL		
					SM-SP		
80	147				SP/ML		

End of Boring at 80'. No Caving. Groundwater standing in borehole at 47'. Hole Grouted, Drill cuttings hauled offsite.

LOG OF BORING

JOB NAME: Fault Study, 1749-51 Malcolm Ave. JOB No. 15-363-26

APPLIED EARTH SCIENCES
GEOTECHNICAL ENGINEERING CONSULTANTS

FIGURE NO : I-3.3

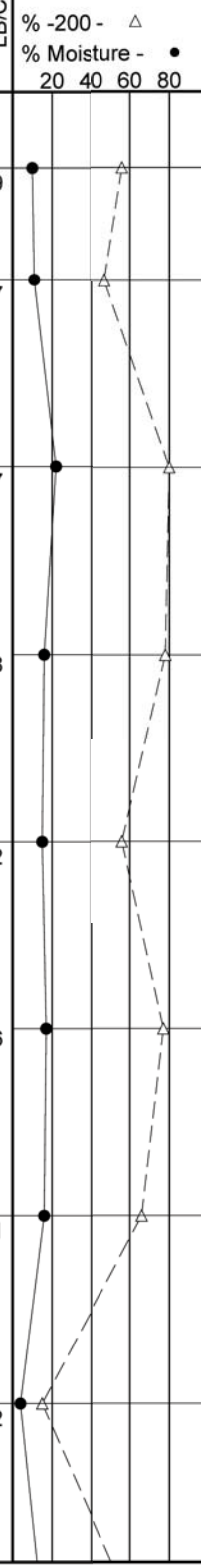
LOG OF BORING NO.4

15-363-02
1749-1751 Malcolm Ave, Los Angeles, CA, 90024

Applied Earth Sciences

Type: Hollow Stem Auger with 140 lb Hammer   Logged by: Marshall
Location: Front Left of 1751 Malcolm Ave

DEPTH, FT	DESCRIPTION OF MATERIAL	SPT BLOWS/FT	BLOWS PER FT	% Moisture	UNIT DRY WT LB/CU FT	% -200
0	(ML) FILL: Silt, moderately compact, slightly moist, dark brown, sandy silt.					
	(ML) SILT: Stiff, slightly moist, dark brown, sandy silt.		36	10	119	56
5	(SM/ML) SAND: Dense, slightly moist to moist, brown, silty sand and sandy silt mixture.		40	11	117	47
10	(CL) CLAY: Firm, moist, brown, silty clay.	18		22	107	80
15	(ML) SILT: Stiff, moist, brown, clayey silt.	32		16	118	78
20	(ML) Grades to firm, sandy, clayey silt.	23		15	112	56
25	(ML) Grades to stiff.	28		17	116	77
30	(CL) CLAY: Stiff, moist, brown, silty clay.	28		16	111	66
35	(SM) SAND: Very dense, slightly moist, brown, silty, fine to medium grained sand, with gravel.	57		4	122	15



COMPLETION DEPTH: 51
DATE: June 15, 2015

DEPTH TO WATER> INITIAL:
FINAL:

Applied Earth Sciences

LOG OF BORING NO.4

15-363-02

1749-1751 Malcolm Ave, Los Angeles, CA, 90024

Type: Hollow Stem Auger with 140 lb Hammer Logged by: Marshall

Location: Front Left of 1751 Malcolm Ave

DEPTH, FT	DESCRIPTION OF MATERIAL	SPT BLOWS/FT	BLOWS PER FT	% Moisture	UNIT DRY WT LB/CU FT	% -200
40	(ML) SILT: Very Stiff, moist, brown, sandy, clayey silt, gravelly.	48		14	119	57
45	(ML) Grades to very moist, sandy silt, some clay.	40		22	111	59
50	(CL) CLAY: Very stiff, very moist, dark brown, silty clay.	83		17	115	71

Chart legend: % -200 - △; % Moisture - ●; scale 20 40 60 80

Depth scale: 40, 45, 50, 55, 60, 65, 70, 75

END @ 51'
NO WATER
NO CAVING
PERCOLATION INSTALLED

COMPLETION DEPTH: 51 DEPTH TO WATER> INITIAL:
DATE: June 15, 2015 FINAL:

LOG OF BORING NO.5

Applied Earth Sciences

15-363-02
1749-1751 Malcolm Ave, Los Angeles, CA, 90024

Type: Hollow Stem Auger with 140 lb Hammer   Logged by: Marshall
Location: Front Left of 1749 Malcolm Ave

DEPTH, FT	DESCRIPTION OF MATERIAL	SPT BLOWS/FT	BLOWS PER FT	% Moisture	UNIT DRY WT LB/CU FT
0	(ML) Fill: Silt, moderately compact, slightly moist, dark brown, sandy silt.				
2	(ML) SILT: Stiff, slightly moist, brown, sandy silt.		40	9	108
5	(SM) SAND: Dense, moist, brown, gravelly, silty, fine to coarse grained sand.		36	13	109
10	(ML) SILT: Very stiff, slightly moist, dark brown, sandy silt, some gravel.		45	8	104
15	(CL) CLAY: Very stiff, moist, dark brown, sandy, silty clay.		46	11	120
20	(CL) Grades to brown/grayish brown, some gravel.		30	15	117
25	(CL/SC) Grades to gravelly, silty, sandy clay.		38	13	120

END @ 26'
NO WATER
NO CAVING
METHANE WELL INSTALLED

Chart columns: % -200 - △; % Moisture - ●; 20 40 60 80; % -200

COMPLETION DEPTH: 26   DEPTH TO WATER> INITIAL:
DATE: June 15, 2015   FINAL:

Applied Earth Sciences

LOG OF BORING NO.6

15-363-02
1749-1751 Malcolm Ave, Los Angeles, CA, 90024

Type: Hollow Stem Auger with 140 lb Hammer   Logged by: Marshall
Location: Rear Left of Property Adjacent to Alley

DEPTH, FT	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SPT BLOWS/FT	BLOWS PER FT	% Moisture	UNIT DRY WT LB/CU FT	% -200 - △ % Moisture - ● 20 40 60 80	% -200
0			(ML) Fill: Silt, moderately compact, slightly moist, dark brown, sandy silt.						
			(ML) SILT: Very stiff, moist, brown to dark brown, gravelly, sandy, clayey silt.		48	13	120		
5			(ML) Grades to more sandy.		52	15	119		
10			(SM) SAND: Very dense, moist, brown, silty, fine grained sand.		56	10	124		
15			(ML) SILT: Very stiff, moist, brown, clayey, sandy silt.		50	19	108		
20			(SM) SAND: Very dense, moist, brown, silty, fine grained sand.		68	12	111		
25			(SM) Grades to slightly moist to moist.		48	9	123		
30			(SM) Grades to moist.		70	12	120		
35			END @ 31' NO WATER NO CAVING METHANE WELL INSTALLED						

COMPLETION DEPTH: 31   DEPTH TO WATER> INITIAL:
DATE: June 15, 2015   FINAL:

Applied Earth Sciences

LOG OF BORING NO.7

15-363-02

1749-1751 Malcolm Ave, Los Angeles, CA, 90024

Type: Hand Auger with 50 lb Hammer Logged by: Marshall

Location: Front Left of Property

DEPTH, FT	DESCRIPTION OF MATERIAL	SPT BLOWS/FT	BLOWS PER FT	% Moisture	UNIT DRY WT LB/CU FT	% -200
0	(ML) Fill: Silt, moderately compact, slightly moist, dark brown, sandy silt.					
2	(ML) SILT: Stiff, slightly moist, brown, sandy silt.		25	9	105	
5	(ML) Grades to very stiff, moist, gravelly, sandy, clayey silt.		46	13	117	
10	(SM) SAND: Very dense, moist, brown, gravelly, silty, fine to coarse grained sand.		55	10	107	
15	(ML) SILT: Stiff, very moist, brown, sandy silt.		23	25	98	

% -200 - △
% Moisture - ●
20 40 60 80

END @ 16'
NO WATER
NO CAVING
HOLE BACKFILLED

COMPLETION DEPTH: 16
DATE: June 15, 2015

DEPTH TO WATER> INITIAL:
FINAL:

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAME
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravels, gravel - sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amt. of fines)	GM	Silty gravels, gravel-sand-silt mixtures.
			GC	Clayey gravels, gravel-sand-clay mixtures.
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 sieve size)	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amt. of fines)	SM	Silty sands, sand-silt mixtures.
			SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	Organic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Organic clay of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (Liquid limit GREATER than 50)		MH	Organic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Organic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

PARTICLE SIZE LIMITS

SILT OR CLAY	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

NO. 200 NO. 40 NO. 10 NO. 4 ¾ in. 3 in. (12 in.)

U. S. STANDARD SIEVE SIZE

UNIFIED SOIL CLASSIFICATION SYSTEM

JOB NAME :	Proposed Multifamily Residential Building Project 1749 & 1751 Malcolm Avenue & 1772 Glendon Avenue Los Angeles, CA 90024	JOB No. 15-363-02
Applied Earth Sciences	GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS www.aessoil.com (818) 552-6000	FIGURE No. I-8

SUMMARY

OF

CONE PENETRATION TEST DATA

Project:

1749 & 1751 Malcolm Avenue
Los Angeles, CA
April 21 & May 12, 2015

Prepared for:

Mr. Shant Minas
Applied Earth Sciences
4742 San Fernando Road
Glendale, CA 91204
Office (818) 552-6000 / Fax (818) 552-6007

Prepared by:

KTE

KEHOE TESTING & ENGINEERING
5415 Industrial Drive
Huntington Beach, CA 92649-1518
Office (714) 901-7270 / Fax (714) 901-7289
www.kehoetesting.com

TABLE OF CONTENTS

SUMMARY
OF
CONE PENETRATION TEST DATA

1. INTRODUCTION

This report presents the results of a Cone Penetration Test (CPT) program carried out for the project located at 1749 & 1751 Malcolm Avenue in Los Angeles, California. The work was performed by Kehoe Testing & Engineering (KTE) on April 21 & May 12, 2015. The scope of work was performed as directed by Applied Earth Sciences personnel.

2. SUMMARY OF FIELD WORK

The fieldwork consisted of performing CPT soundings at 13 locations to determine the soil lithology. Groundwater measurements and hole collapse depths provided in **TABLE 2.1** are for information only. The readings indicate the apparent depth to which the hole is open and the apparent water level (if encountered) in the CPT probe hole at the time of measurement upon completion of the CPT. KTE does not warranty the accuracy of the measurements and the reported water levels may not represent the true or stabilized groundwater levels.

LOCATION	DEPTH OF CPT (ft)	COMMENTS/NOTES:
CPT-1	70	Refusal, groundwater @ 40 ft
CPT-2	80	Groundwater @ 40 ft
CPT-3	80	Groundwater @ 39 ft
CPT-4	76	Refusal, groundwater @ 40 ft
CPT-5	80	Hole open to 80 ft (dry)
CPT-6	80	Groundwater @ 40 ft
CPT-7	71	Refusal, groundwater @ 40 ft
CPT-8	80	Groundwater @ 34 ft
CPT-9	79	Groundwater @ 33 ft
CPT-10	80	Hole open to 10 ft (dry)

LOCATION	DEPTH OF CPT (ft)	COMMENTS/NOTES:
CPT-11	80	Hole open to 8 ft (dry)
CPT-12	71	Refusal, hole open to 29 ft (dry)
CPT-13	80	No cave depth taken

TABLE 2.1 - Summary of CPT Soundings

3. FIELD EQUIPMENT & PROCEDURES

The CPT soundings were carried out by **KTE** using an integrated electronic cone system manufactured by Vertek. The CPT soundings were performed in accordance with ASTM standards (D5778). The cone penetrometers were pushed using a 30-ton CPT rig. The cone used during the program was a 15 cm^2 cone and recorded the following parameters at approximately 2.5 cm depth intervals:

- Cone Resistance (qc)
- Sleeve Friction (fs)
- Dynamic Pore Pressure (u)
- Inclination
- Penetration Speed

At locations CPT-2 & CPT-7, shear wave measurements were obtained at various depths. The shear wave is generated using an air-actuated hammer, which is located inside the front jack of the CPT rig. The cone has a triaxial geophone, which recorded the shear wave signal generated by the air hammer.

The above parameters were recorded and viewed in real time using a laptop computer. Data is stored at the KTE office for future analysis and reference. A complete set of baseline readings was taken prior to each sounding to determine temperature shifts and any zero load offsets. Monitoring base line readings ensures that the cone electronics are operating properly.

4. CONE PENETRATION TEST DATA & INTERPRETATION

The Cone Penetration Test data is presented in graphical form in the attached Appendix. These plots were generated using the CPeT-IT program. Penetration depths are referenced to ground surface. The soil classification on the CPT plots is derived from the attached CPT Classification Chart (Robertson) and presents major soil lithologic changes. The stratigraphic interpretation is based on relationships between cone resistance (qc), sleeve friction (fs), and penetration pore pressure (u). The friction ratio (Rf), which is sleeve friction divided by cone resistance, is a calculated parameter that is used along with cone resistance to infer soil behavior type. Generally, cohesive soils (clays) have high friction ratios, low cone resistance and generate excess pore water pressures. Cohesionless soils (sands) have lower friction ratios, high cone bearing and generate little (or negative) excess pore water pressures.

Tables of basic CPT output from the interpretation program CPeT-IT are provided for CPT data averaged over one foot intervals in the Appendix. Spreadsheet files of the averaged basic CPT output and averaged estimated geotechnical parameters are also included for use in further geotechnical analysis. We recommend a geotechnical engineer review the assumed input parameters and the calculated output from the CPeT-IT program. A summary of the equations used for the tabulated parameters is provided in the Appendix.

It should be noted that it is not always possible to clearly identify a soil type based on qc, fs and u. In these situations, experience, judgement and an assessment of the pore pressure data should be used to infer the soil behavior type.

If you have any questions regarding this information, please do not hesitate to call our office at (714) 901-7270.

Sincerely,

KEHOE TESTING & ENGINEERING

Richard W. Koester, Jr.
General Manager

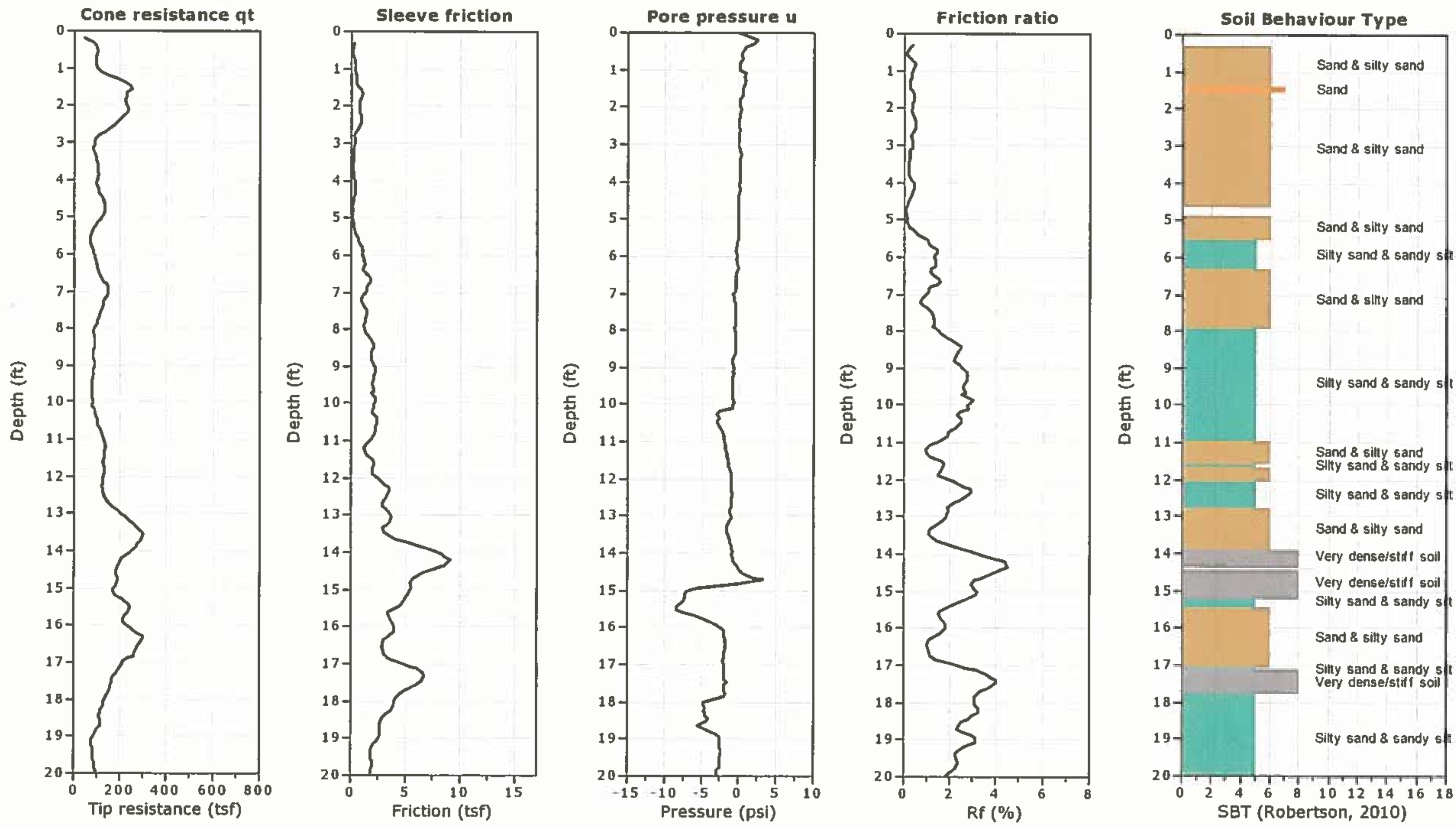
05/22/15-kk-5869

APPENDIX

Kehoe Testing and Engineering
714-901-7270
rich@kehoetesting.com
www.kehoetesting.com

Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-1
Total depth: 69.67 ft, Date: 4/21/2015
Cone Type: Vertek



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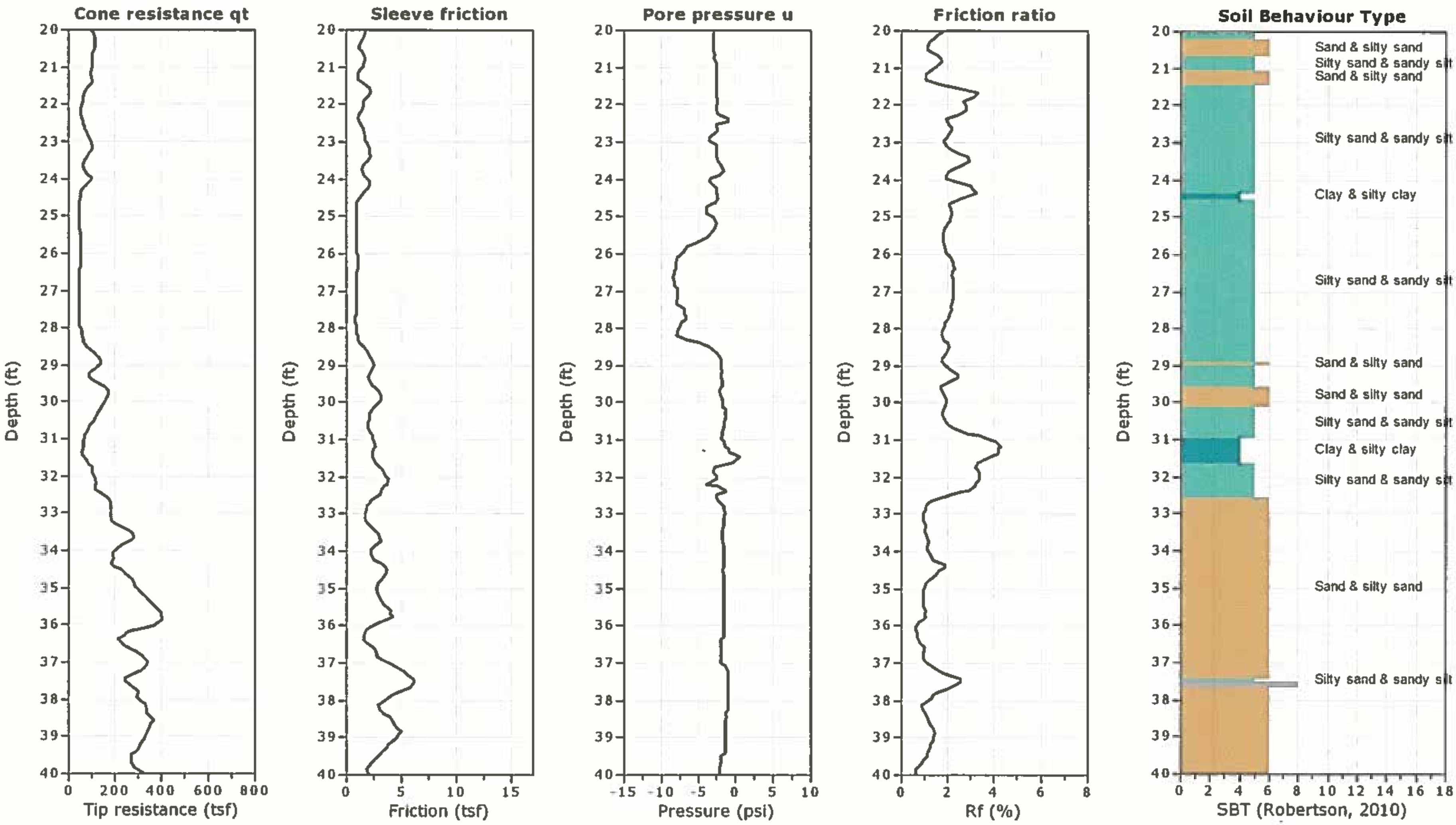
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-1
Total depth: 69.67 ft, Date: 4/21/2015
Cone Type: Vertek



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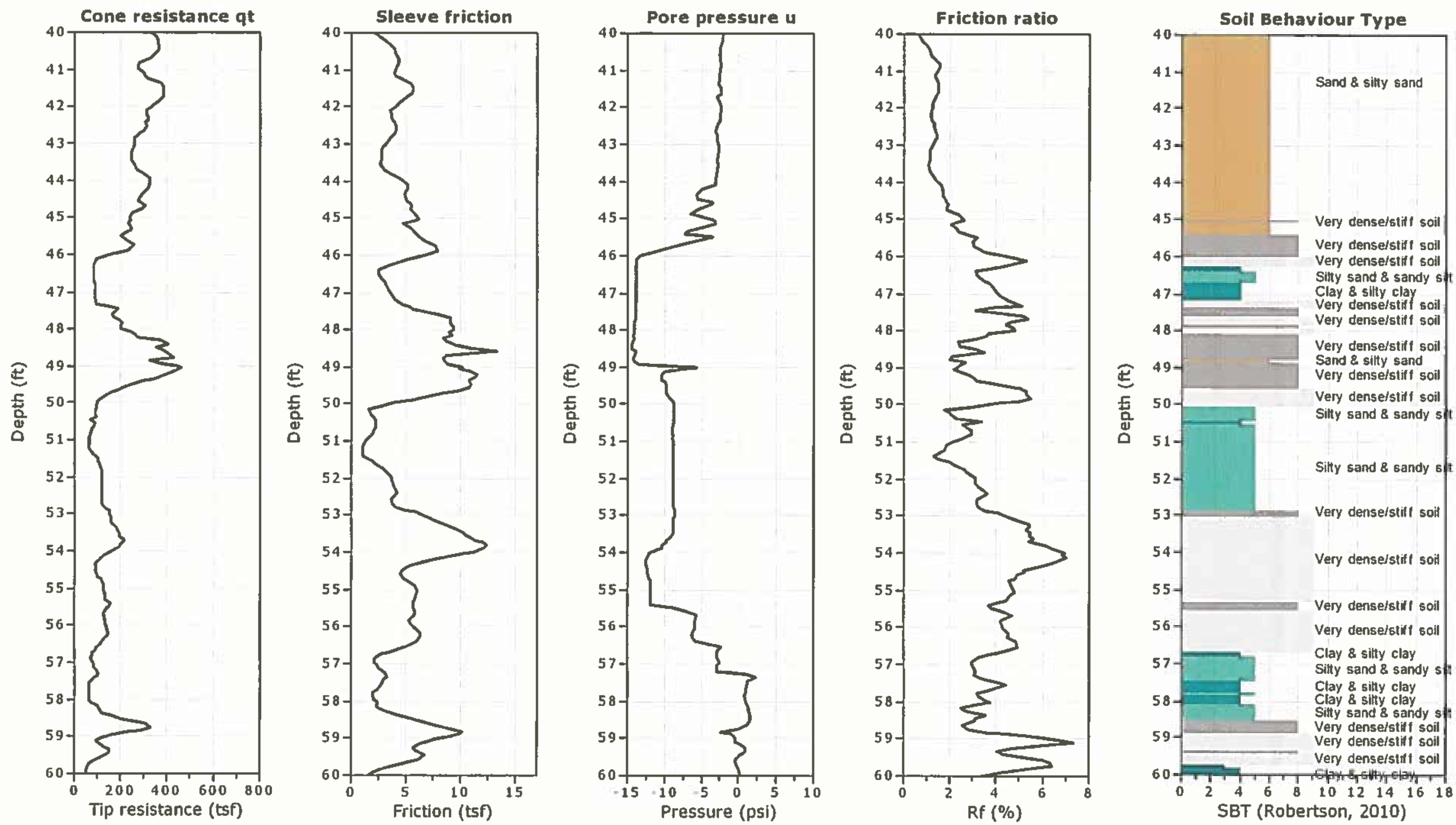
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-1
Total depth: 69.67 ft, Date: 4/21/2015
Cone Type: Vertek



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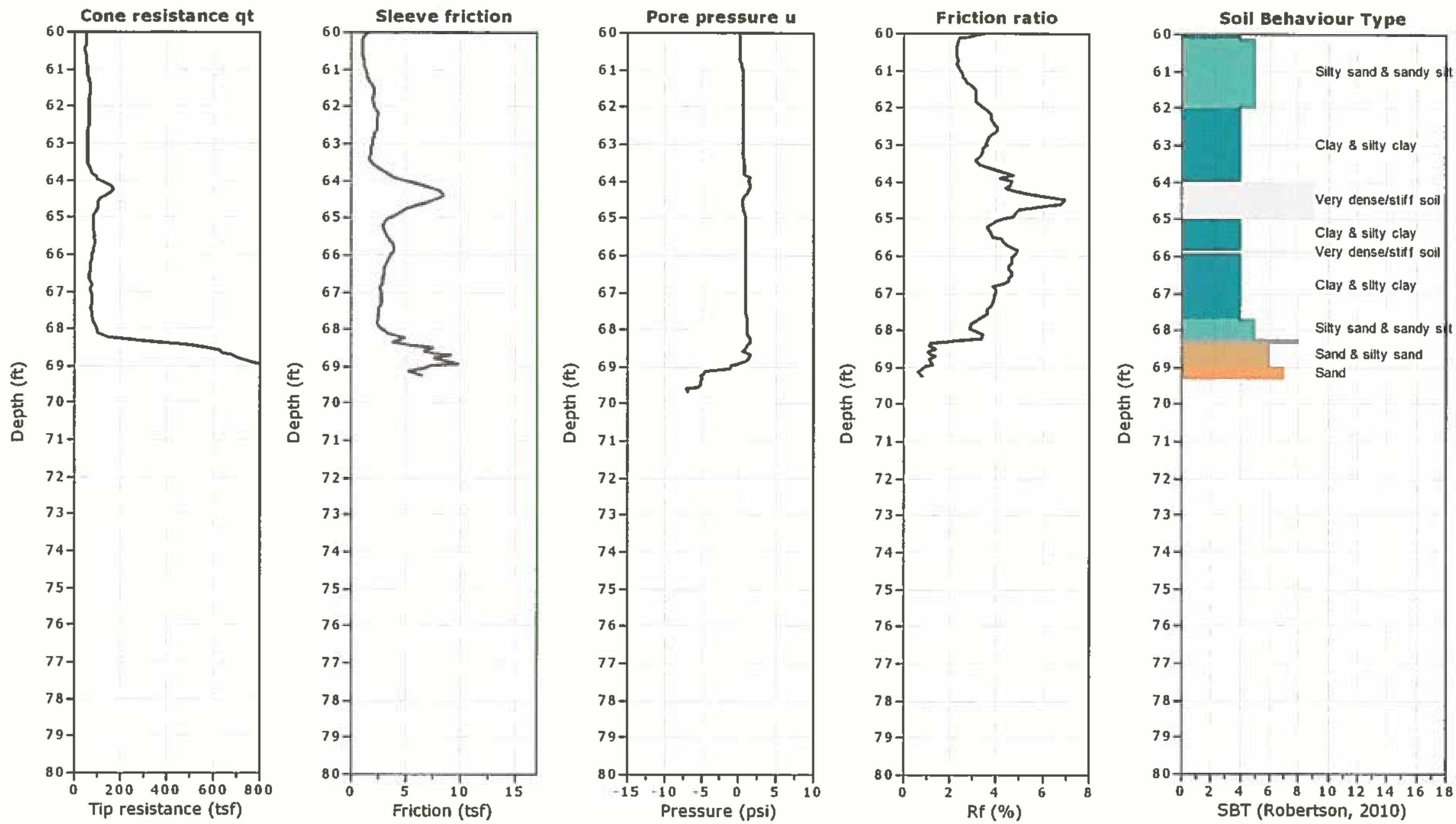
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-1
Total depth: 69.67 ft, Date: 4/21/2015
Cone Type: Vertek



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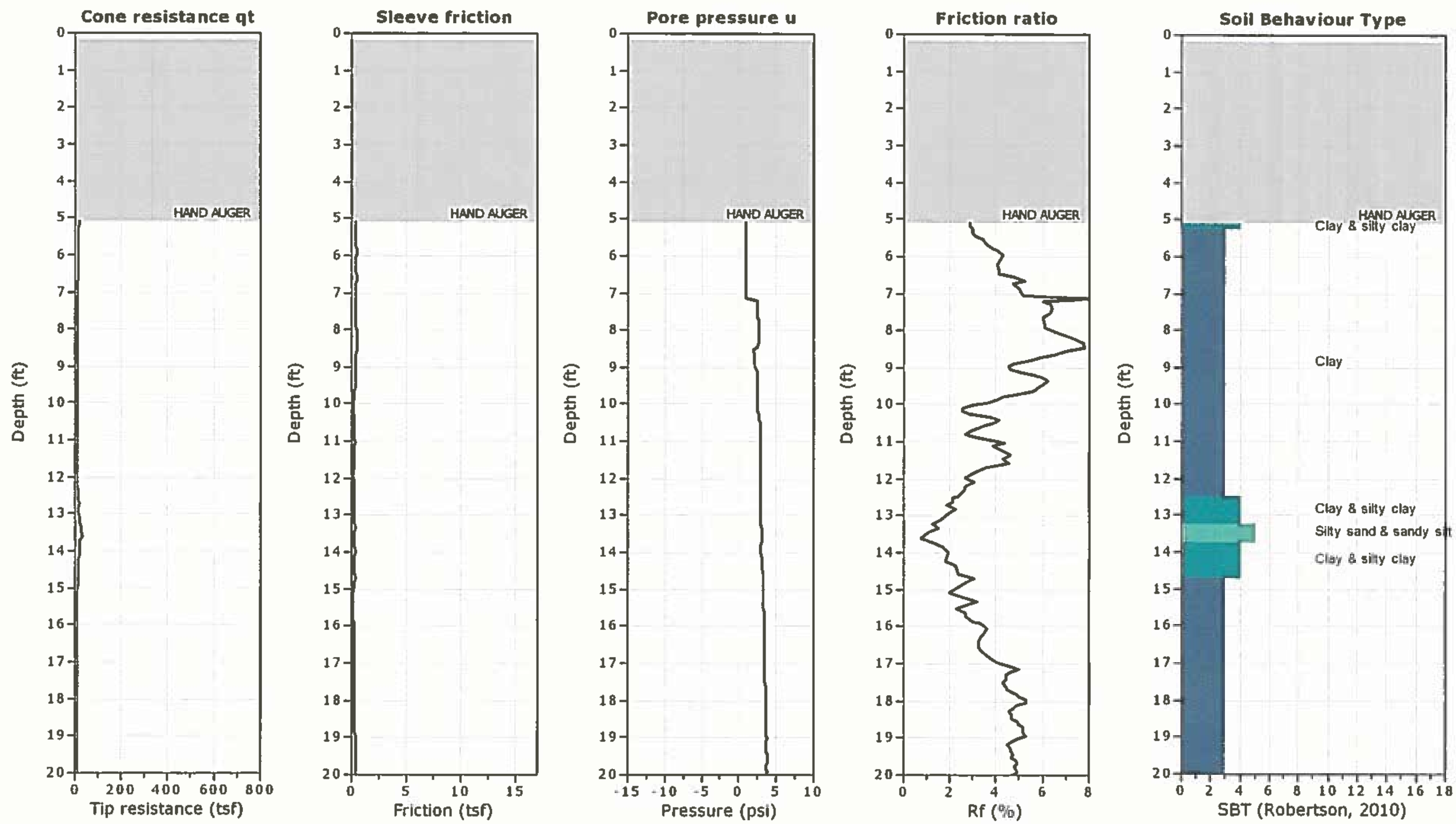
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-2
Total depth: 80.57 ft, Date: 4/21/2015
Cone Type: Vertek



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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-2
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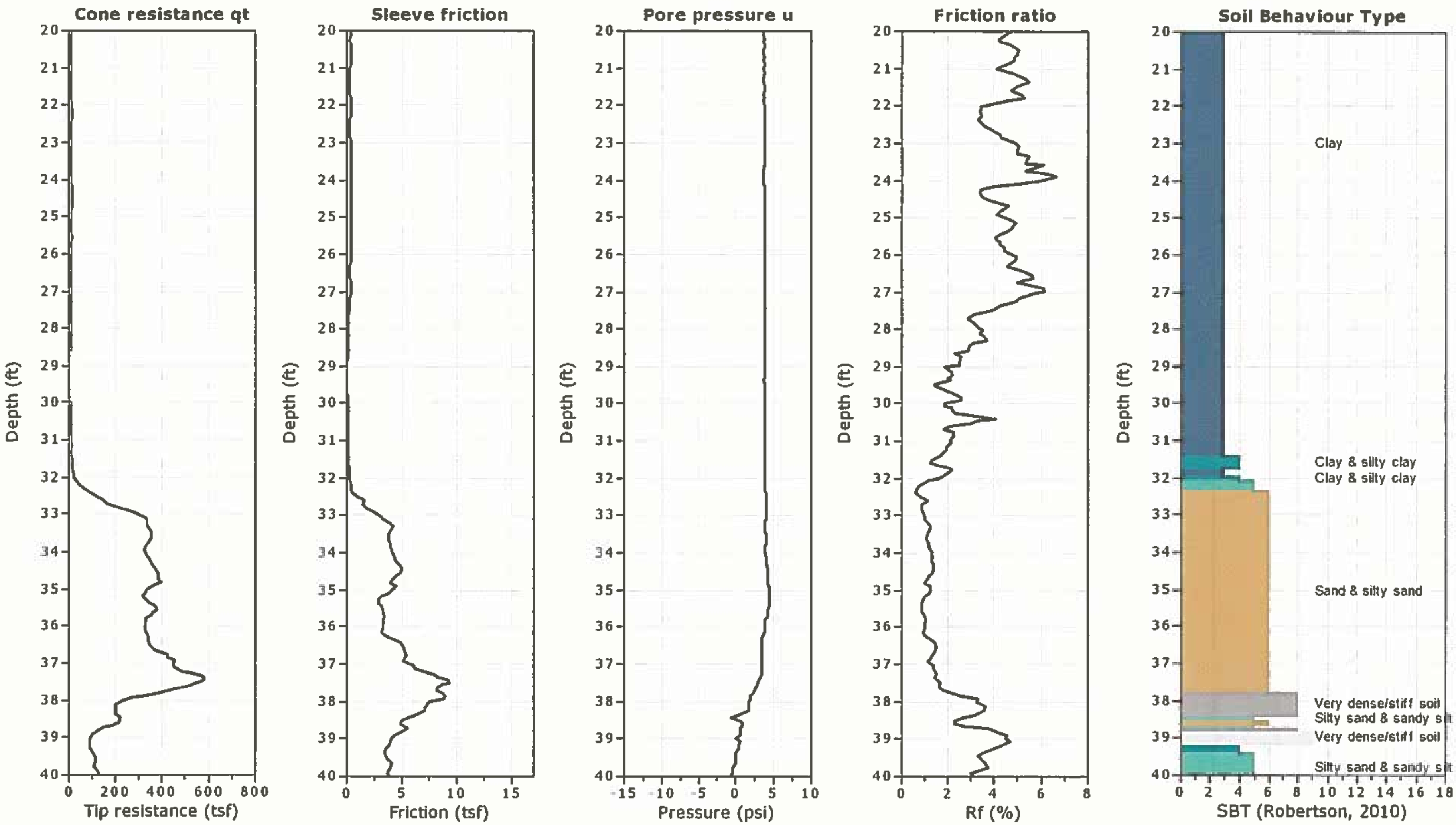
Cone Type: Vertek



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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-2
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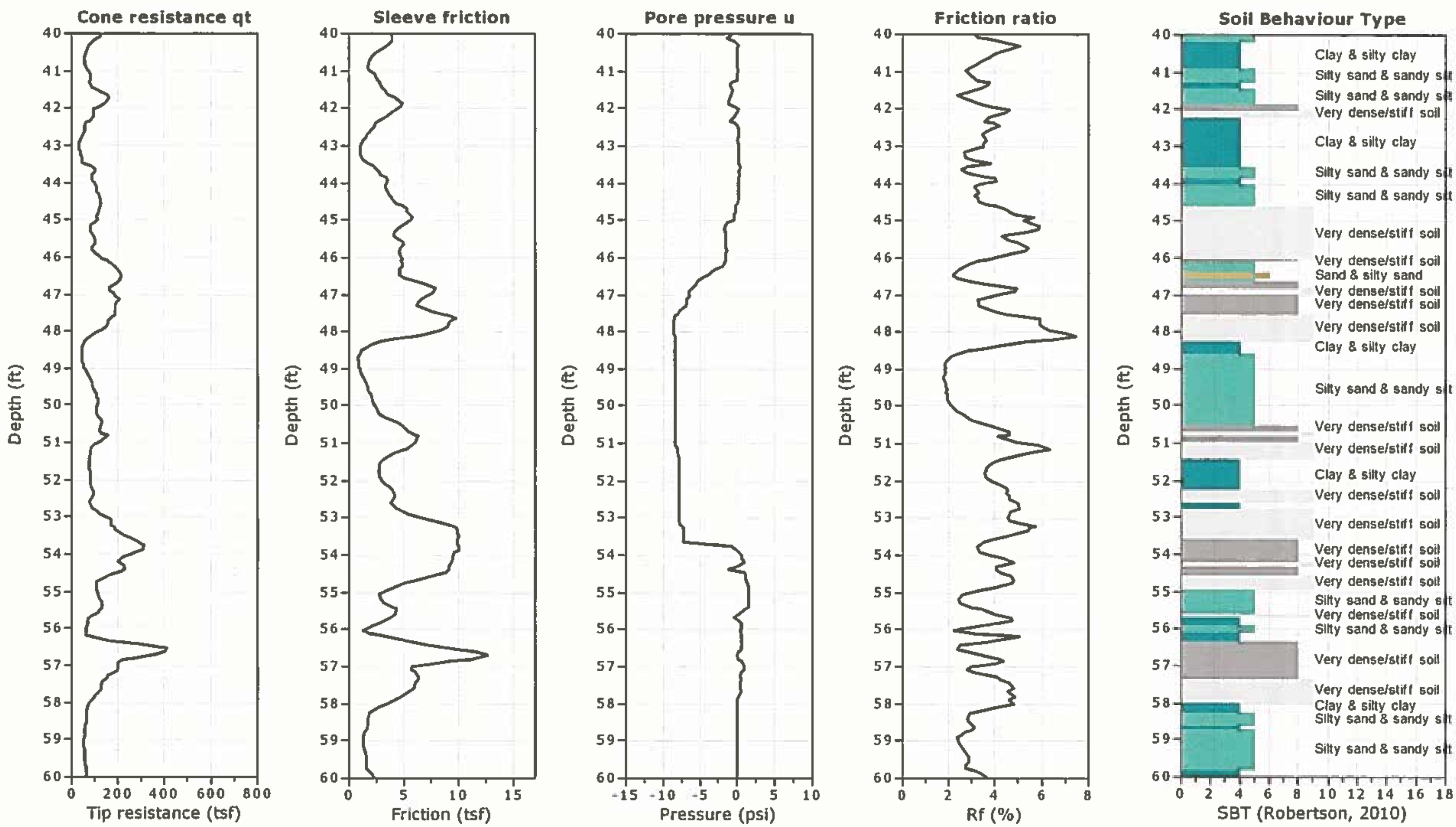

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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-2
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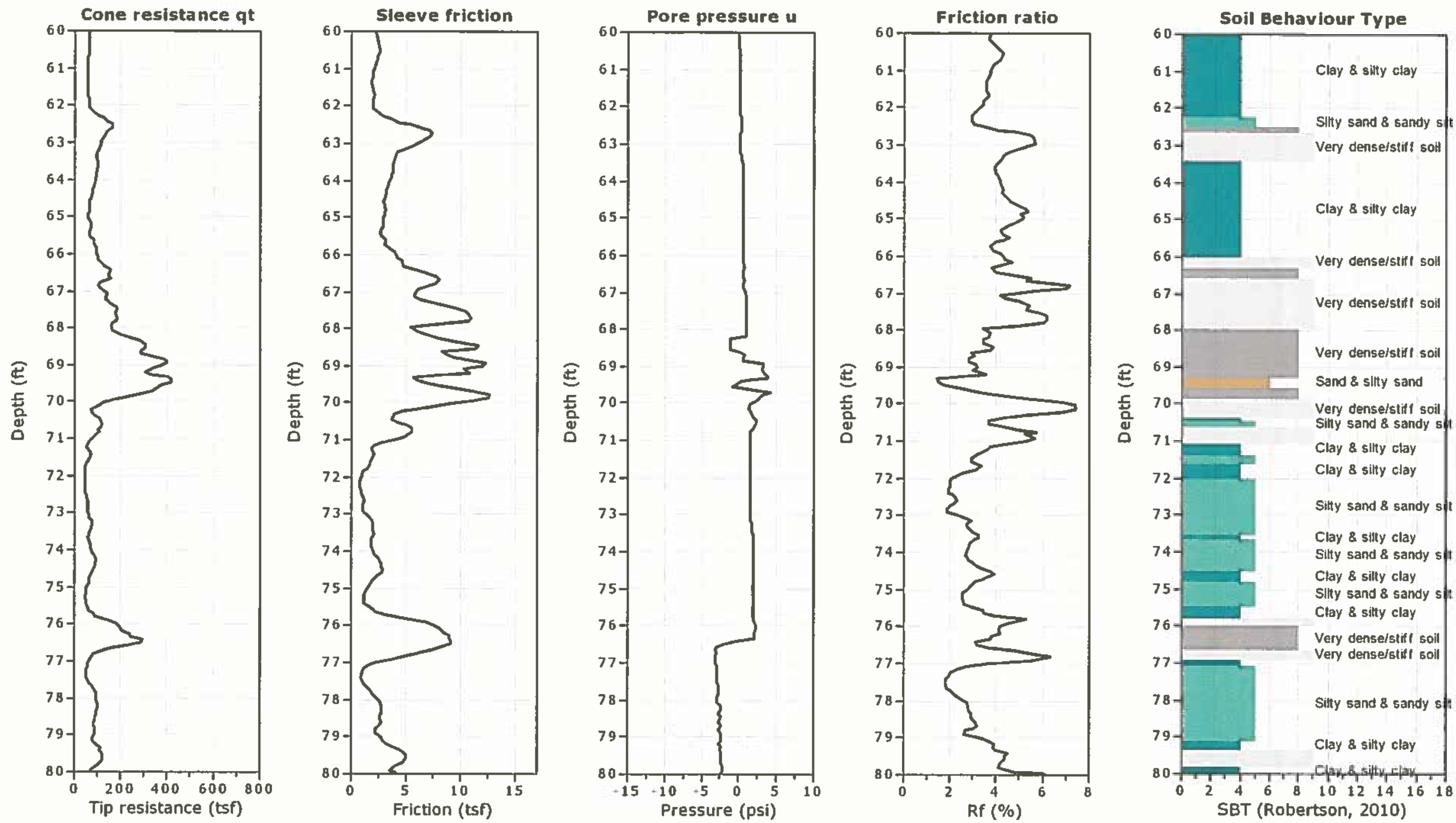

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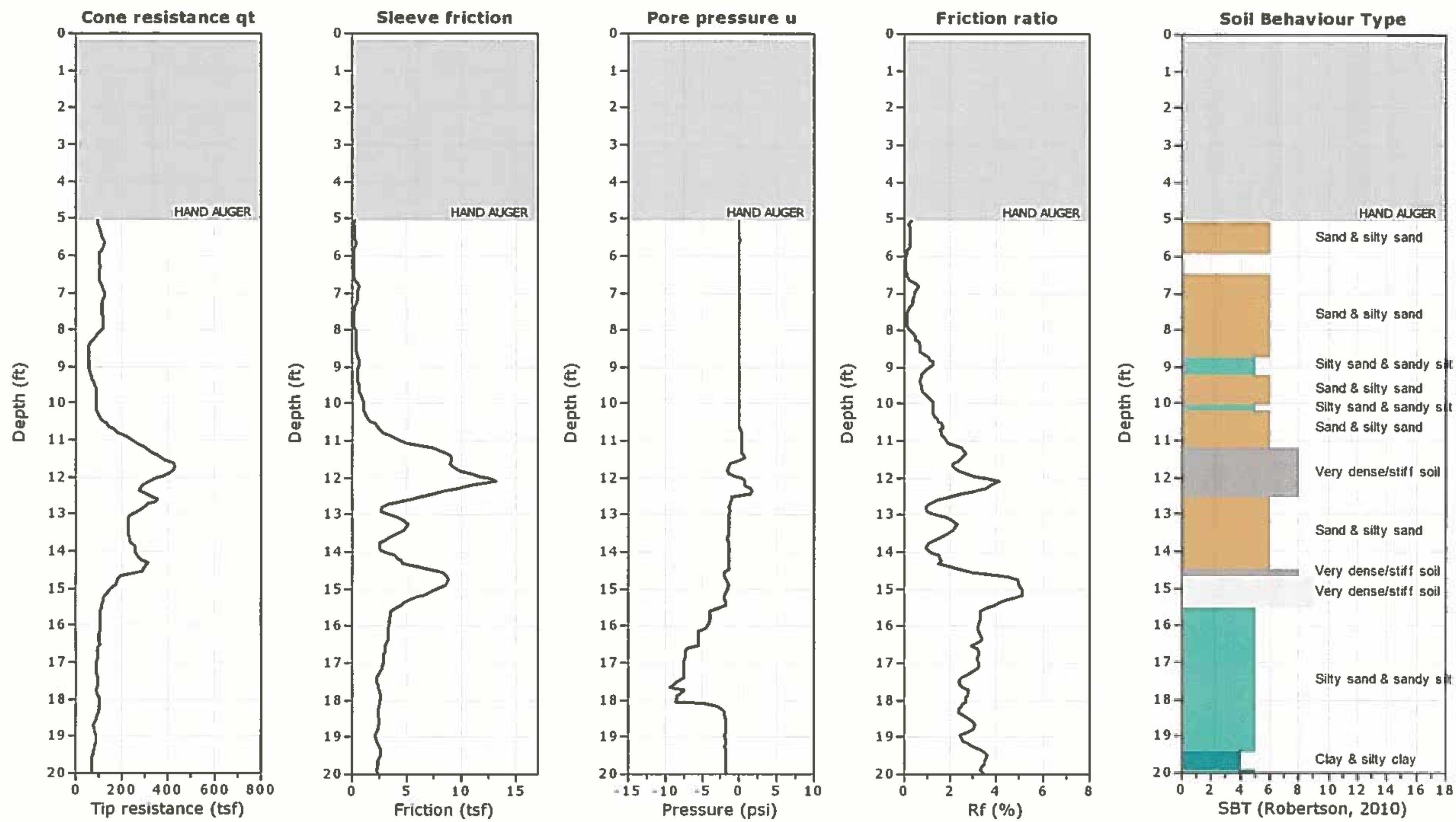
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-3
Total depth: 80.49 ft, Date: 4/21/2015
Cone Type: Vertek



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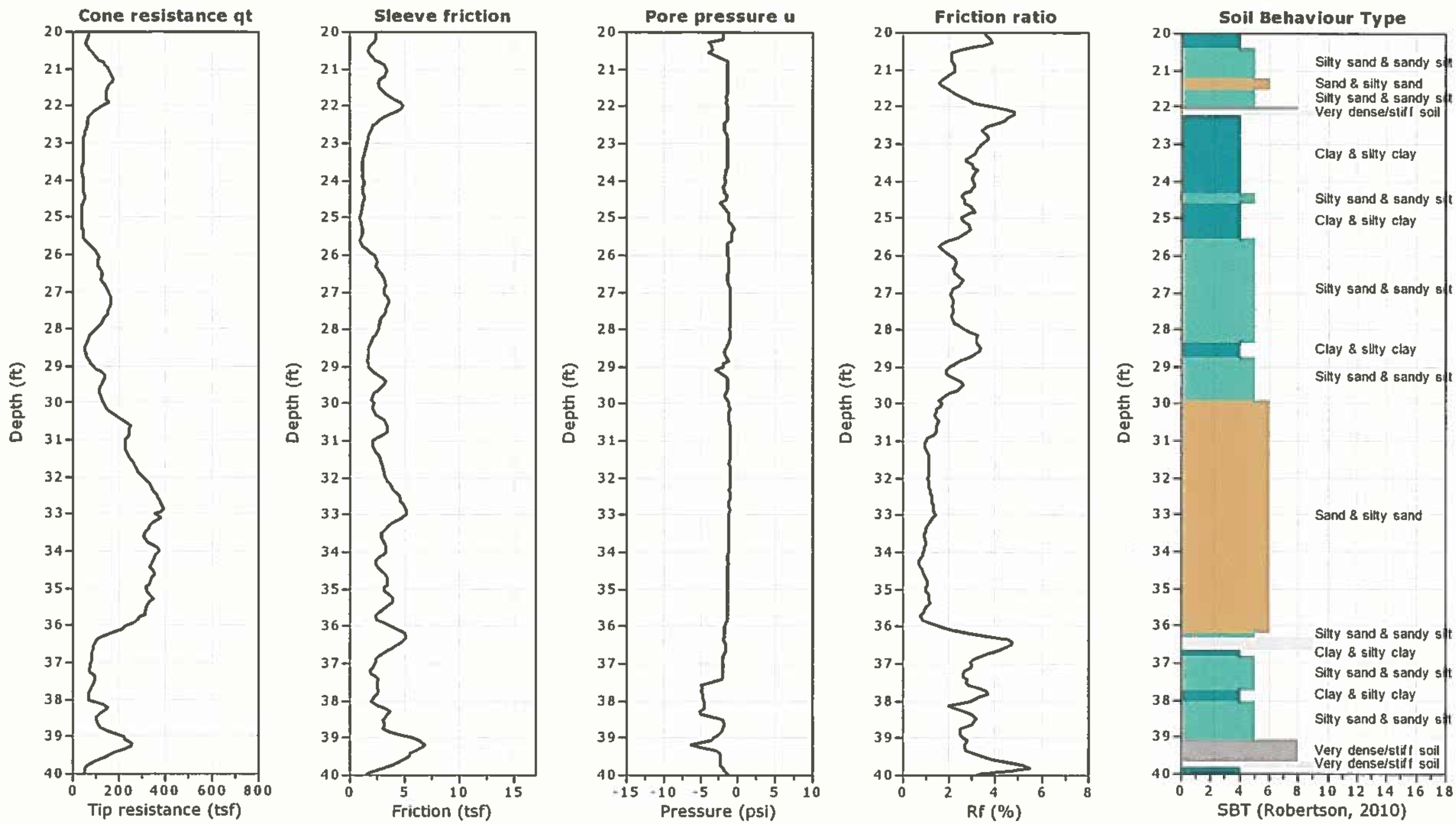
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-3
Total depth: 80.49 ft, Date: 4/21/2015
Cone Type: Vertek



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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-3
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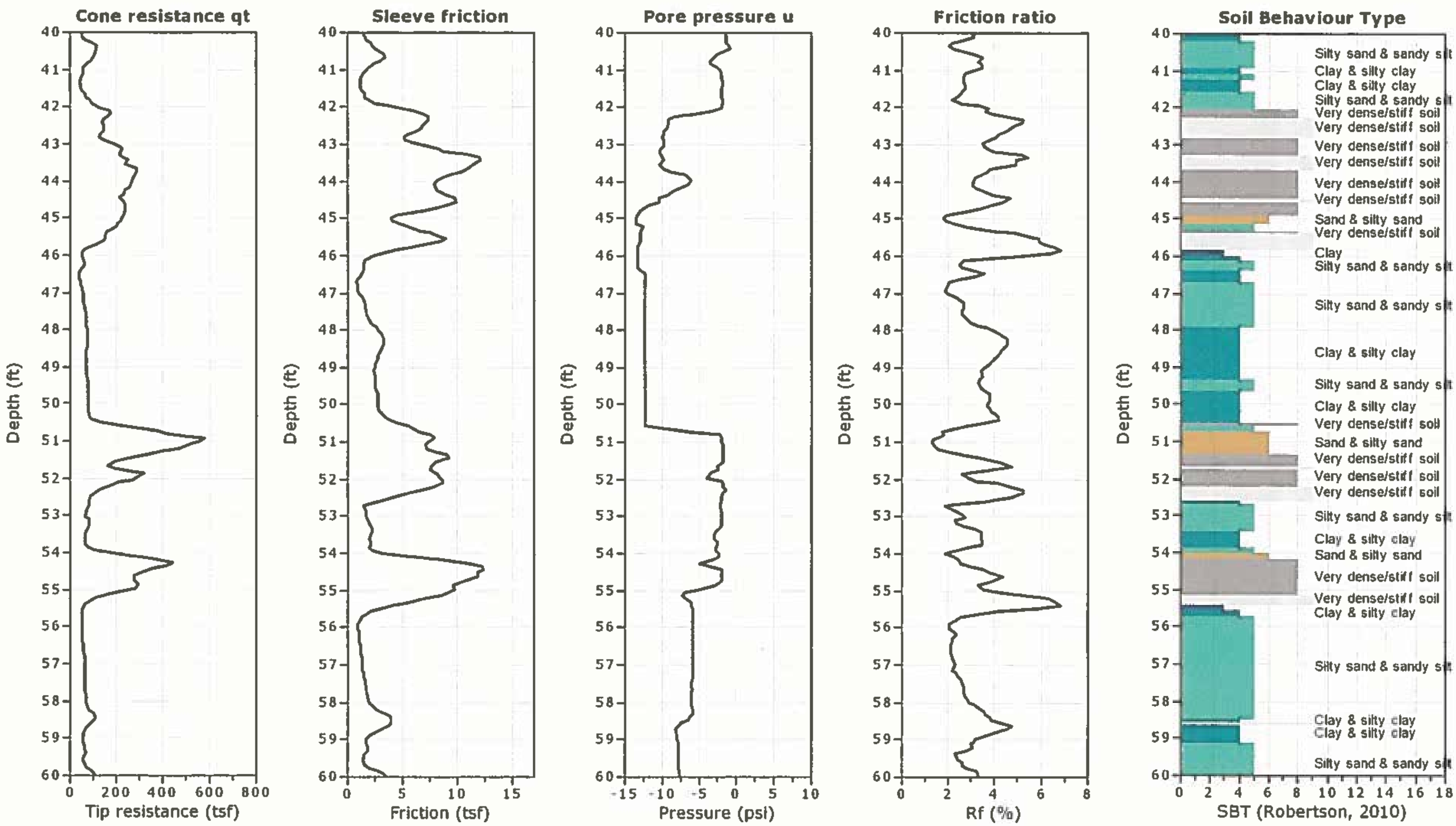
Cone Type: Vertek



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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-3
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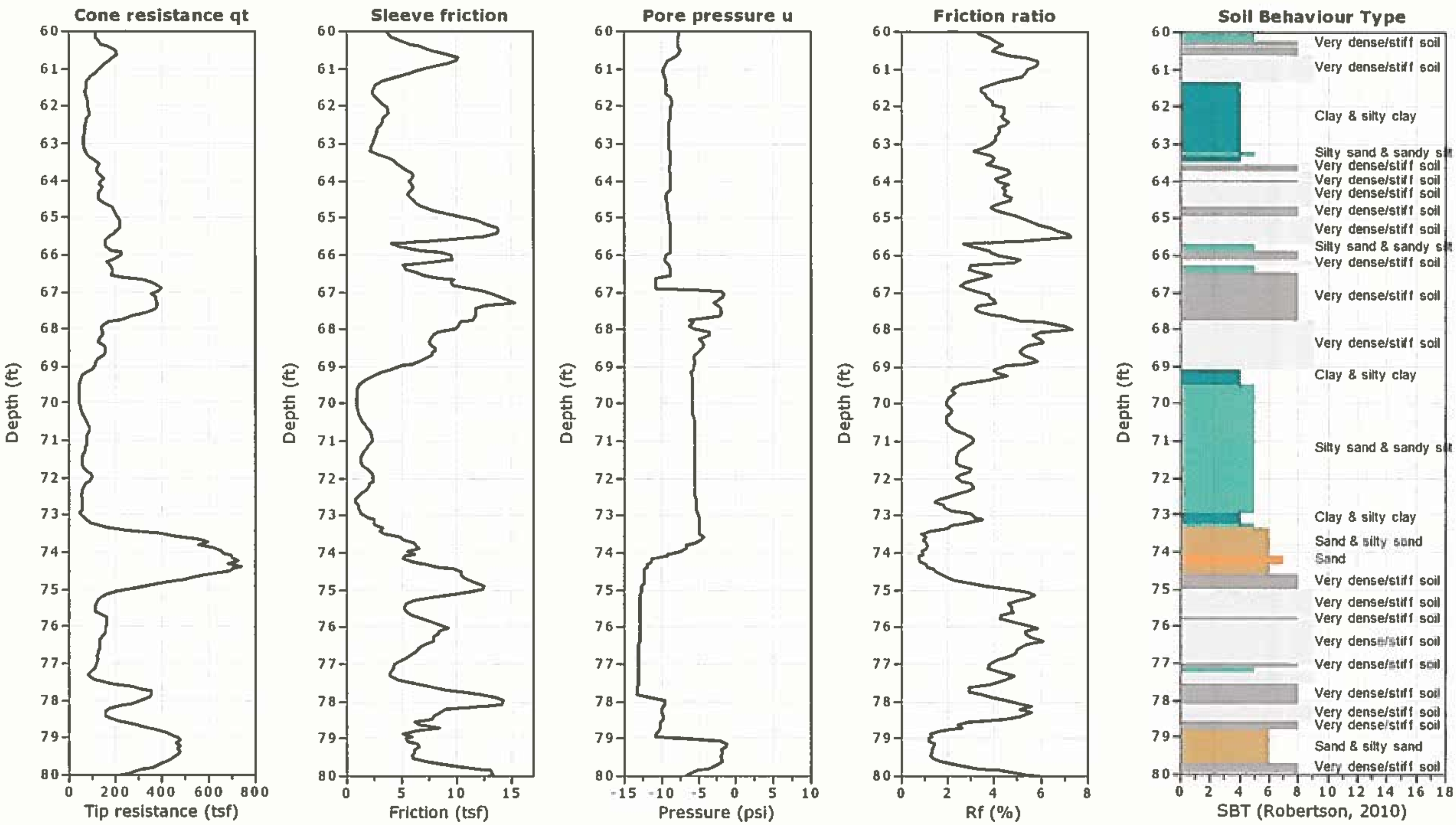
Cone Type: Vertek



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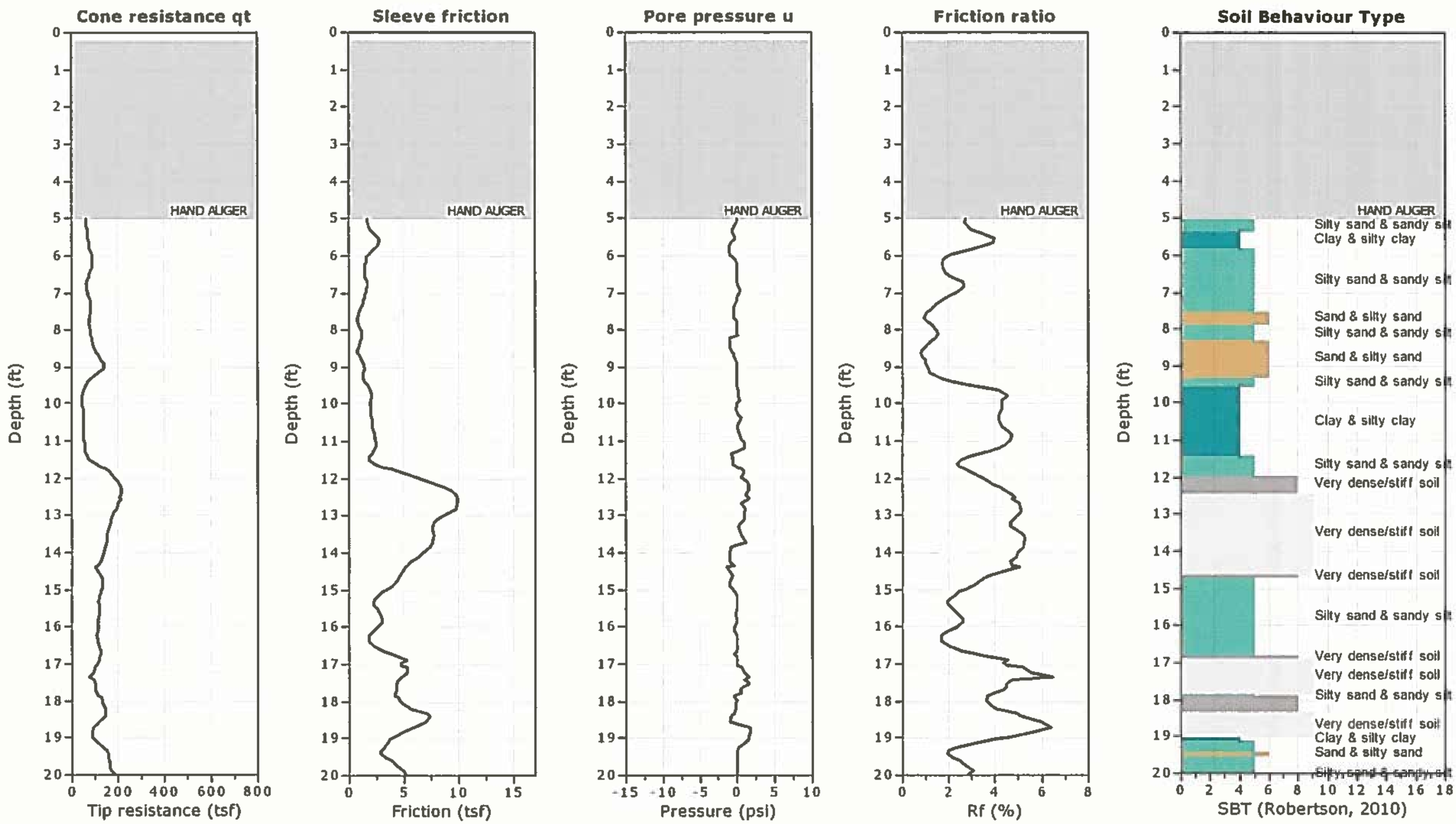
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-4
Total depth: 77.55 ft, Date: 4/21/2015
Cone Type: Vertek



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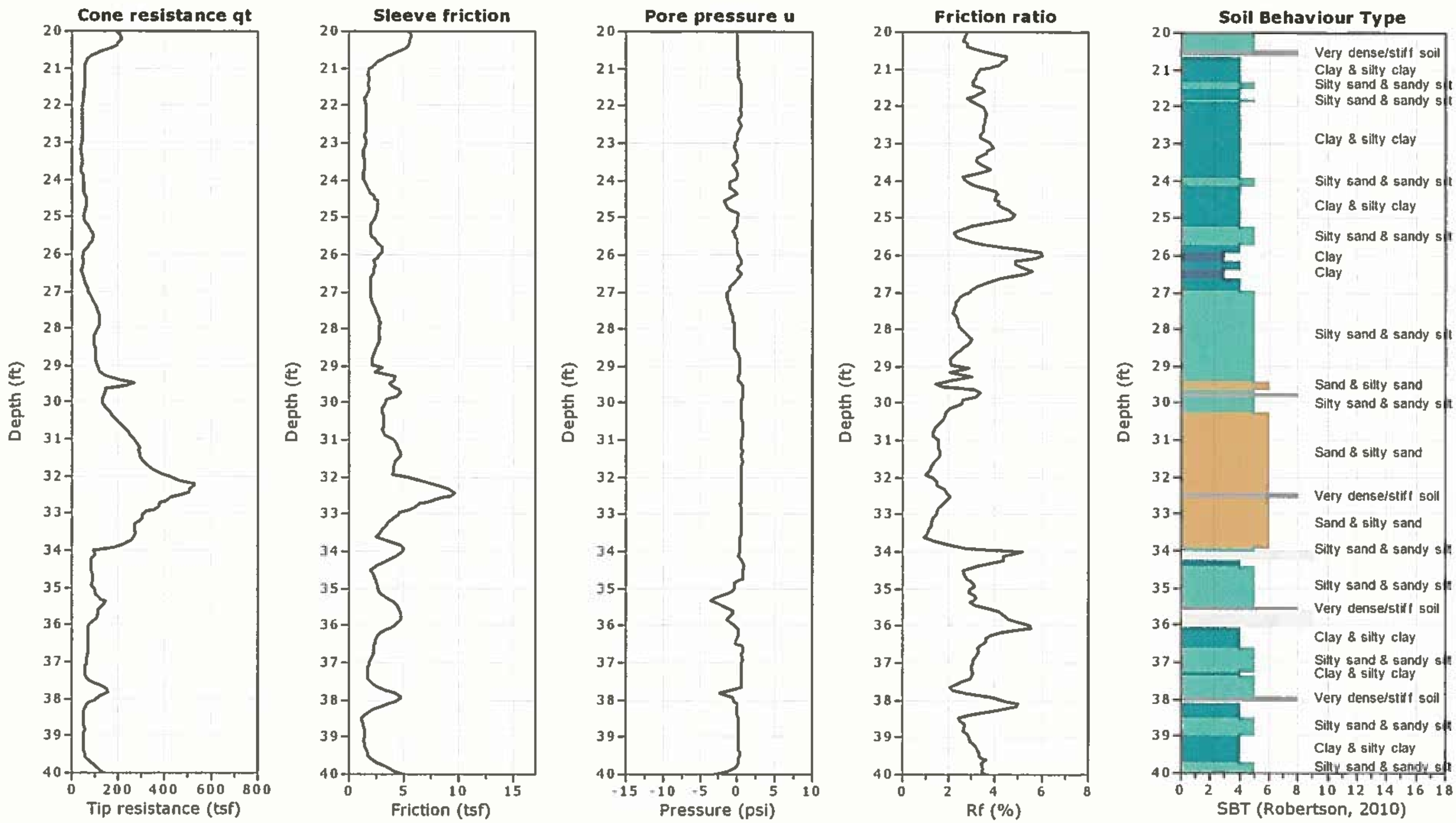
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-4
Total depth: 77.55 ft, Date: 4/21/2015
Cone Type: Vertek



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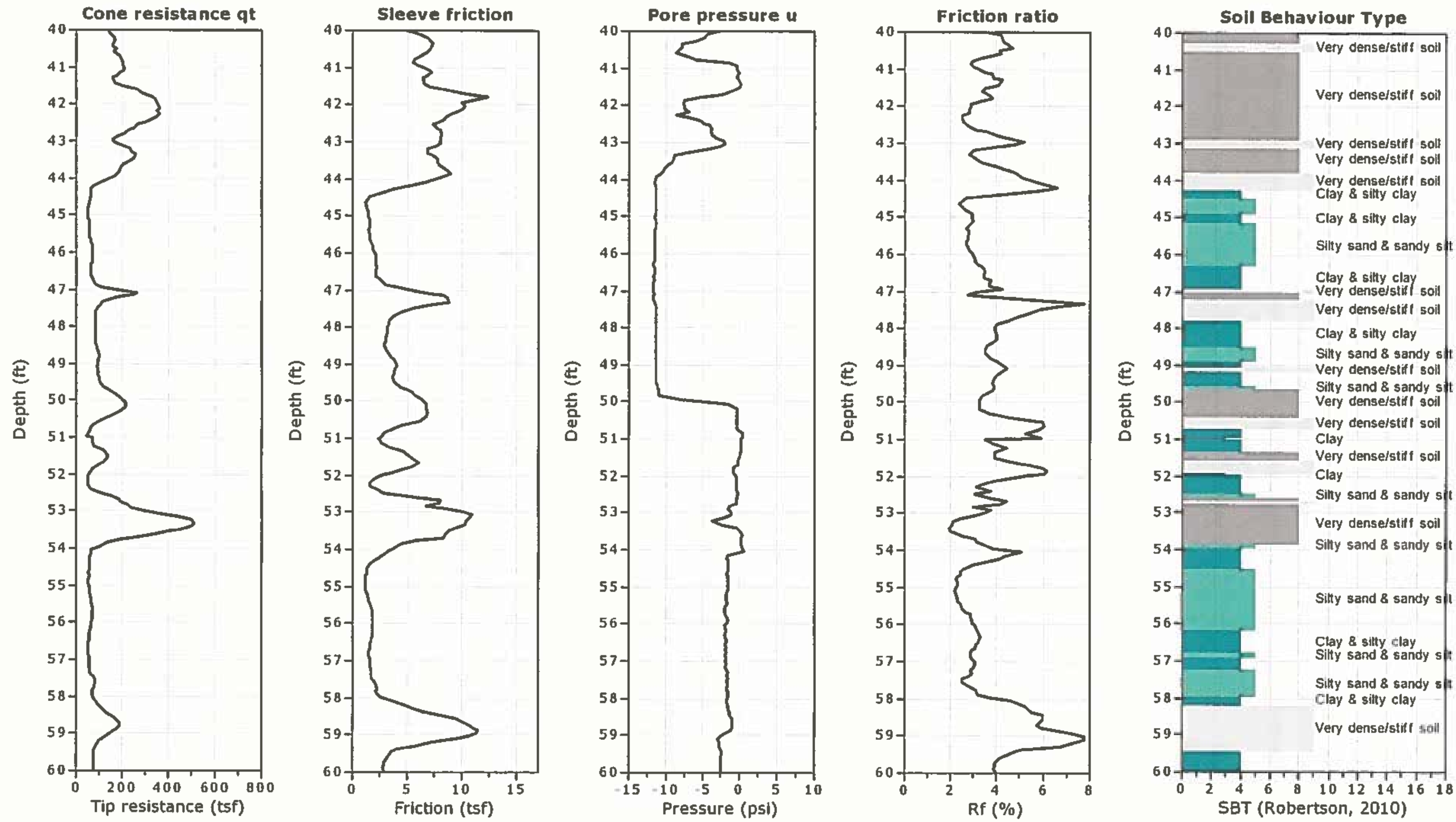
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-4
Total depth: 77.55 ft, Date: 4/21/2015
Cone Type: Vertek



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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-4
Total depth: 77.55 ft, Date: 4/21/2015
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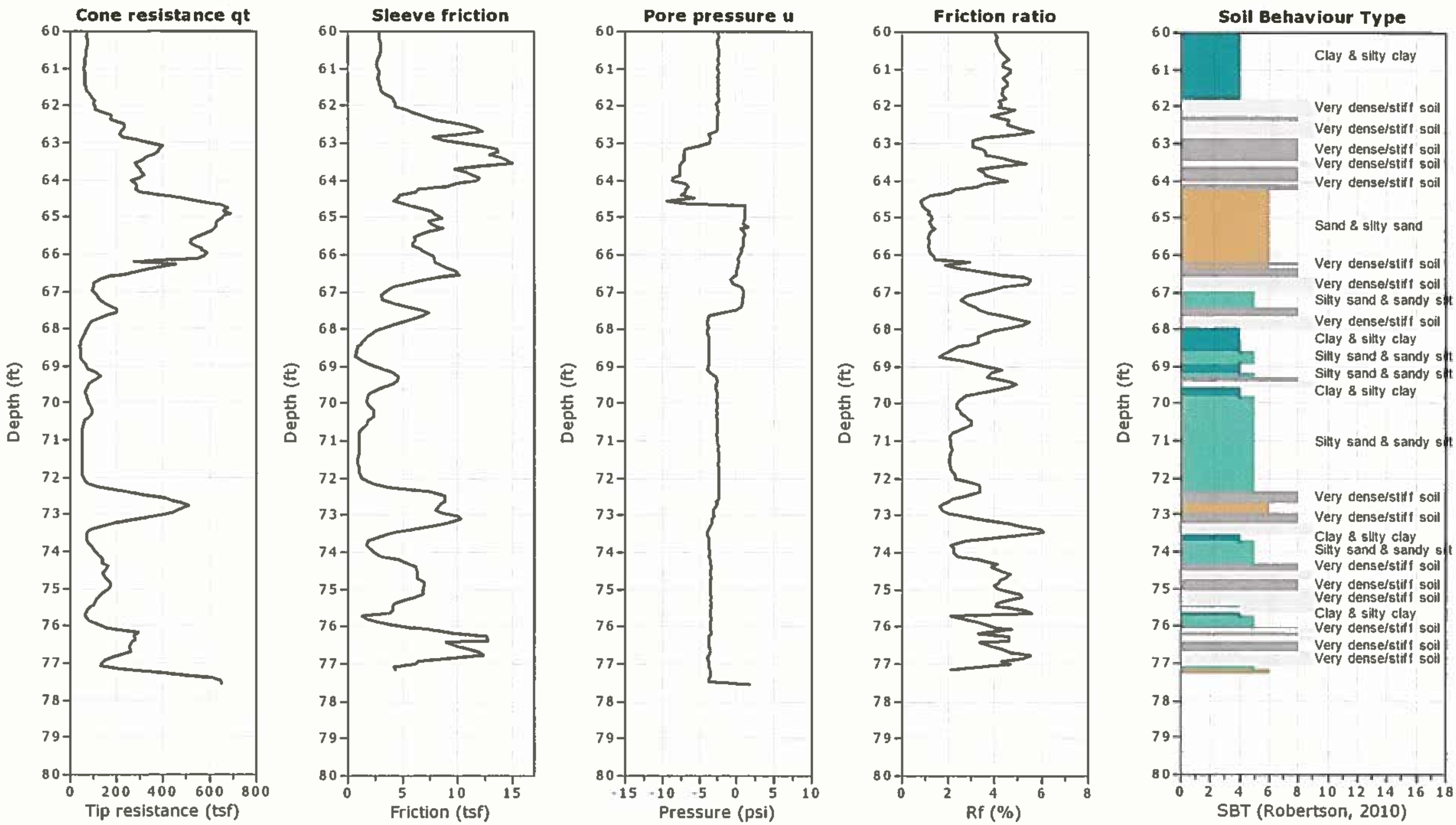

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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-5
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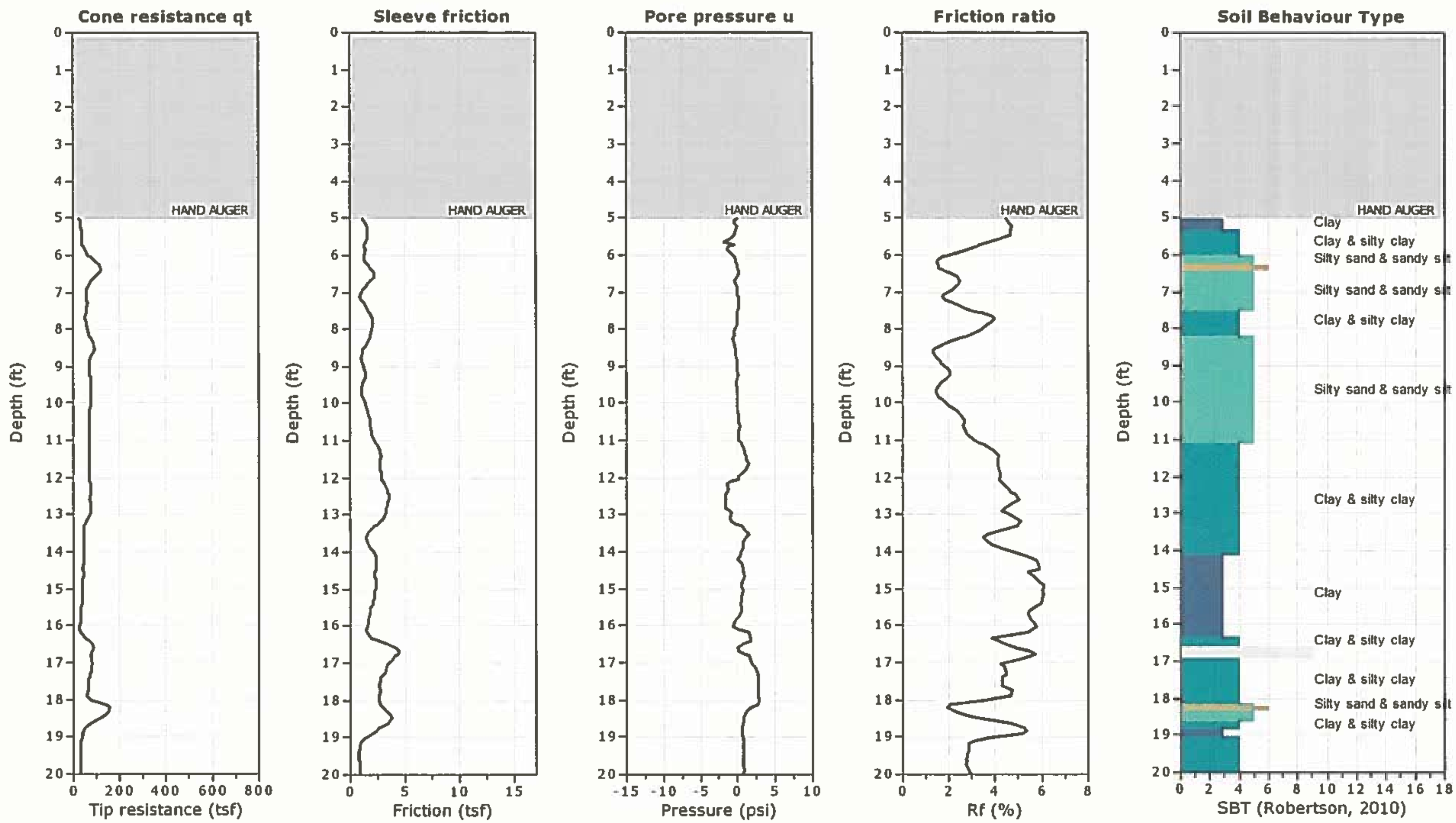
Cone Type: Vertek



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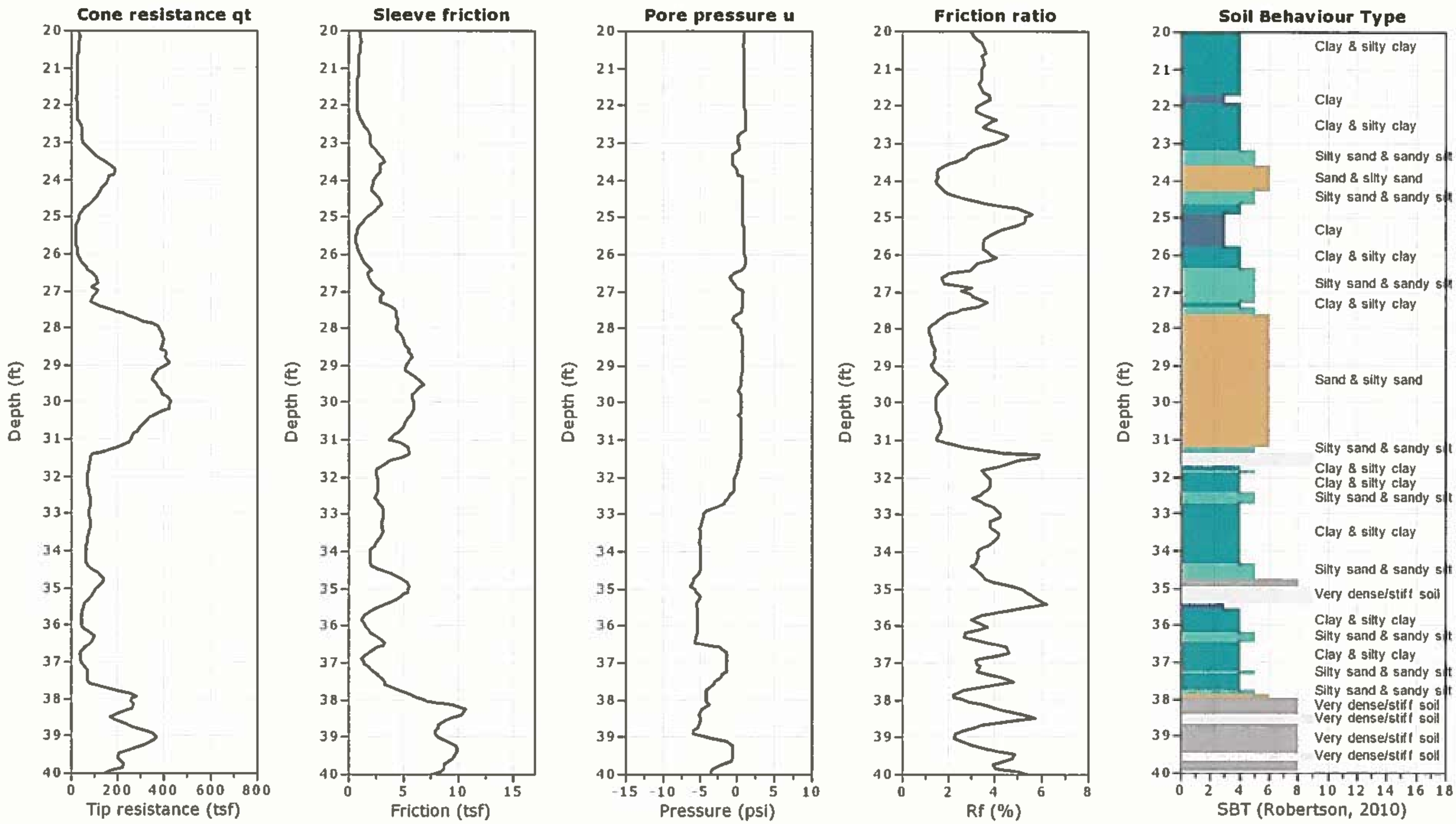
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-5
Total depth: 80.30 ft, Date: 4/21/2015
Cone Type: Vertek



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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

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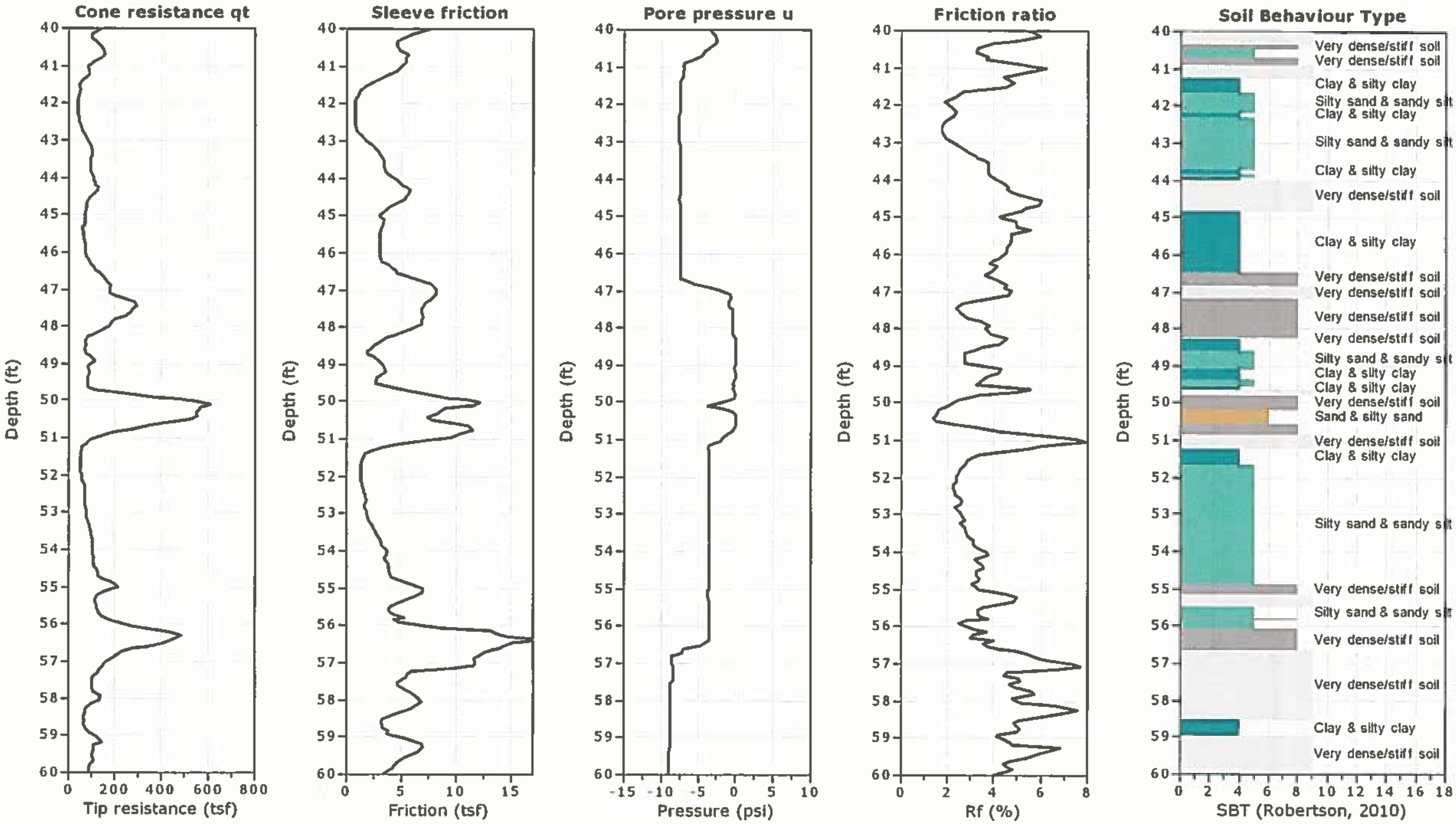

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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-5
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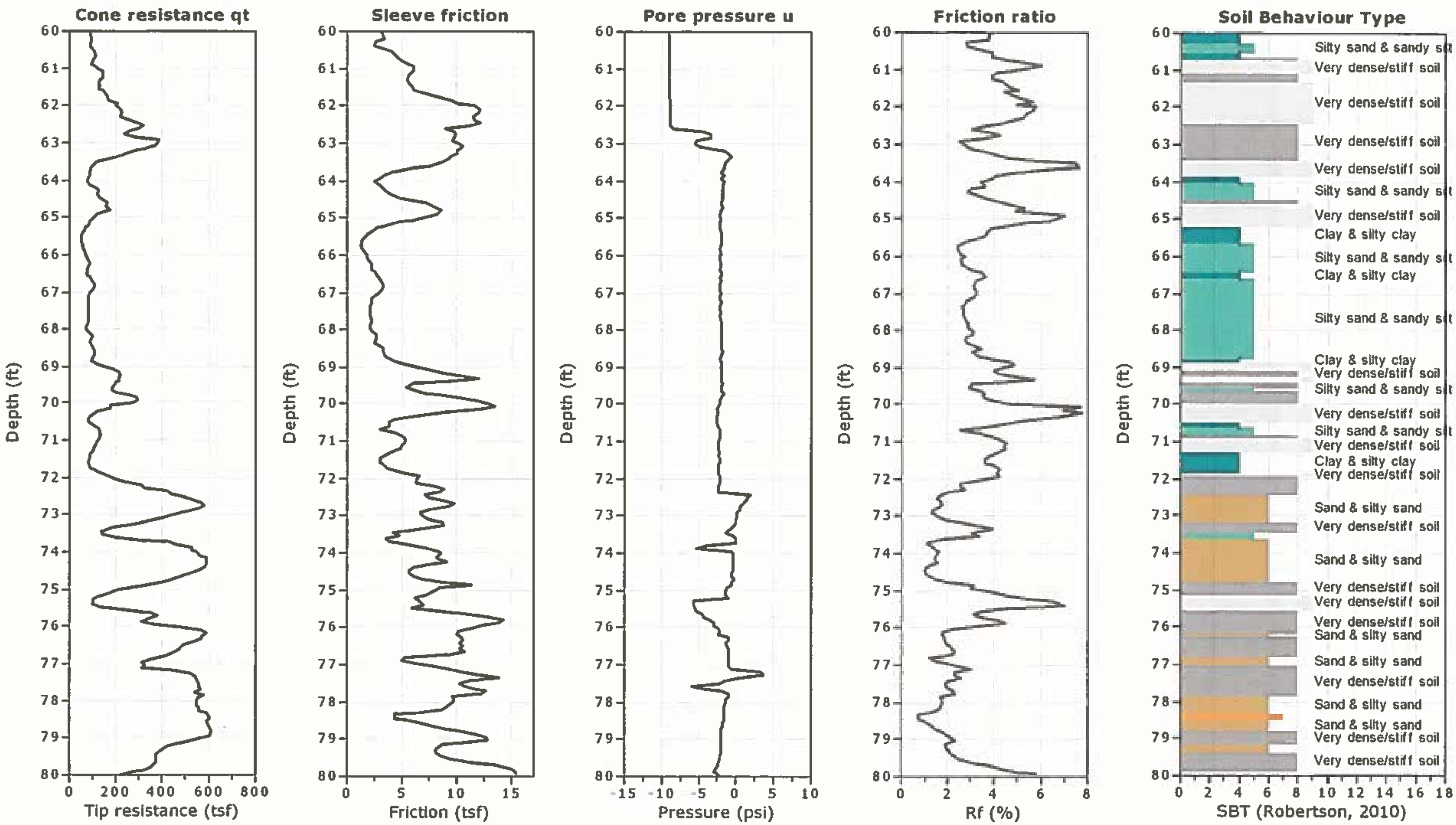

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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

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Total depth: 80.49 ft, Date: 4/21/2015
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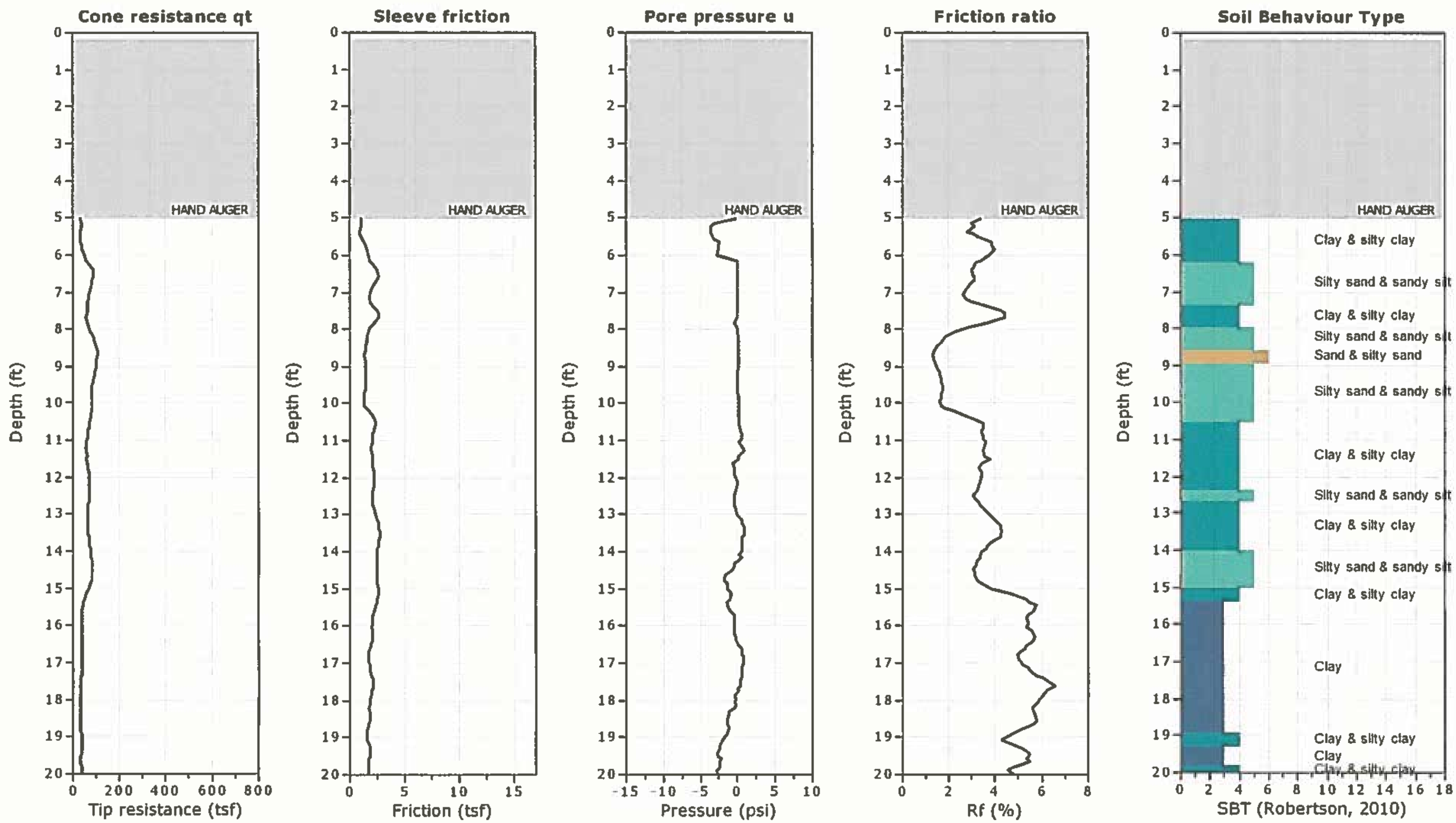

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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-6
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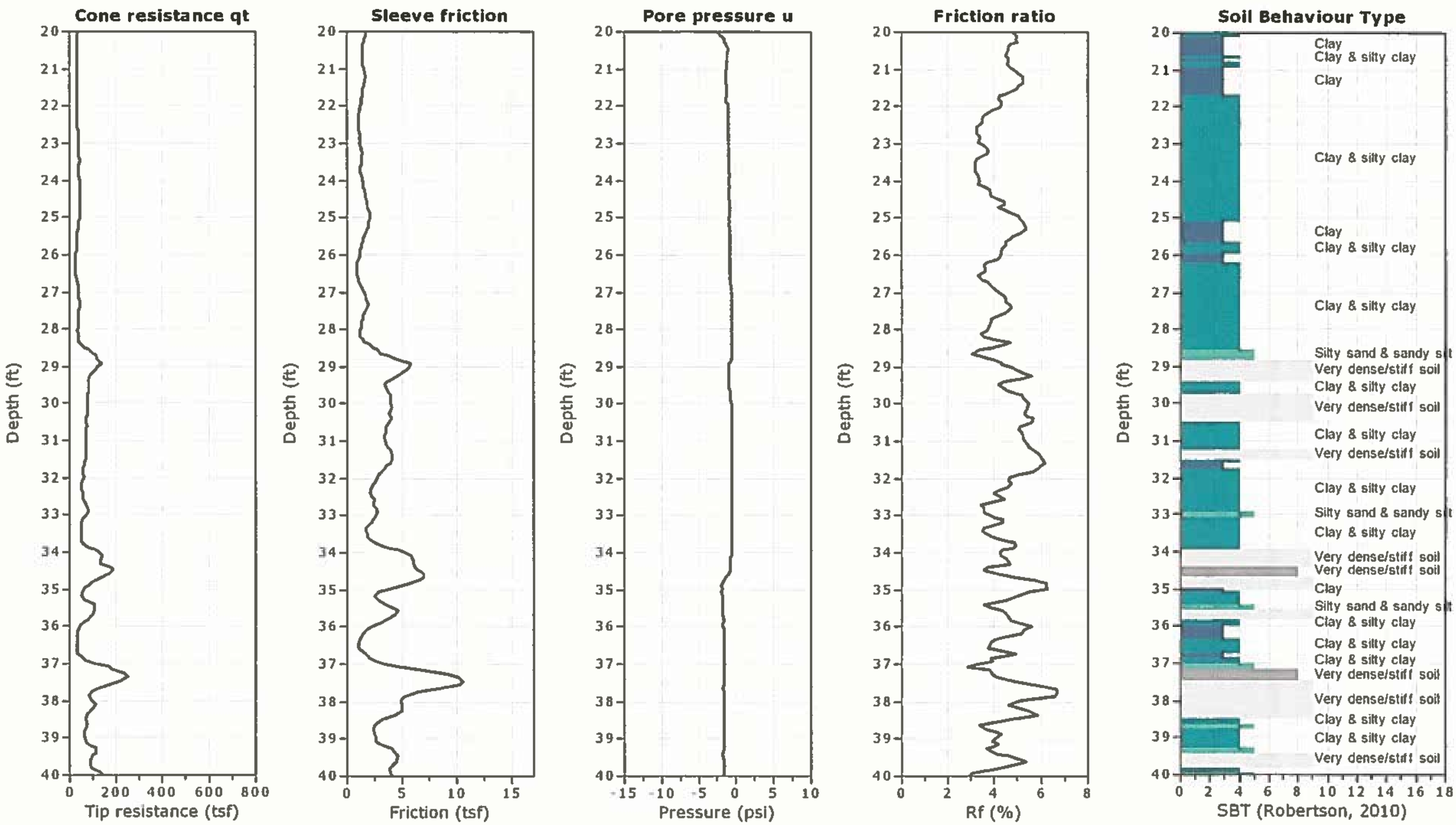

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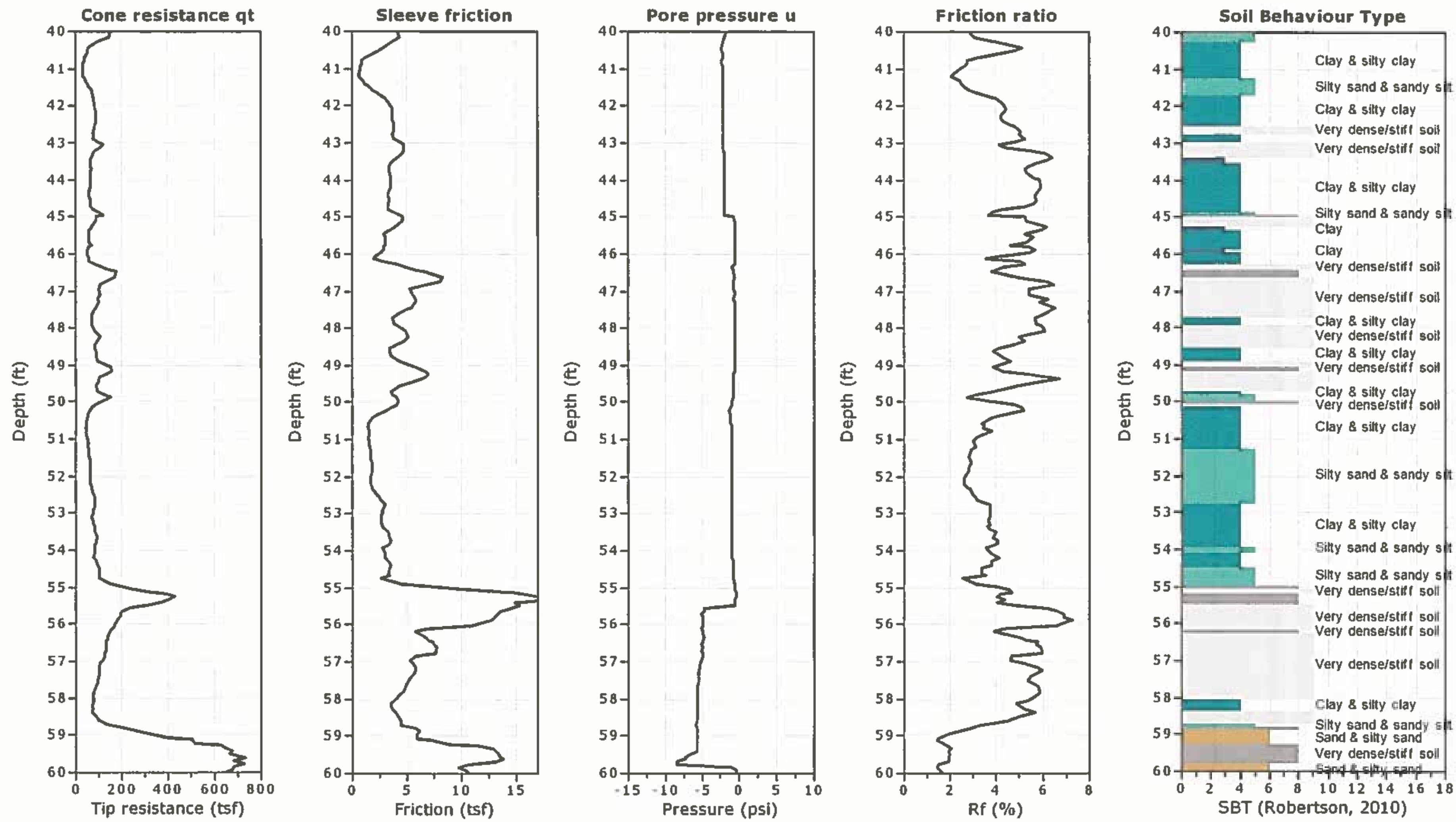
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-6
Total depth: 80.49 ft, Date: 4/21/2015
Cone Type: Vertek



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Project: Applied Earth Sciences
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CPT: CPT-6
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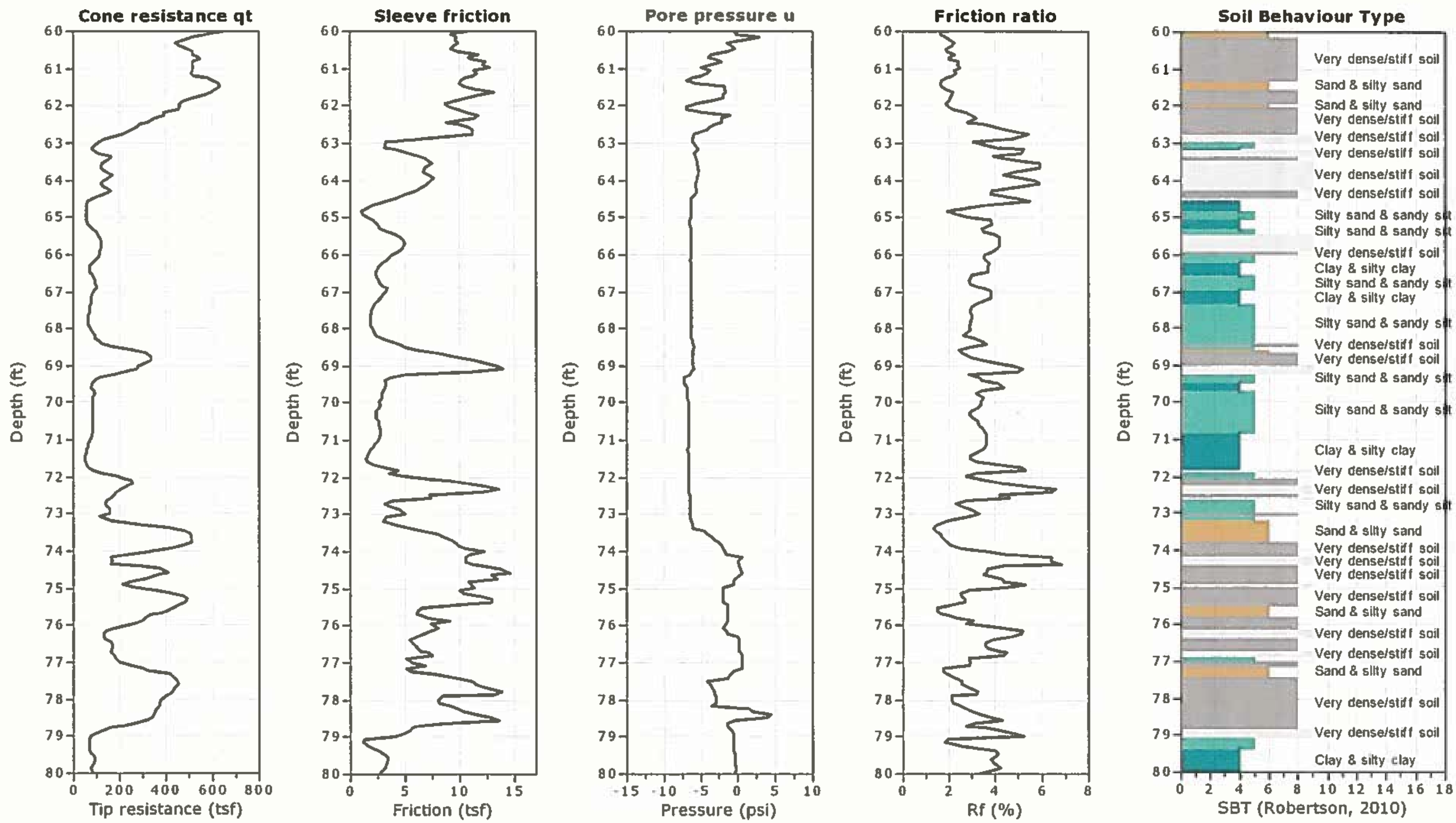
Cone Type: Vertek



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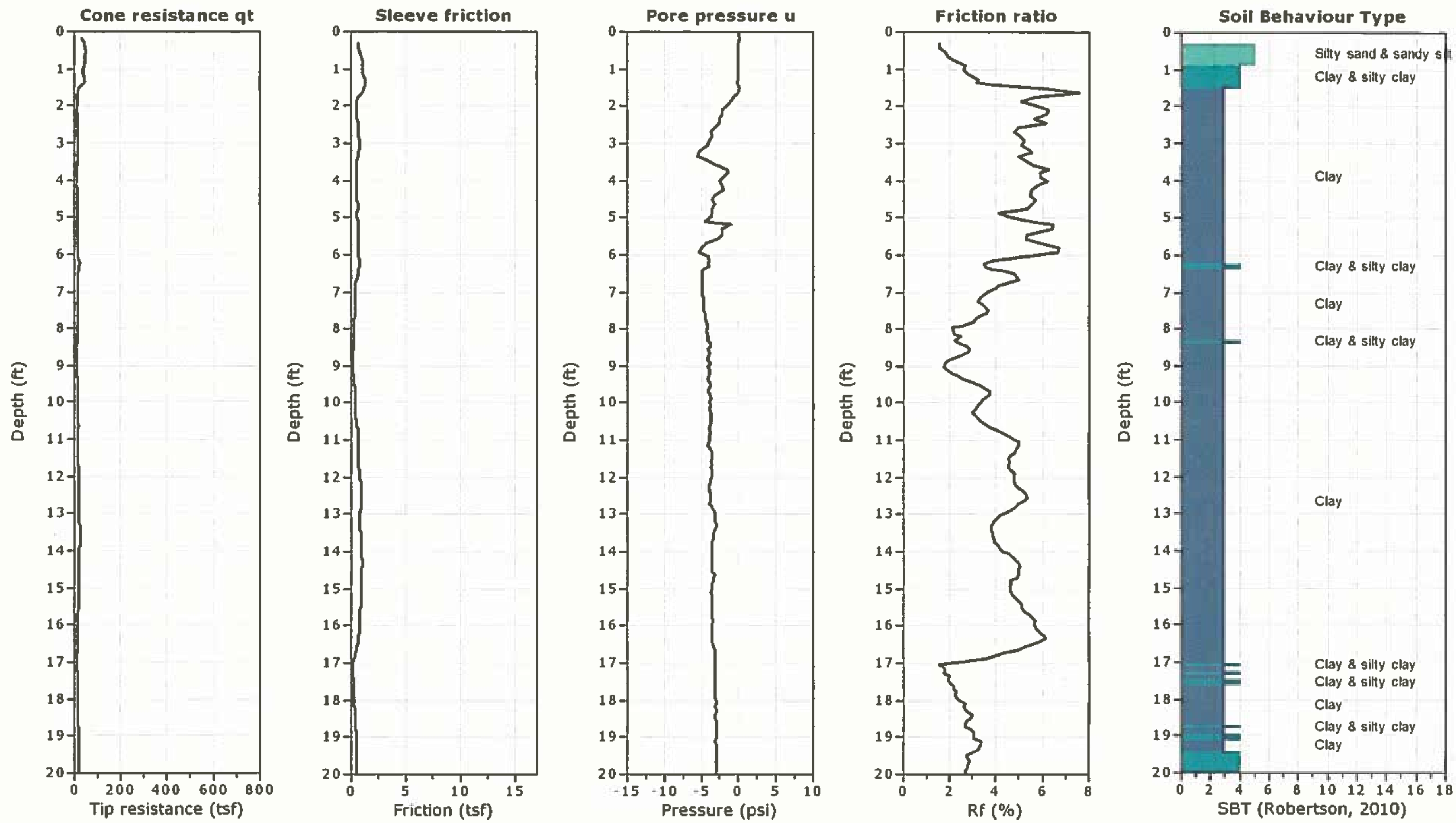
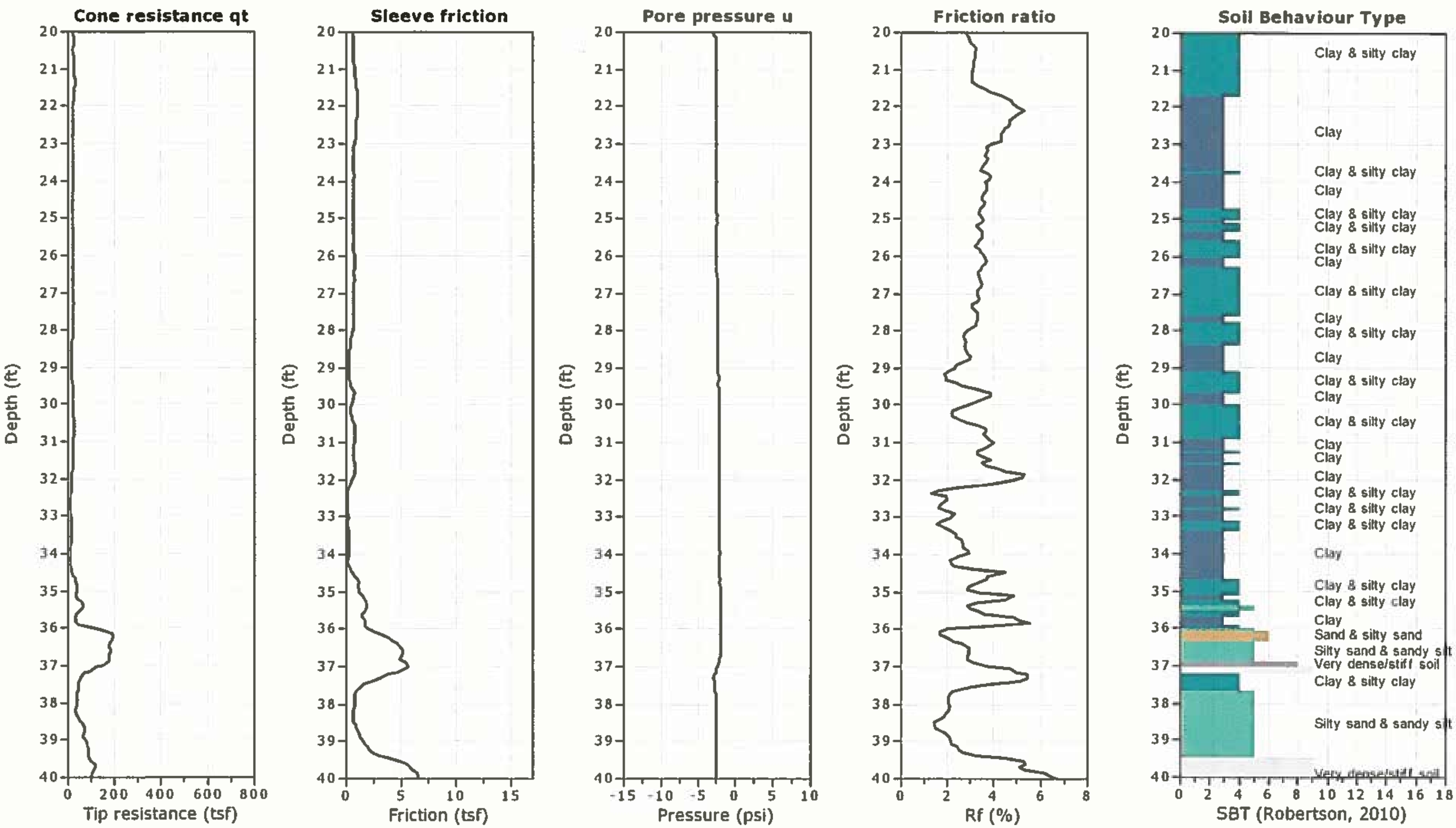
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-7
Total depth: 71.39 ft, Date: 4/21/2015
Cone Type: Vertek



Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-7
Total depth: 71.39 ft, Date: 4/21/2015
Cone Type: Vertek



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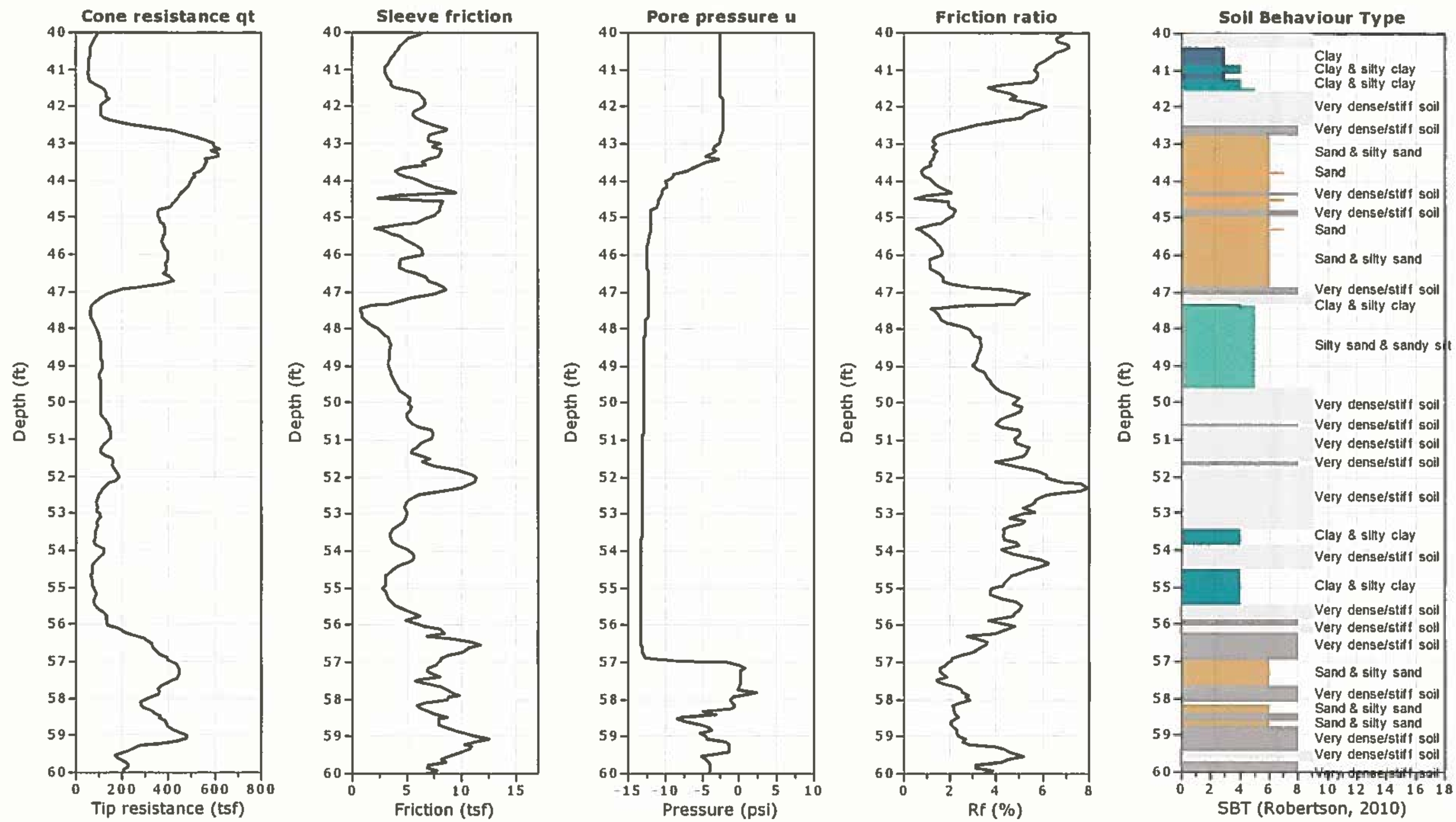
www.kehoetesting.com

Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-7
Total depth: 71.39 ft, Date: 4/21/2015
Cone Type: Vertek



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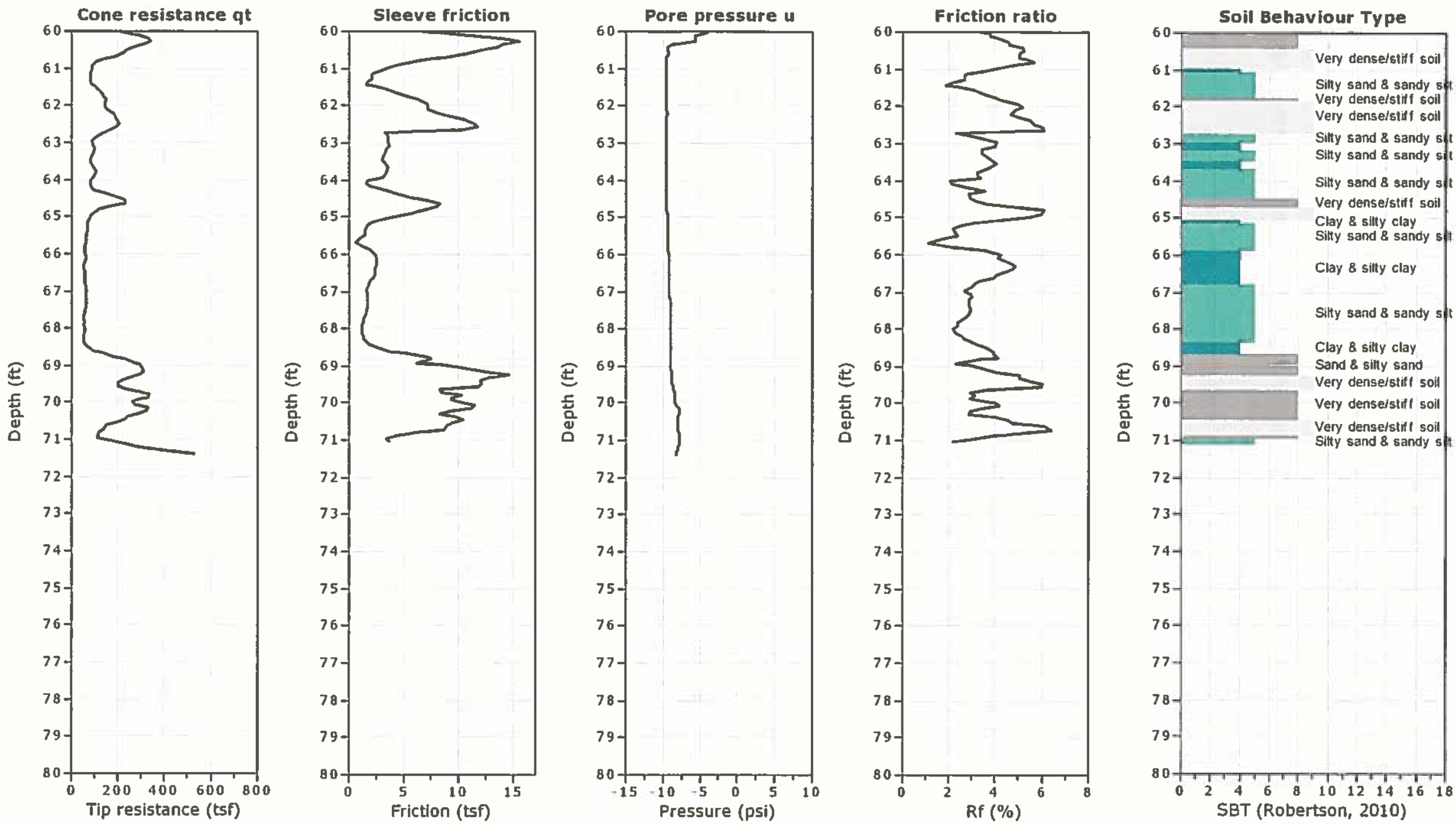
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-7
Total depth: 71.39 ft, Date: 4/21/2015
Cone Type: Vertek



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Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-8
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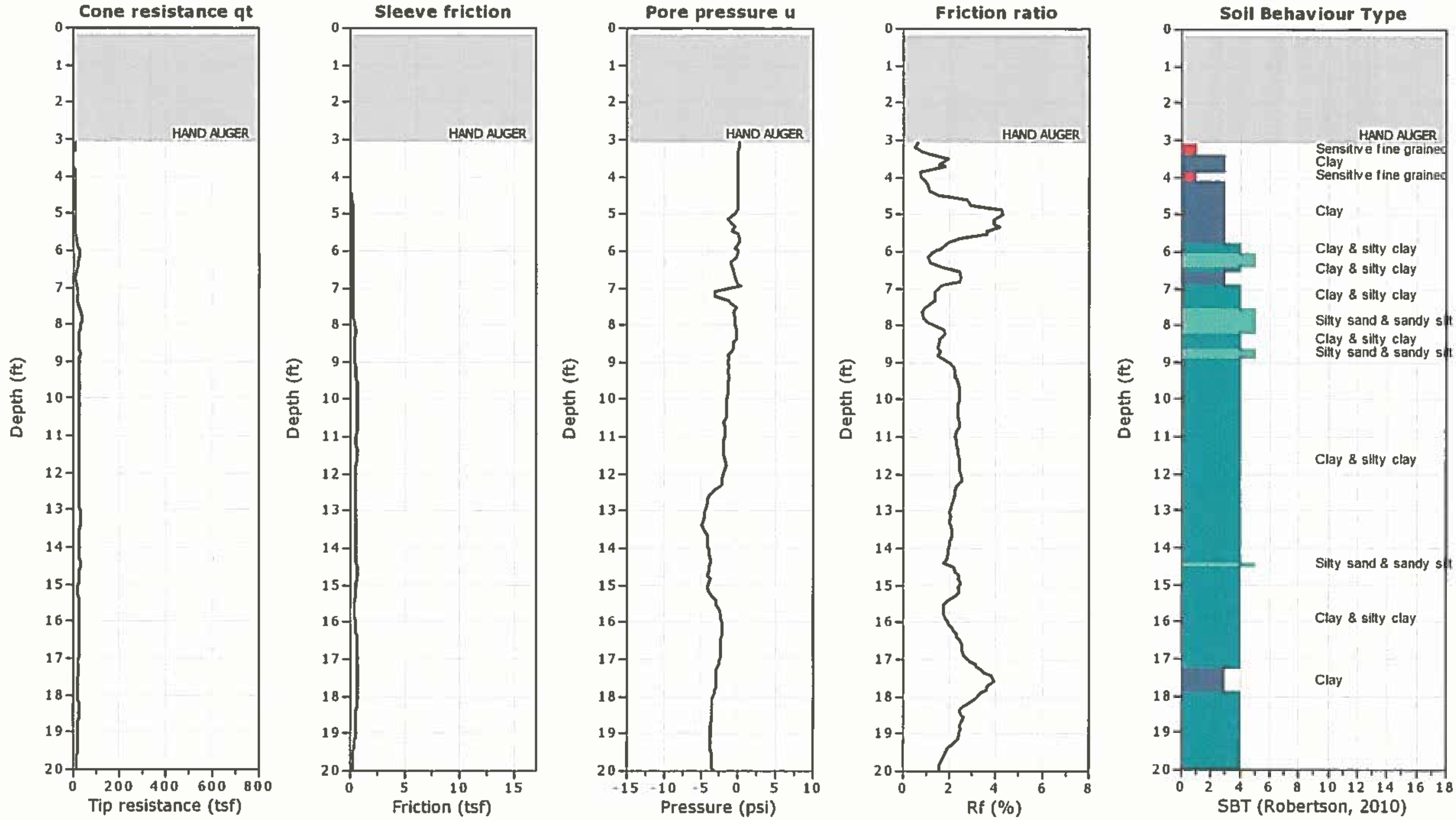
Cone Type: Vertek



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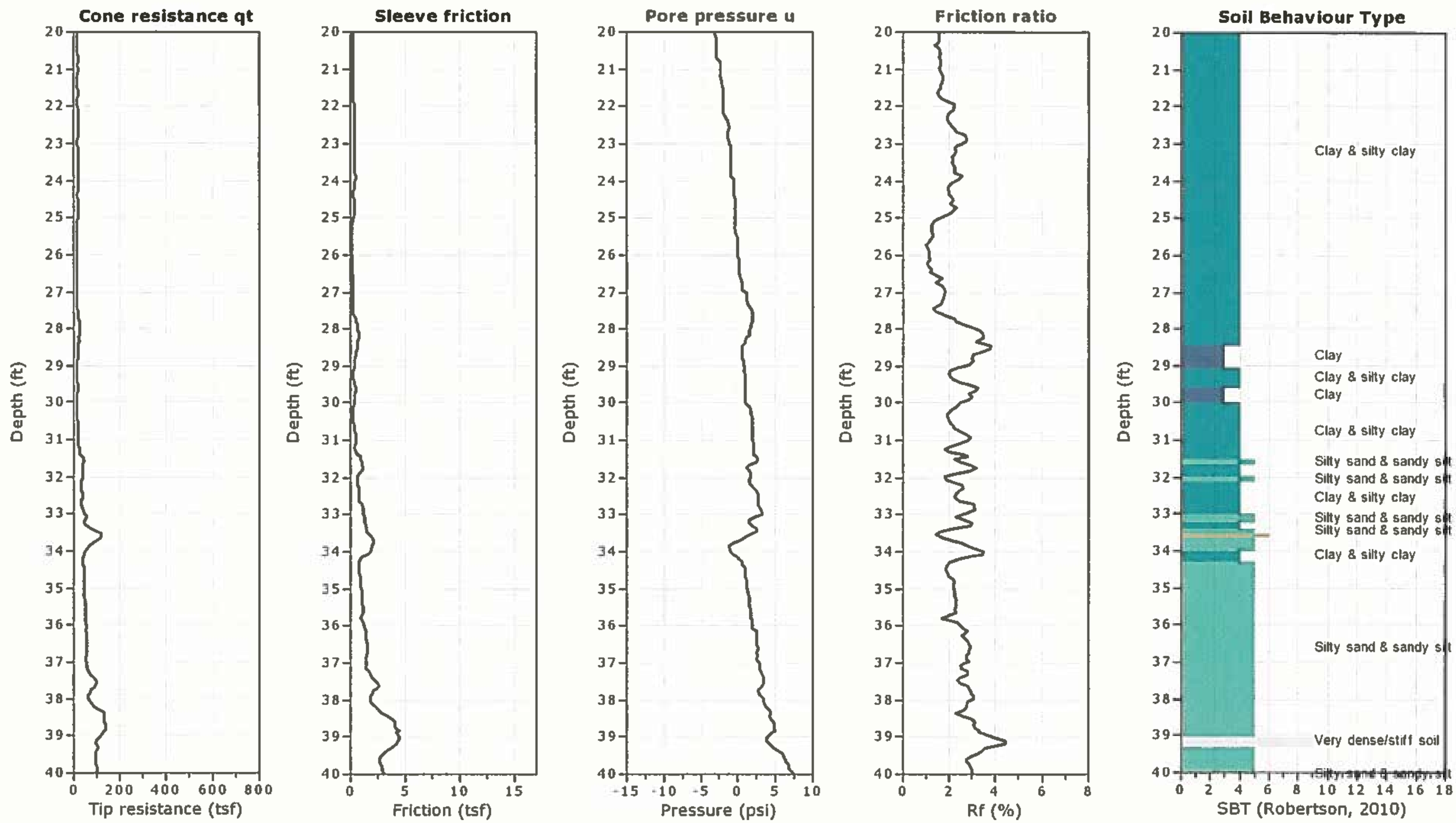
rich@kehoetesting.com
www.kehoetesting.com

Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-8
Total depth: 80.52 ft, Date: 5/12/2015
Cone Type: Vertek



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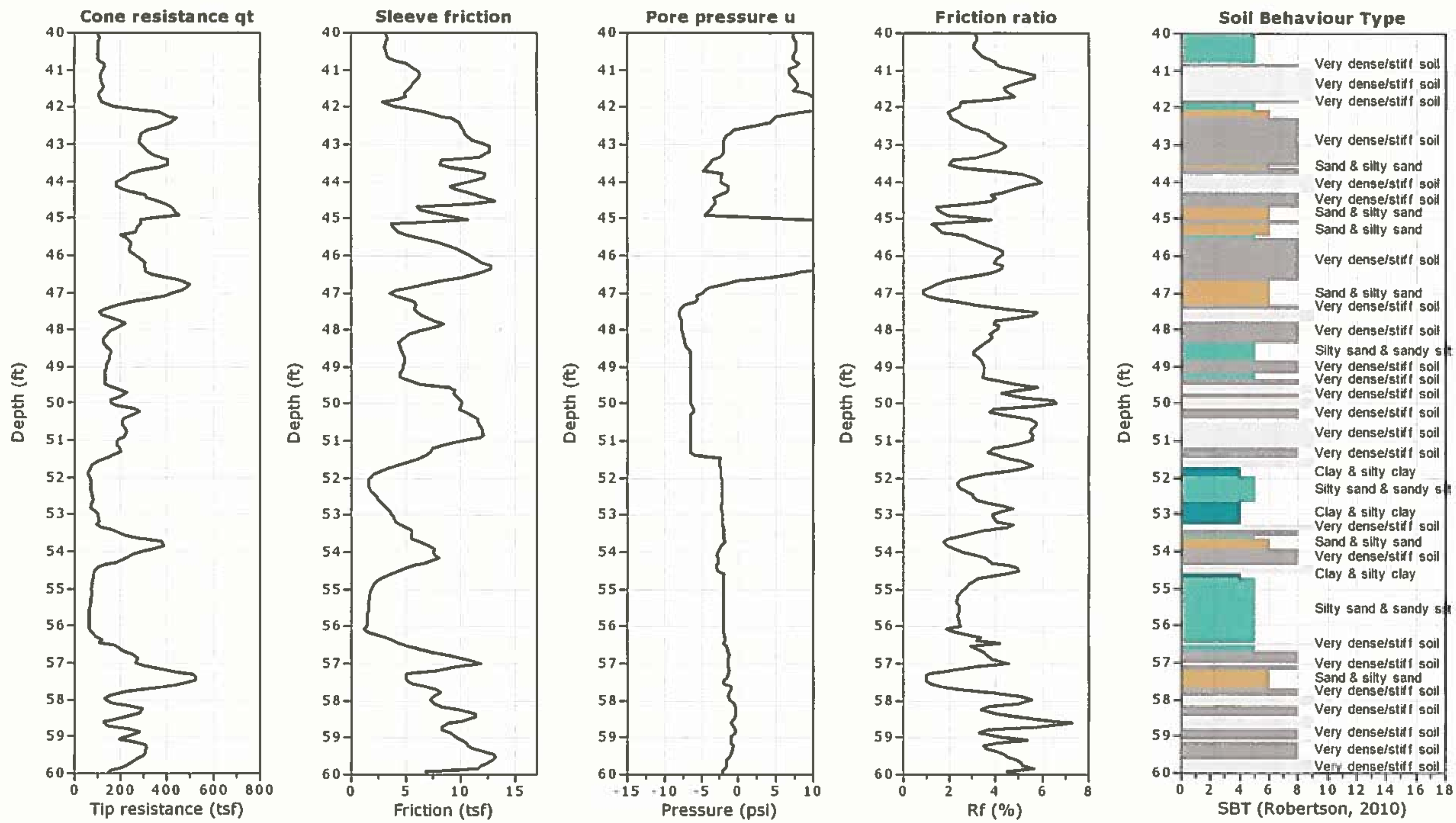
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-8
Total depth: 80.52 ft, Date: 5/12/2015
Cone Type: Vertek



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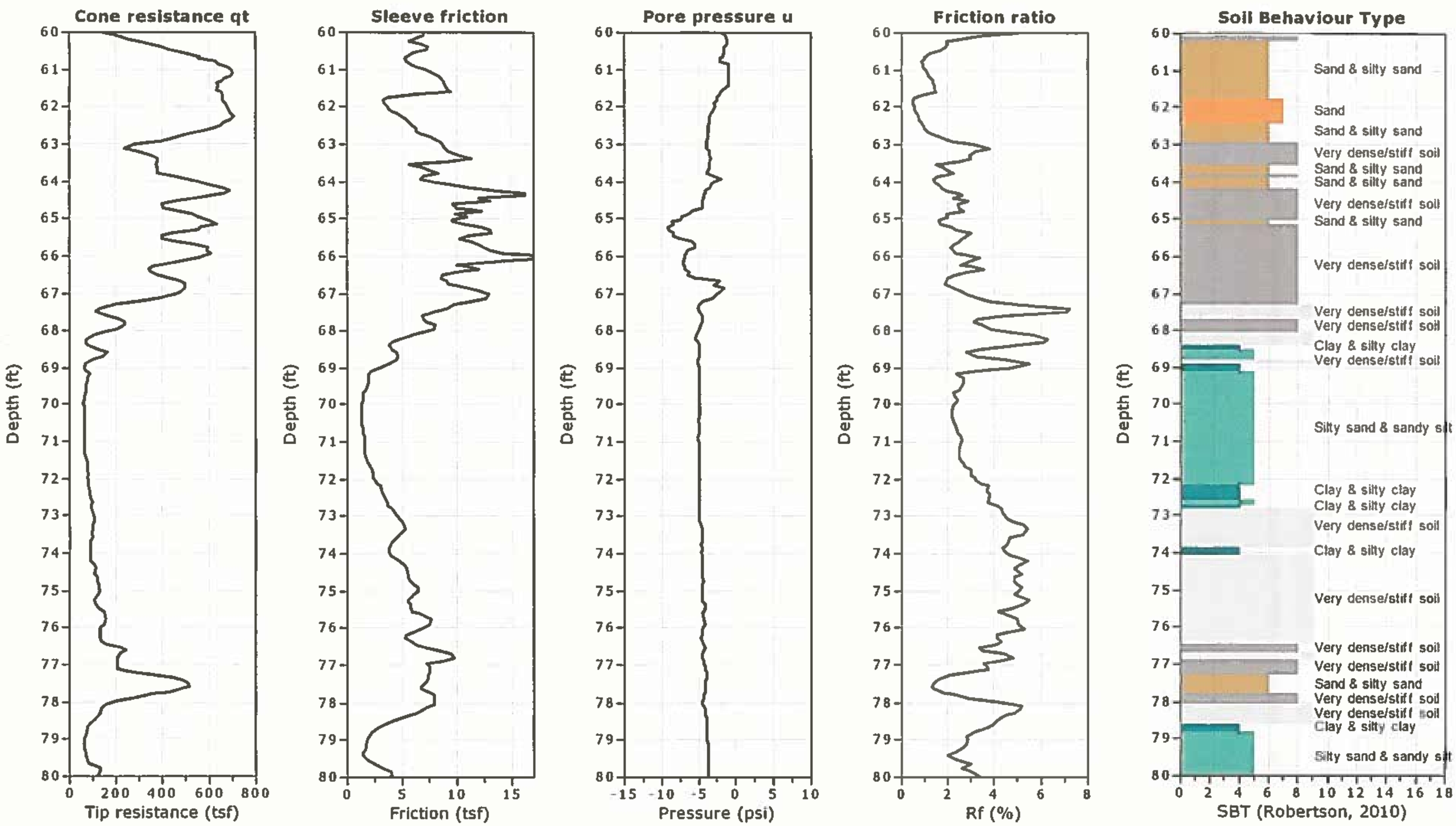
rich@kehoetesting.com
www.kehoetesting.com

Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-8
Total depth: 80.52 ft, Date: 5/12/2015
Cone Type: Vertek



CPeT-IT v.1.7.6.42 - CPTU data presentation & interpretation software - Report created on: 5/15/2015, 8:05:58 AM
Project file: C:\AppliedLosAngeles4-5-15\CPeT Data\Plot Data\Plots w-ha.cpt

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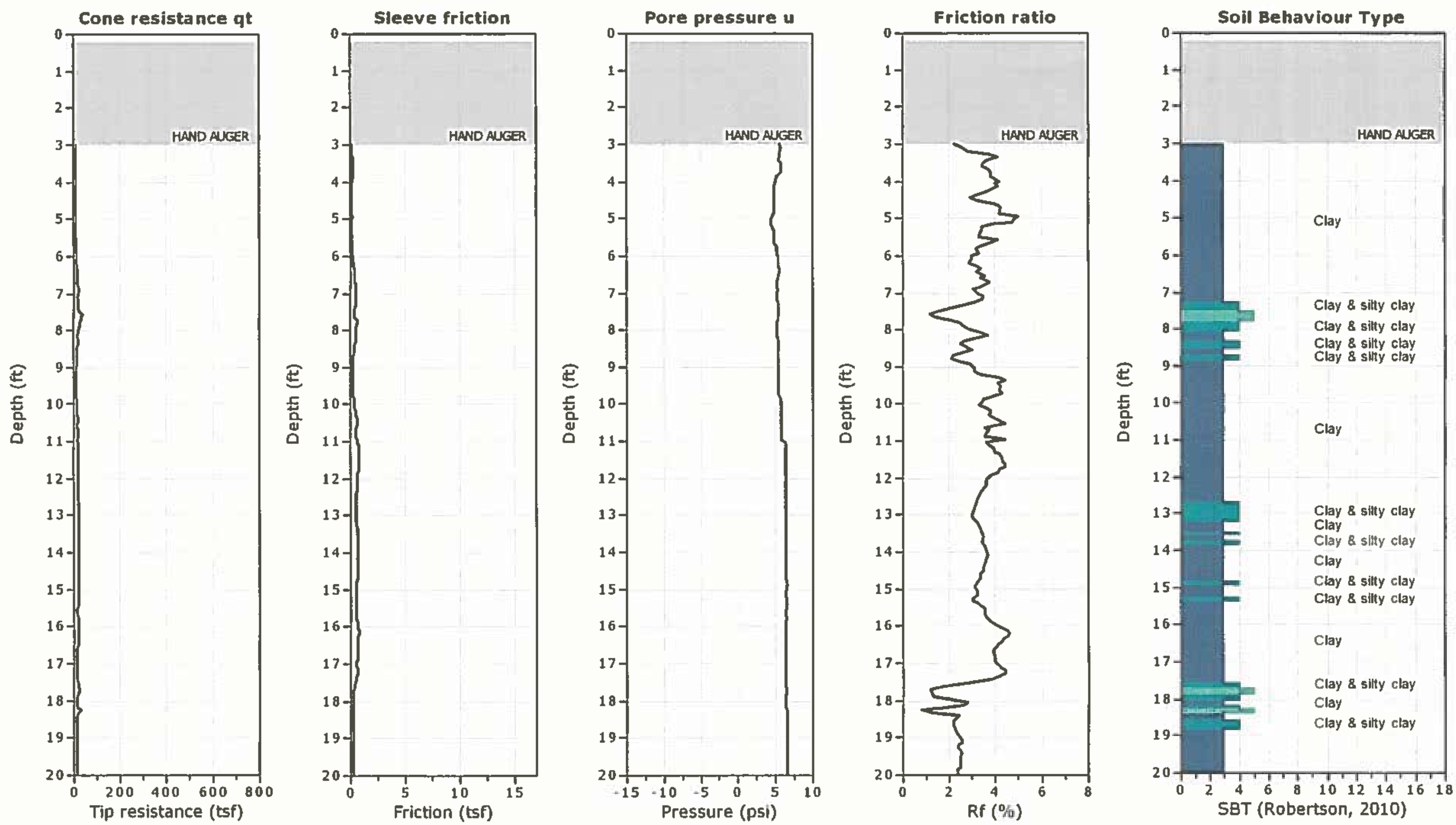
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-9
Total depth: 79.29 ft, Date: 5/12/2015
Cone Type: Vertek



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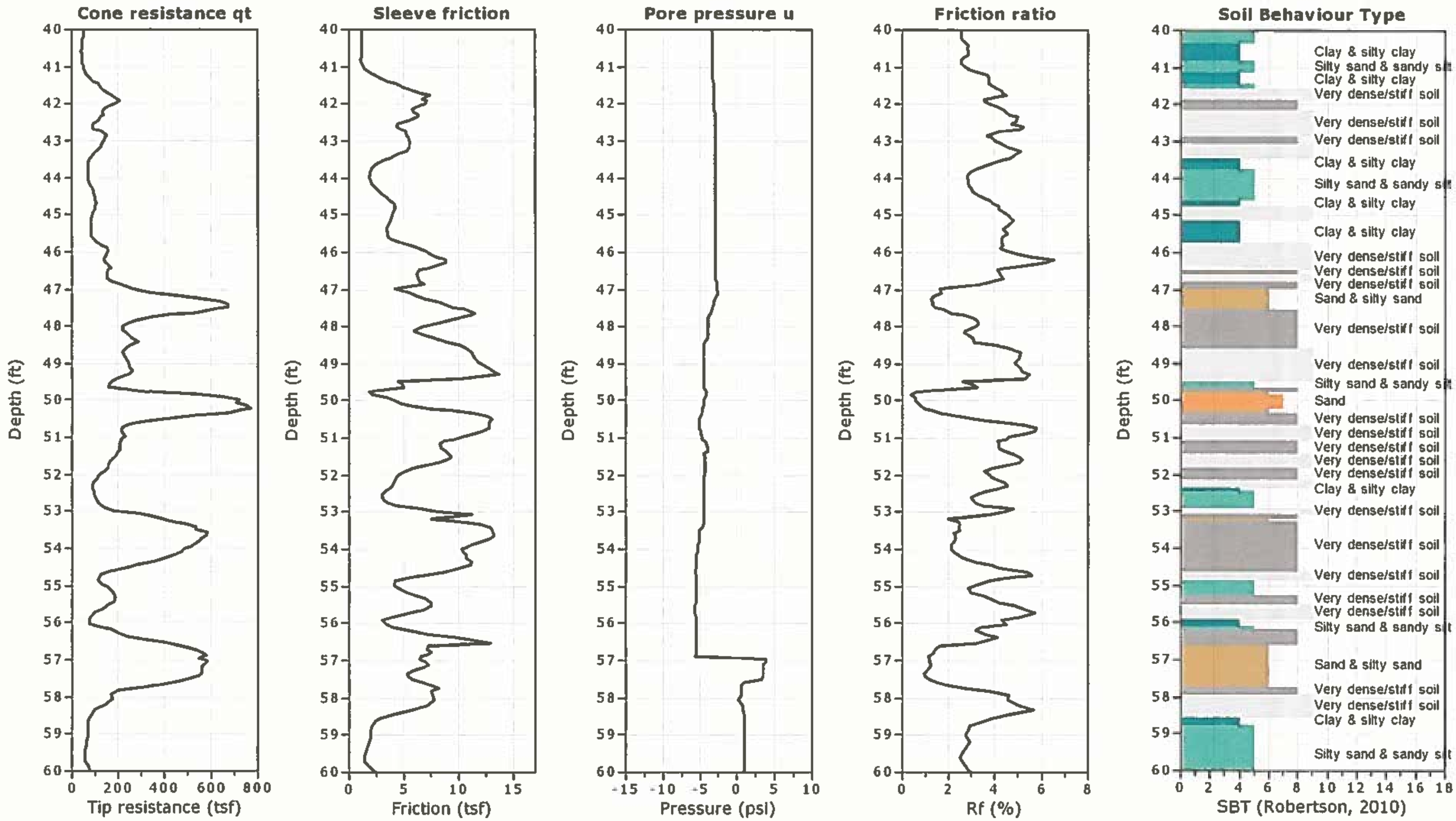
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-9
Total depth: 79.29 ft, Date: 5/12/2015
Cone Type: Vertek



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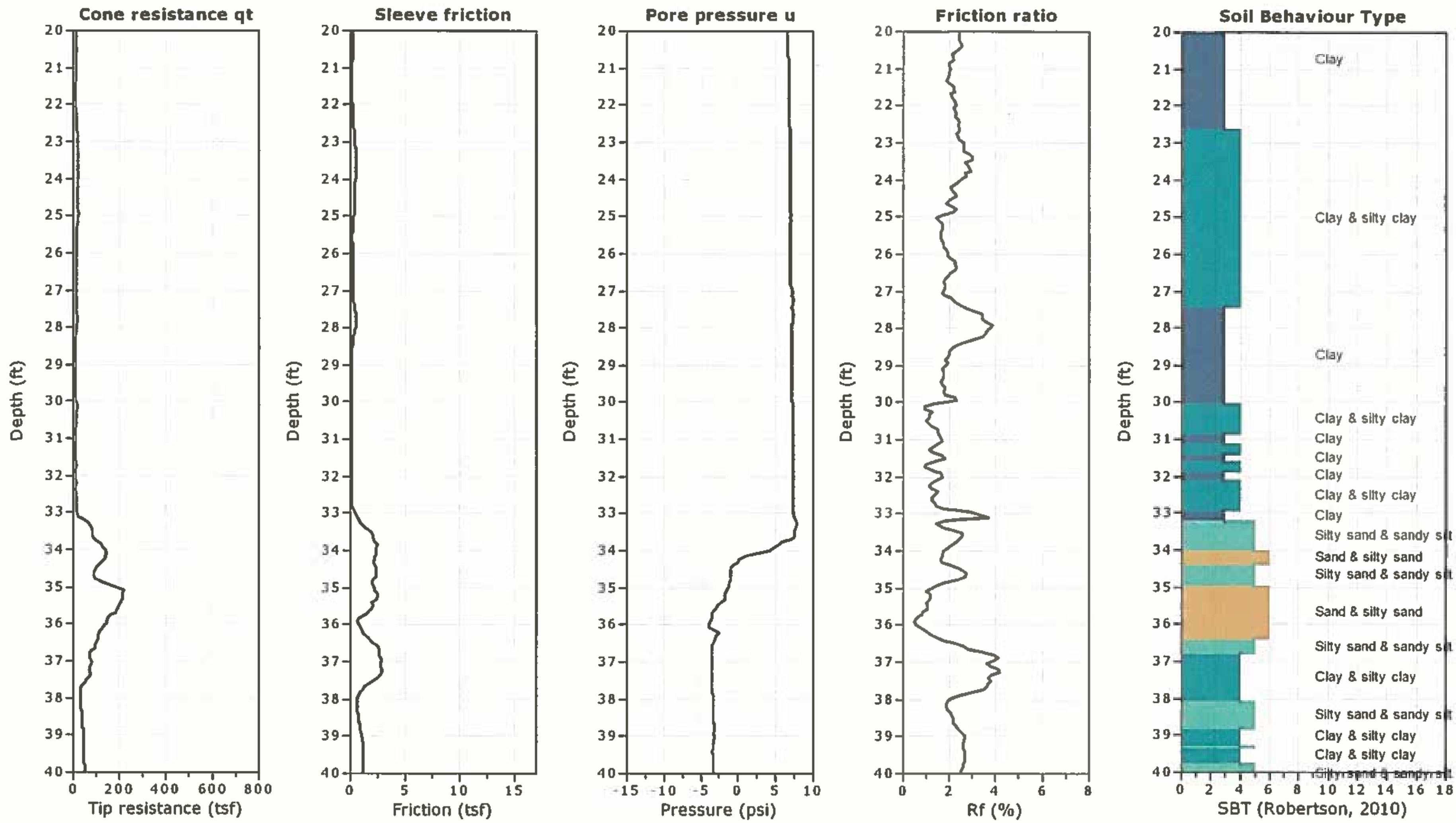
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-9
Total depth: 79.29 ft, Date: 5/12/2015
Cone Type: Vertek



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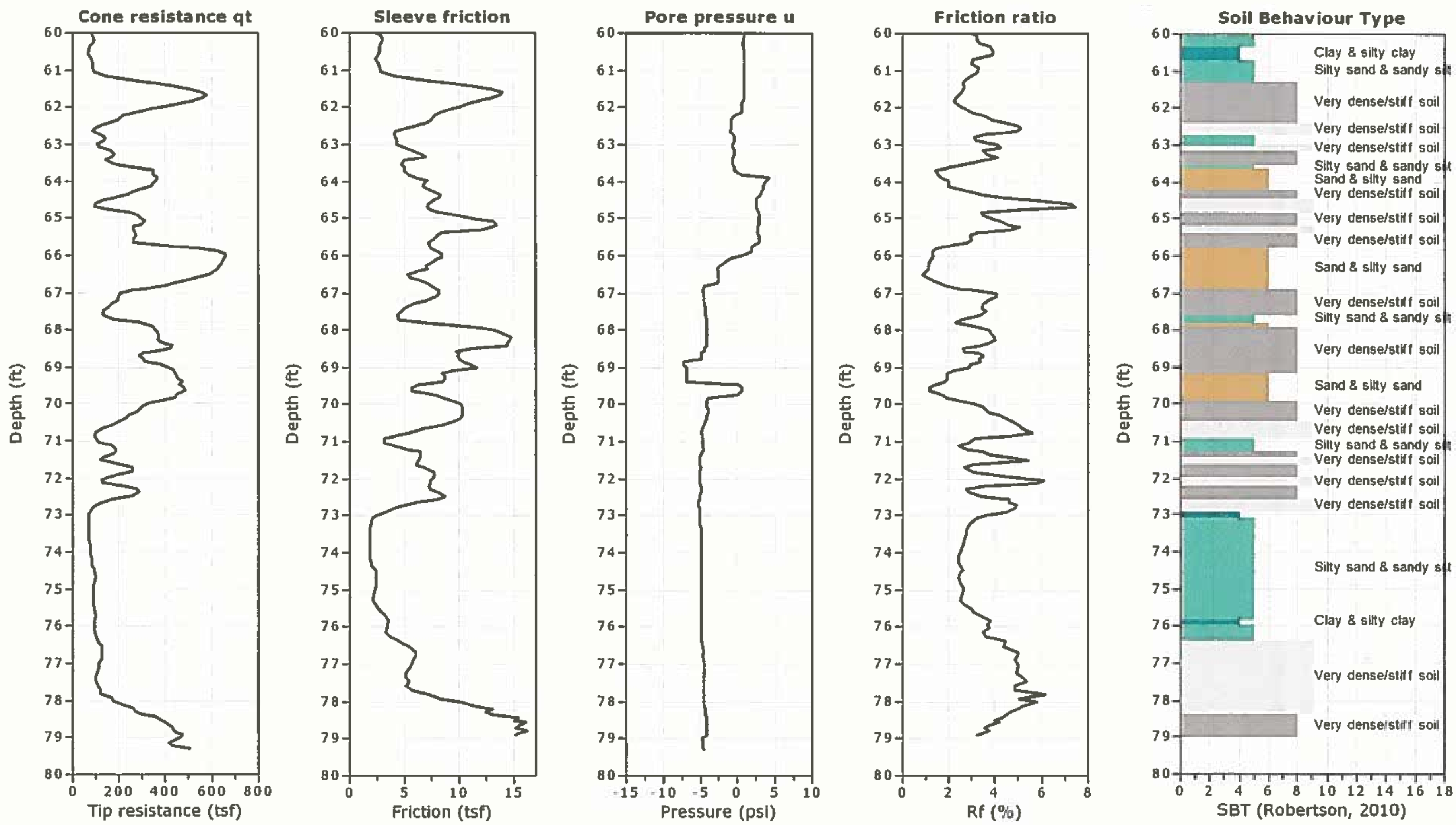
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-9
Total depth: 79.29 ft, Date: 5/12/2015
Cone Type: Vertek



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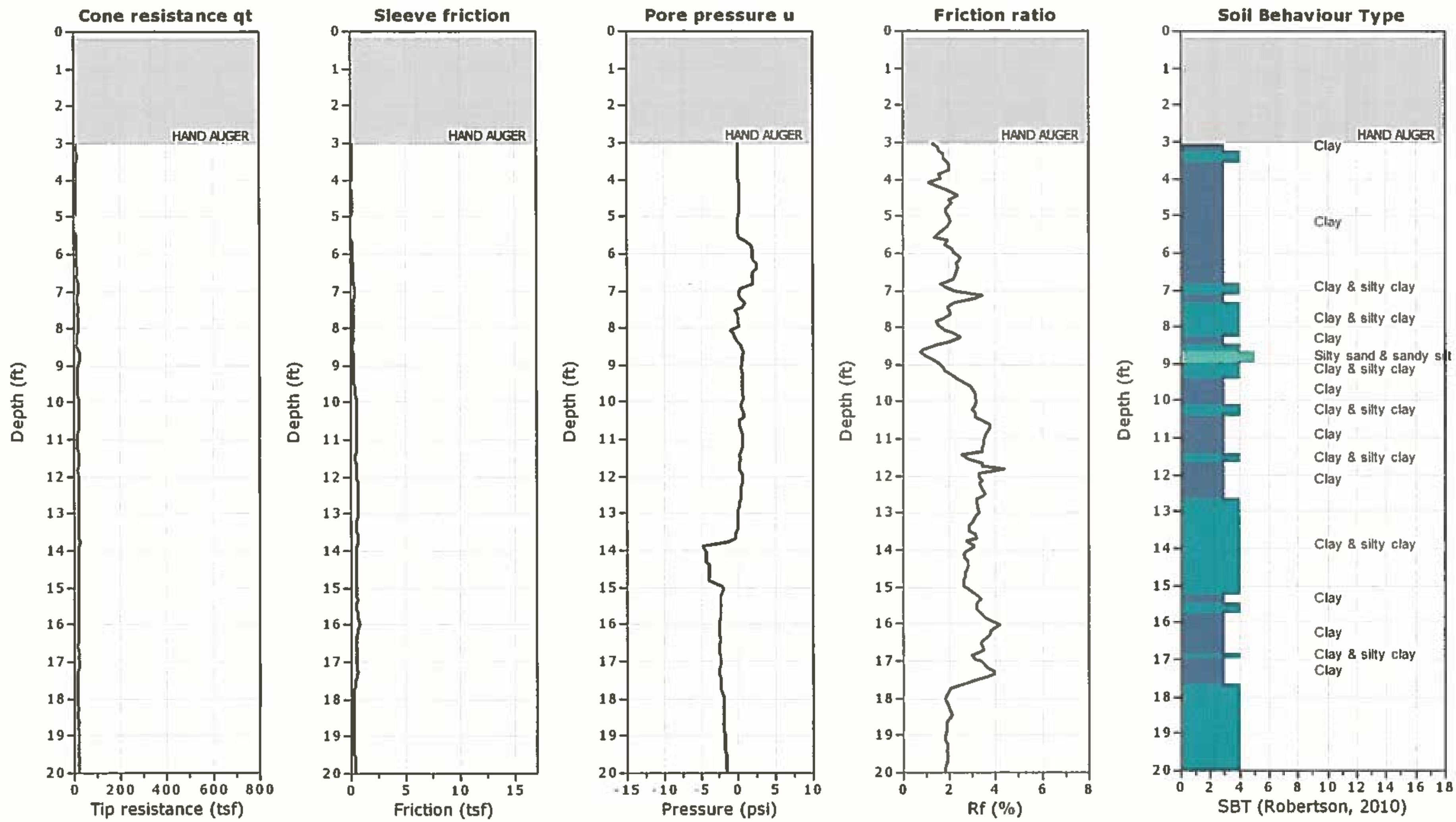
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-10
Total depth: 80.42 ft, Date: 5/12/2015
Cone Type: Vertek



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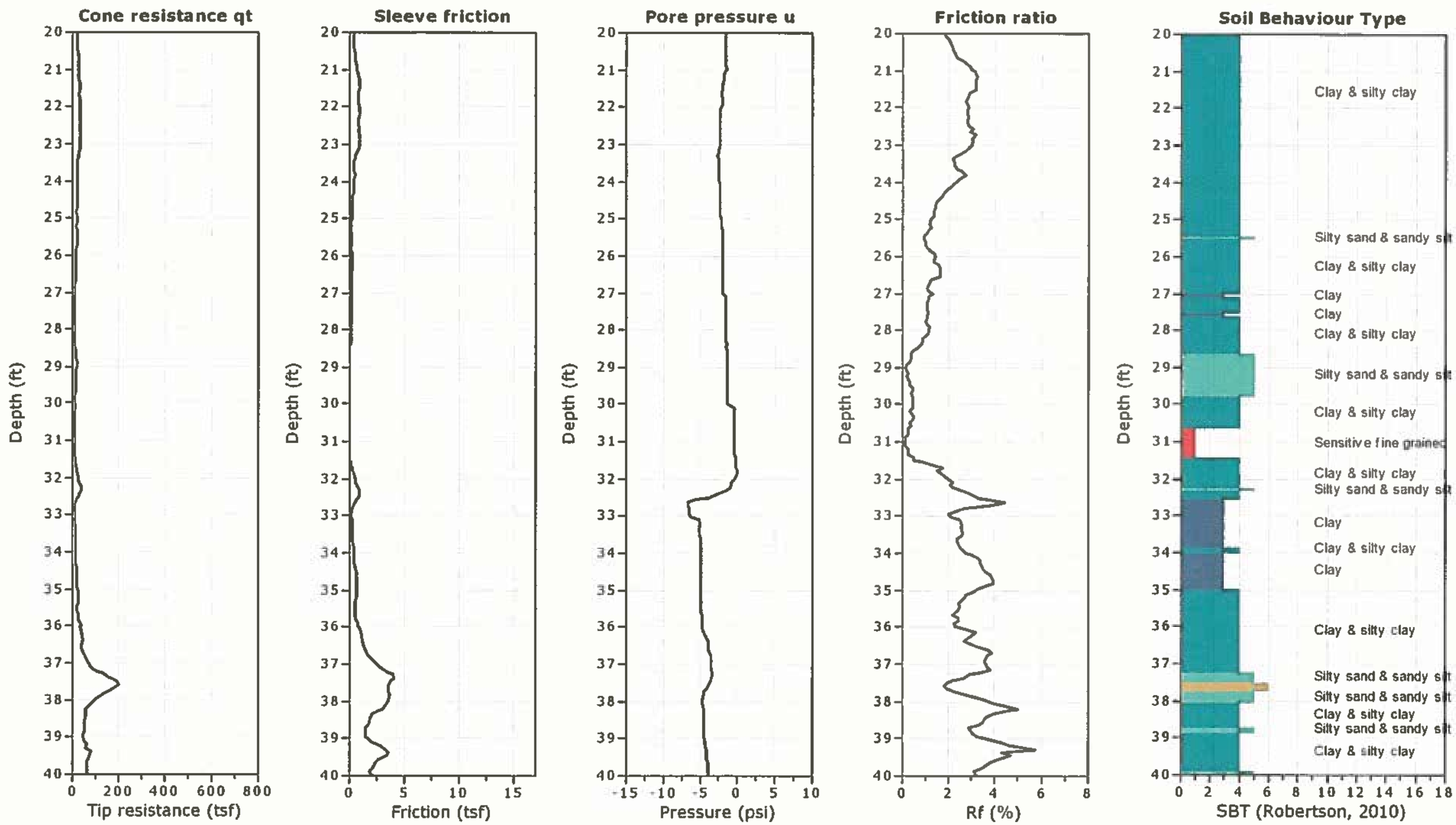
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-10
Total depth: 80.42 ft, Date: 5/12/2015
Cone Type: Vertek



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Project file: C:\AppliedLosAngeles4-5-15\CPeT Data\Plot Data\Plots w-ha.cpt

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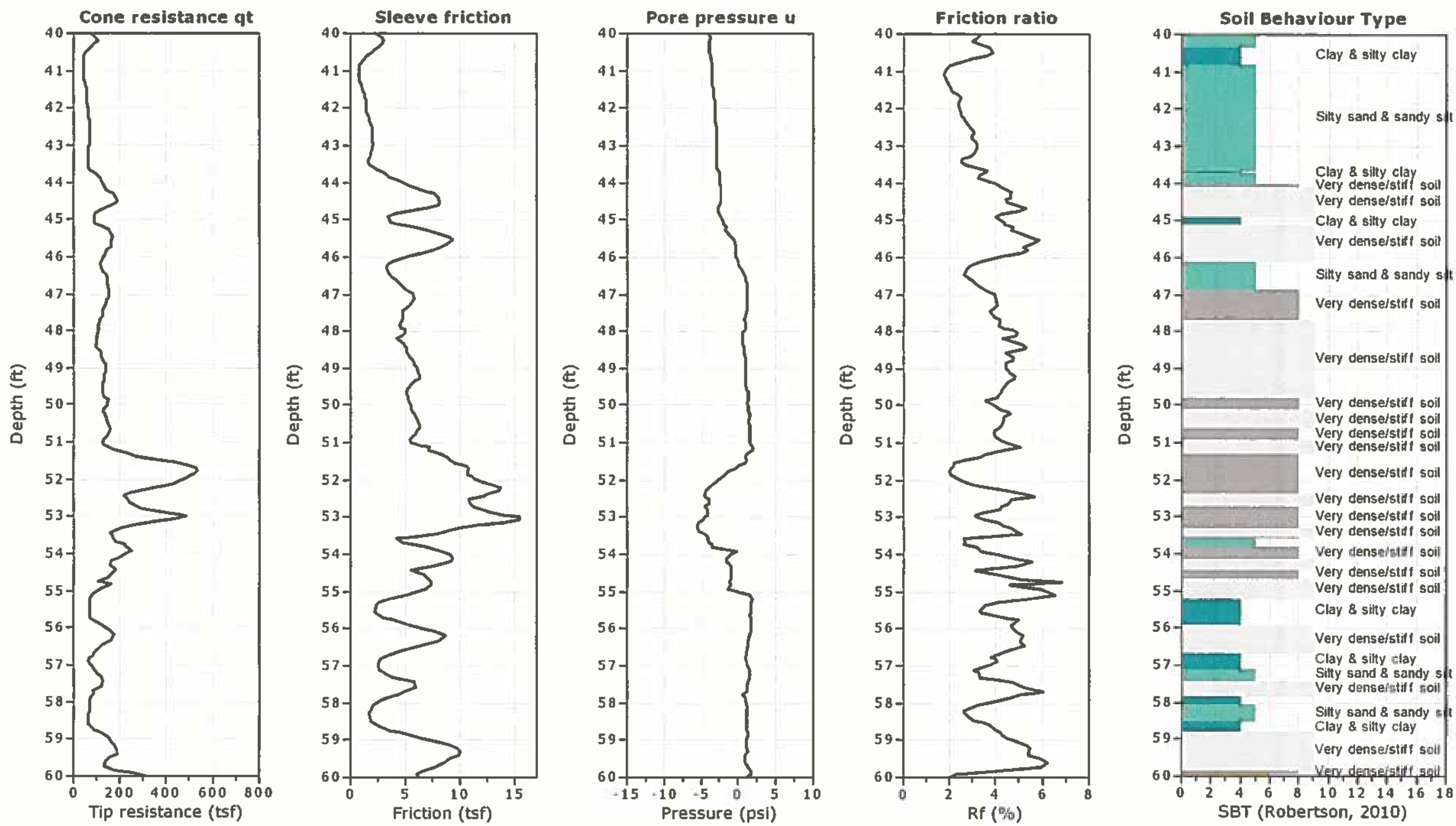
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-10
Total depth: 80.42 ft, Date: 5/12/2015
Cone Type: Vertek



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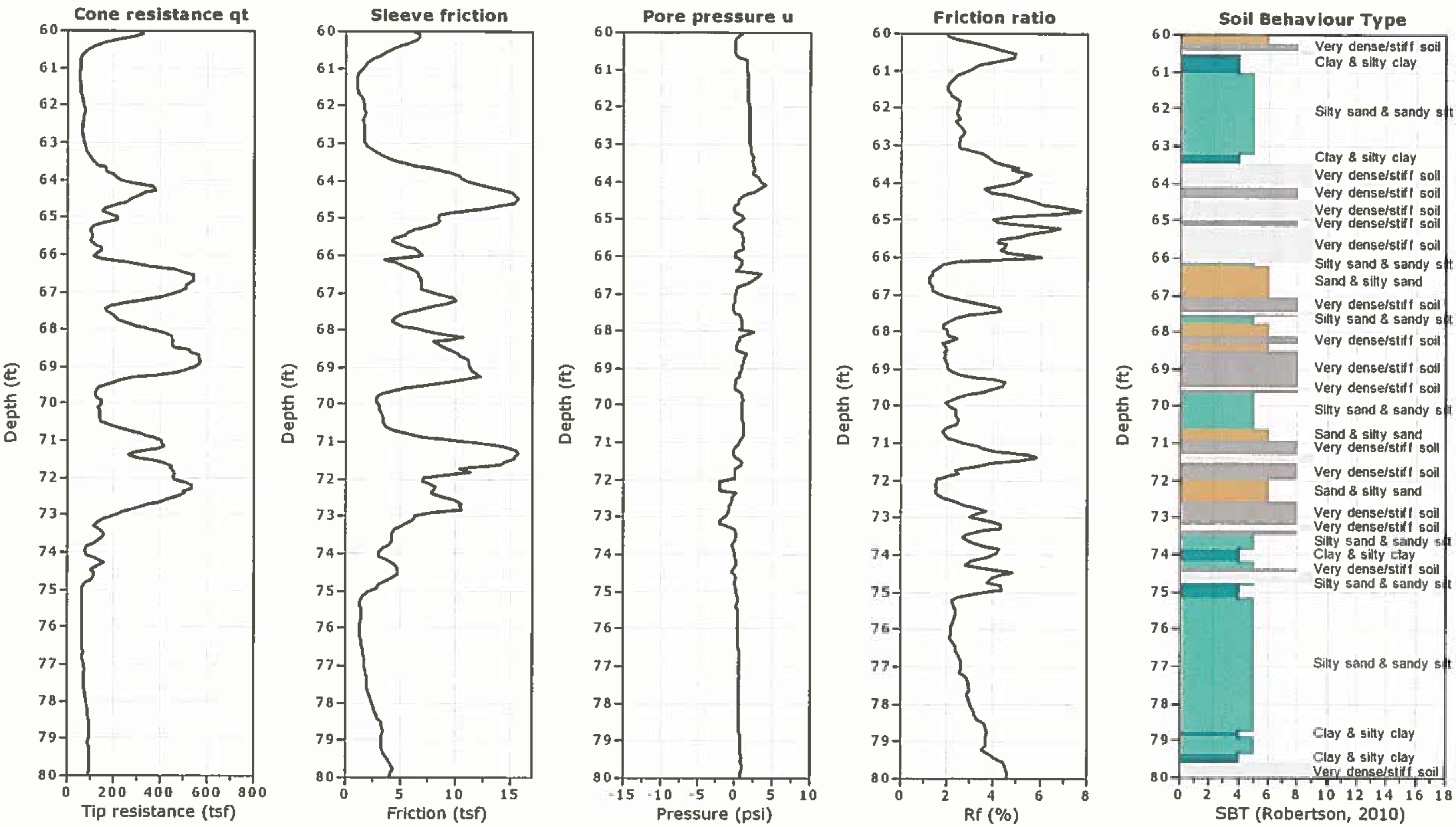
Project: Applied Earth Sciences

Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-10

Total depth: 80.42 ft, Date: 5/12/2015

Cone Type: Vertek



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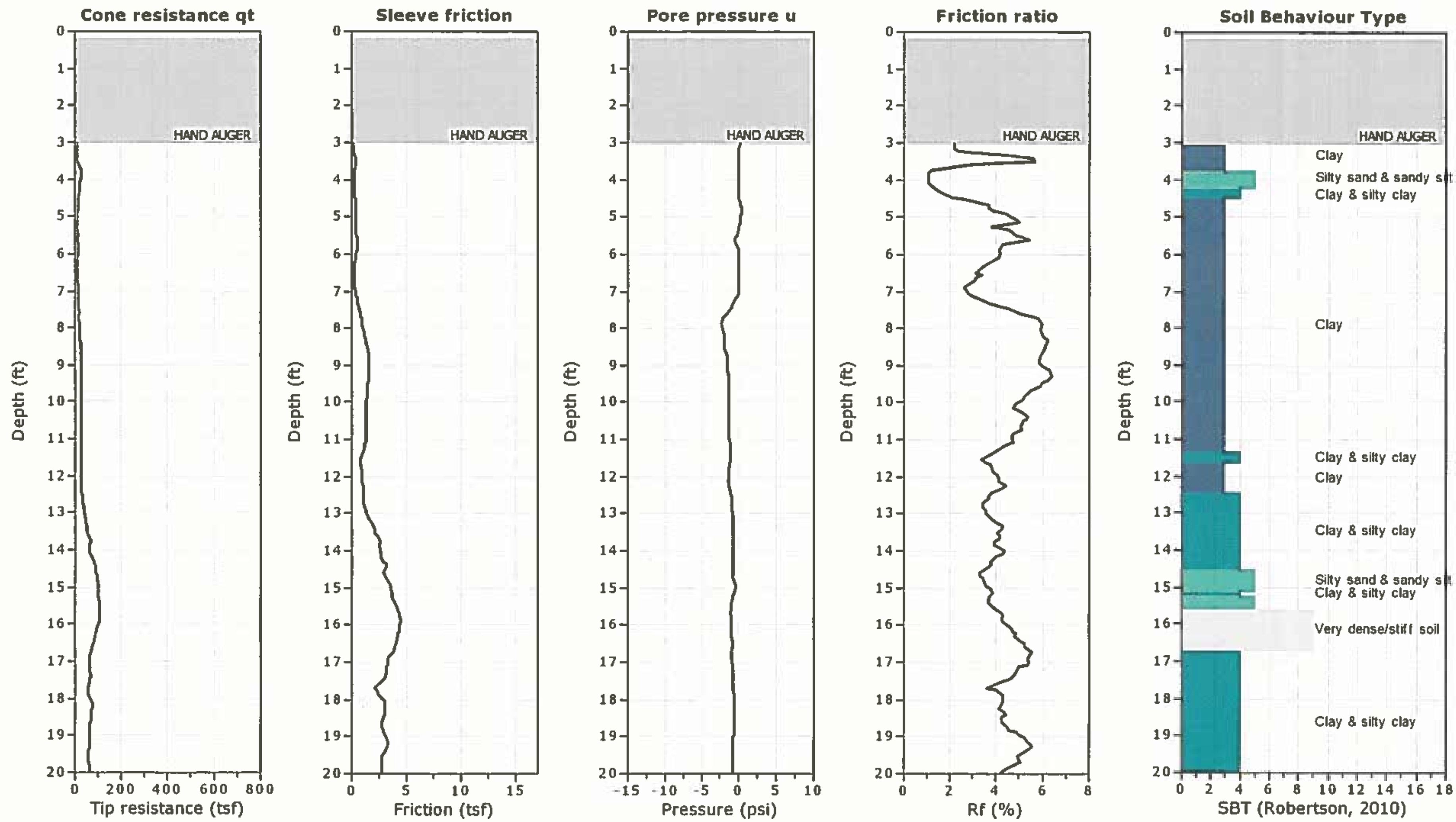
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-11
Total depth: 80.46 ft, Date: 5/12/2015
Cone Type: Vertek



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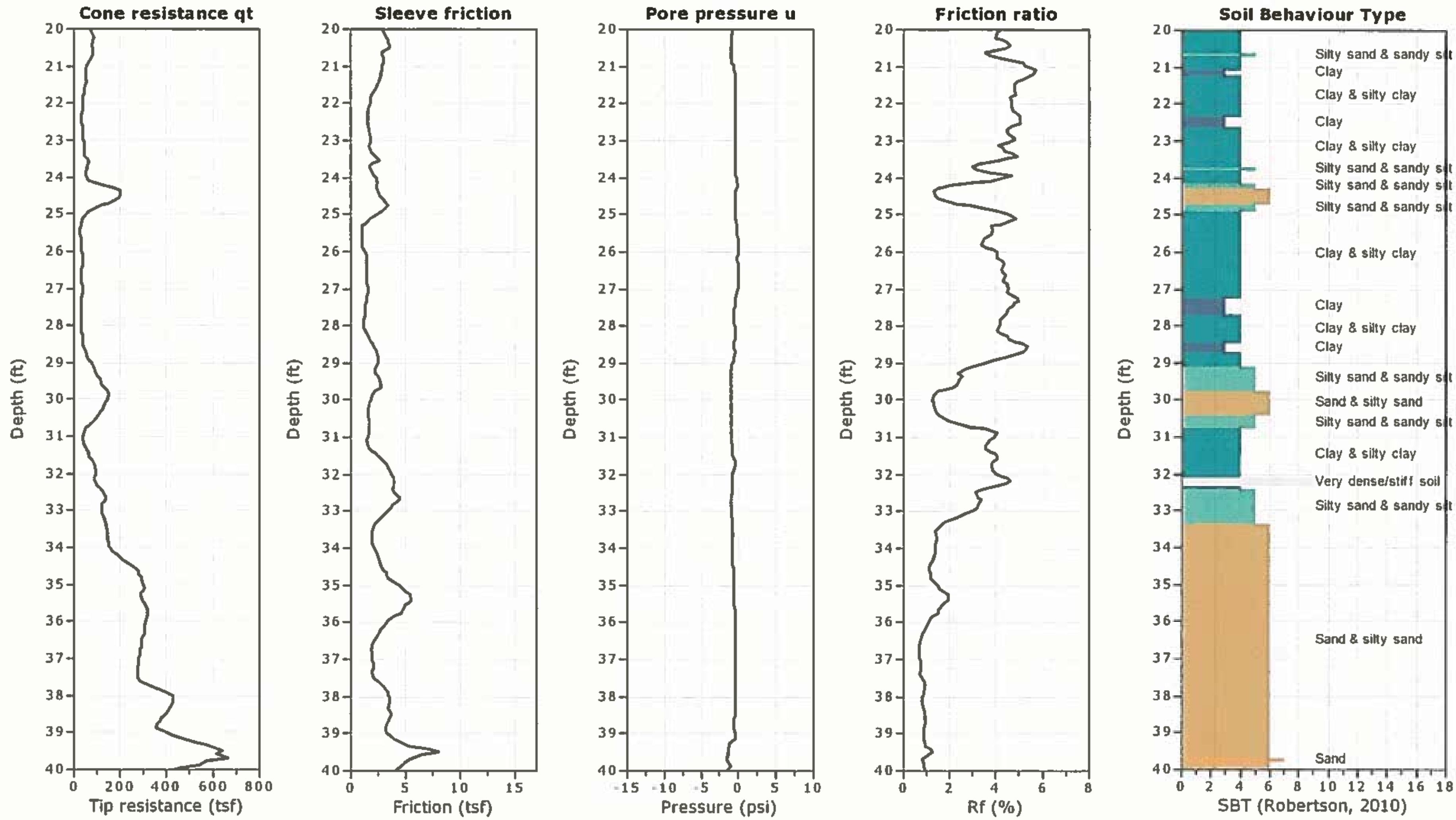
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-11
Total depth: 80.46 ft, Date: 5/12/2015
Cone Type: Vertek



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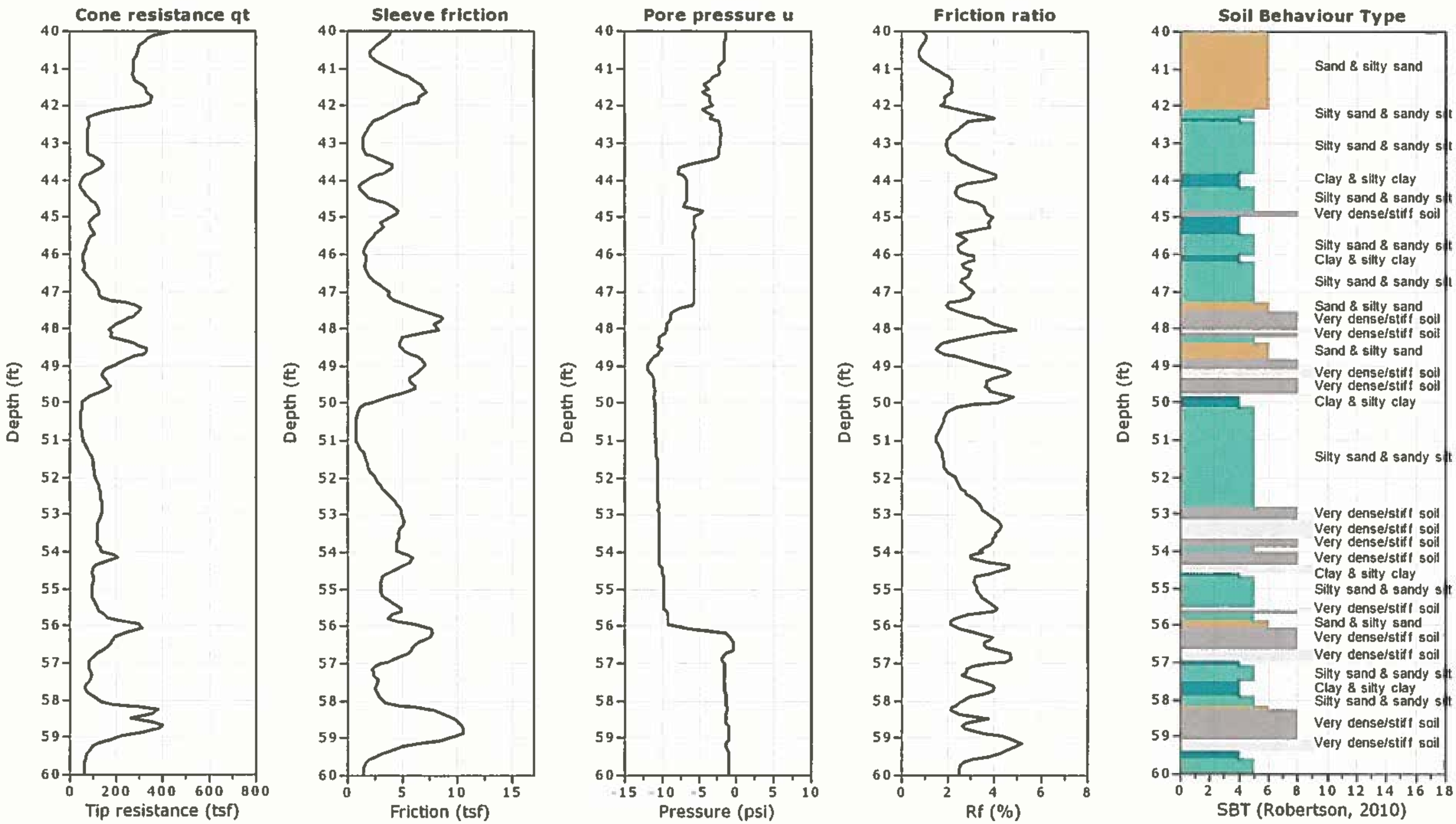
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-11
Total depth: 80.46 ft, Date: 5/12/2015
Cone Type: Vertek



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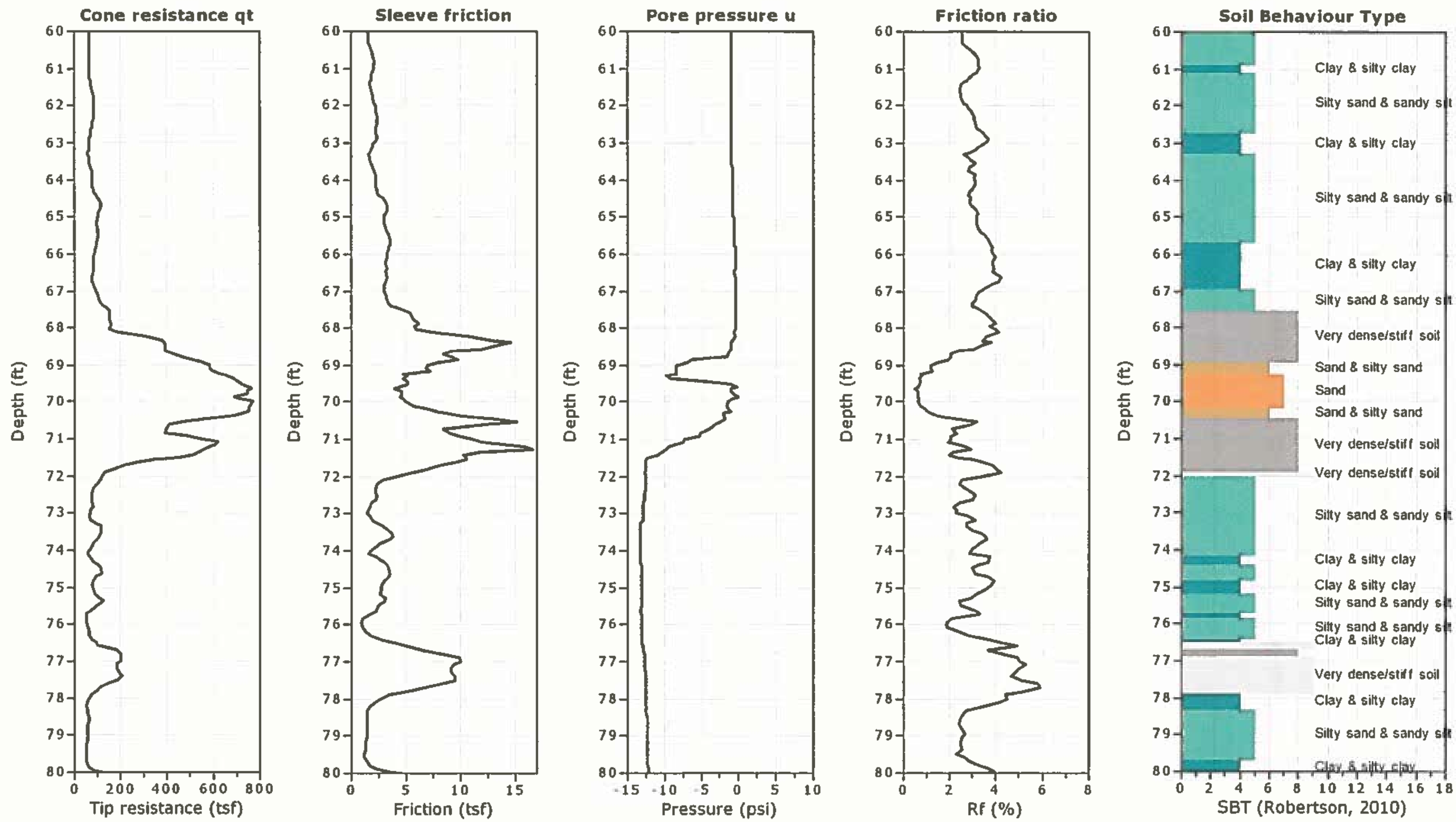
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-11
Total depth: 80.46 ft, Date: 5/12/2015
Cone Type: Vertek



CPeT-IT v.1.7.6.42 - CPTU data presentation & interpretation software - Report created on: 5/15/2015, 8:08:15 AM
Project file: C:\AppliedLosAngeles4-5-15\CPeT Data\Plot Data\Plots w-ha.cpt

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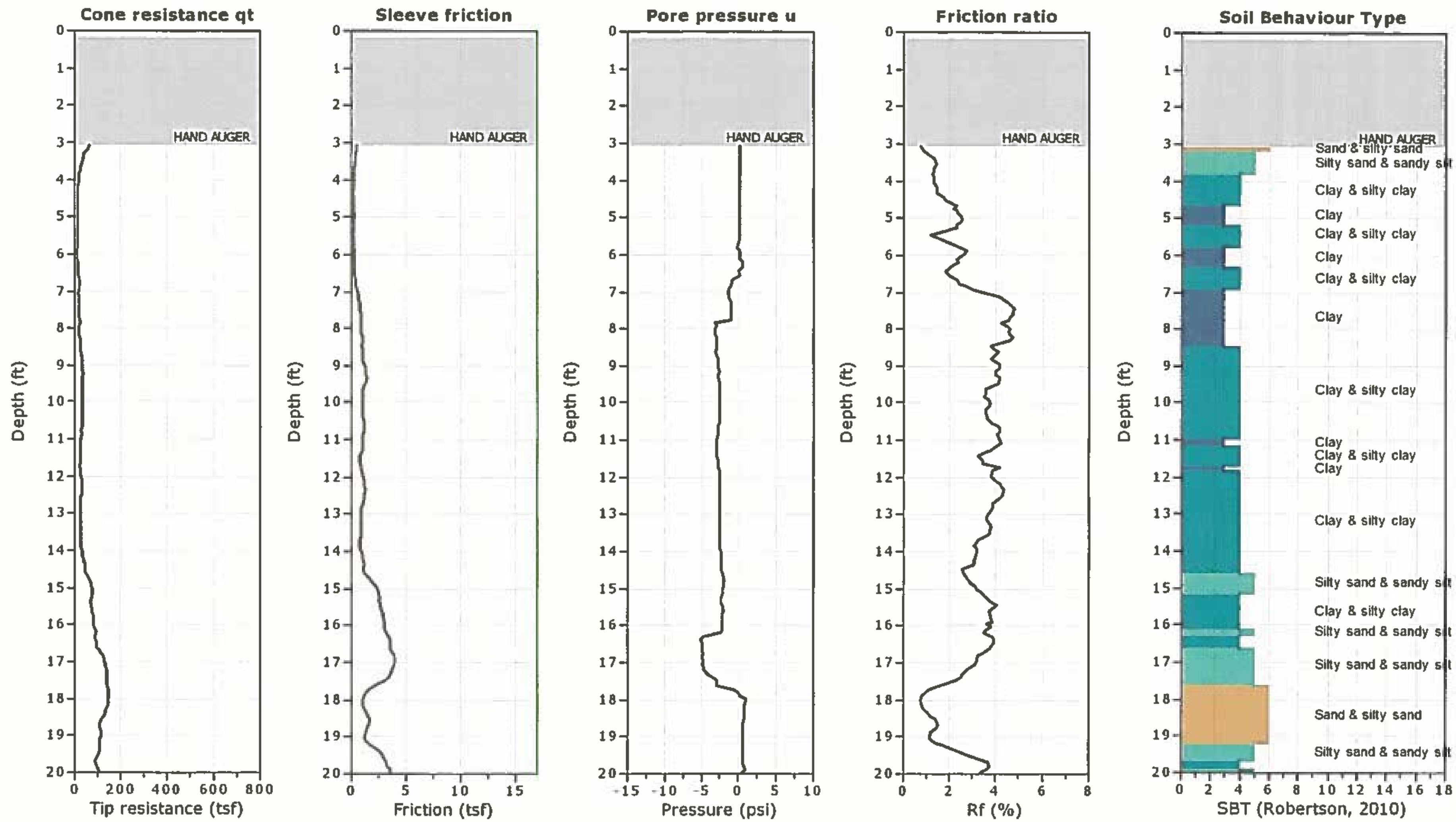
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-12
Total depth: 71.08 ft, Date: 5/12/2015
Cone Type: Vertek



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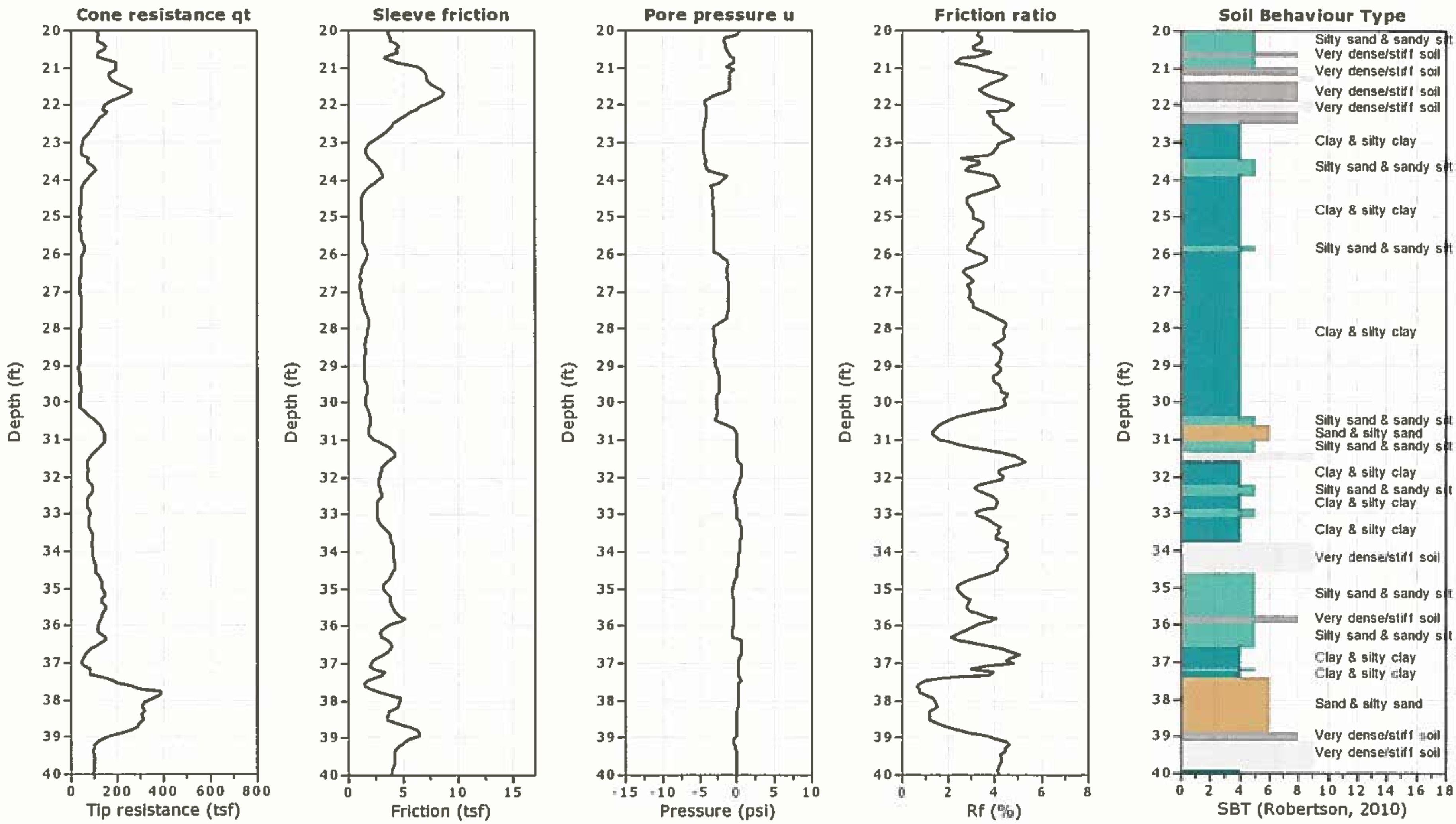
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-12
Total depth: 71.08 ft, Date: 5/12/2015
Cone Type: Vertek



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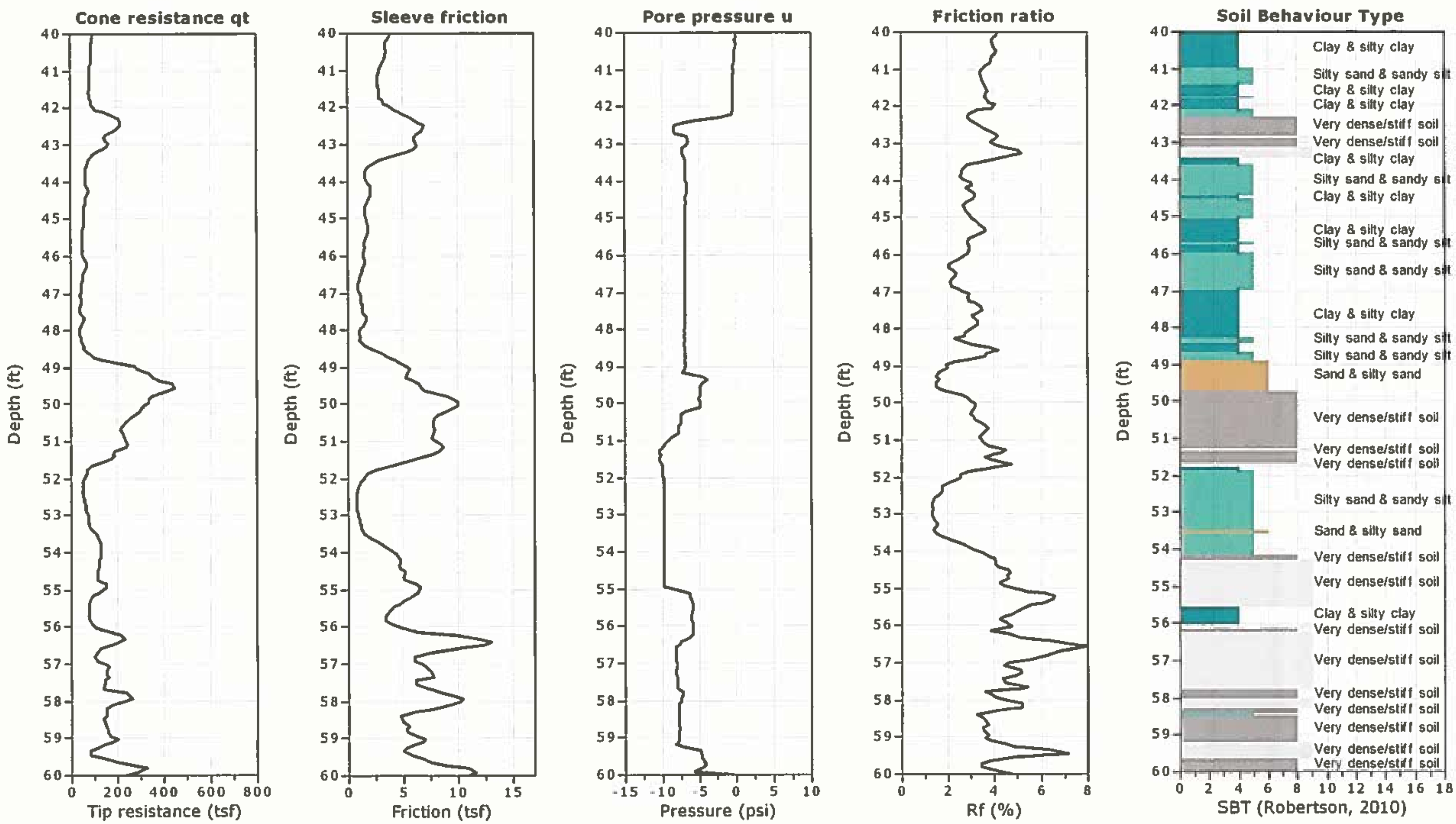
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-12
Total depth: 71.08 ft, Date: 5/12/2015
Cone Type: Vertek



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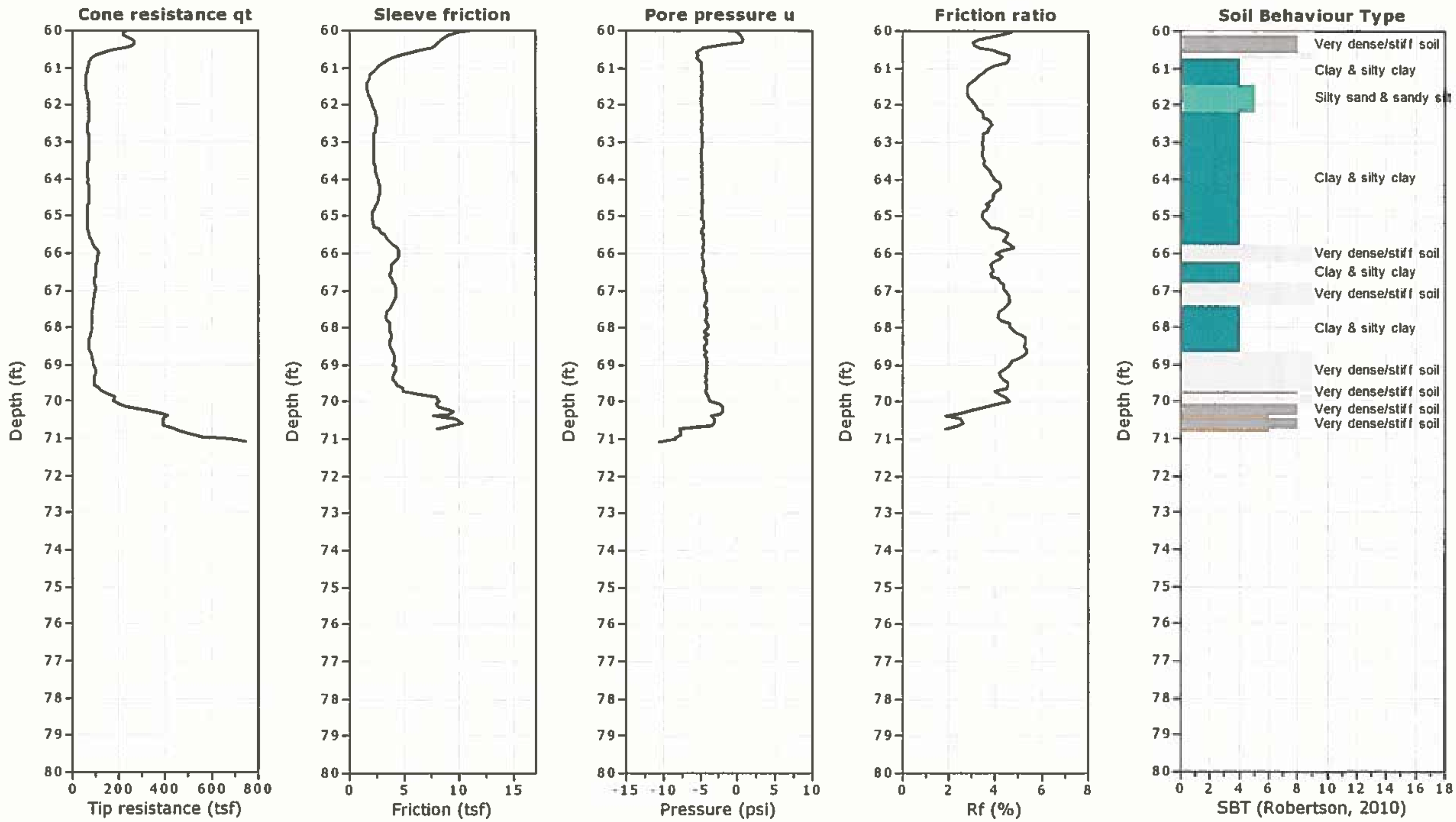
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-12
Total depth: 71.08 ft, Date: 5/12/2015
Cone Type: Vertek



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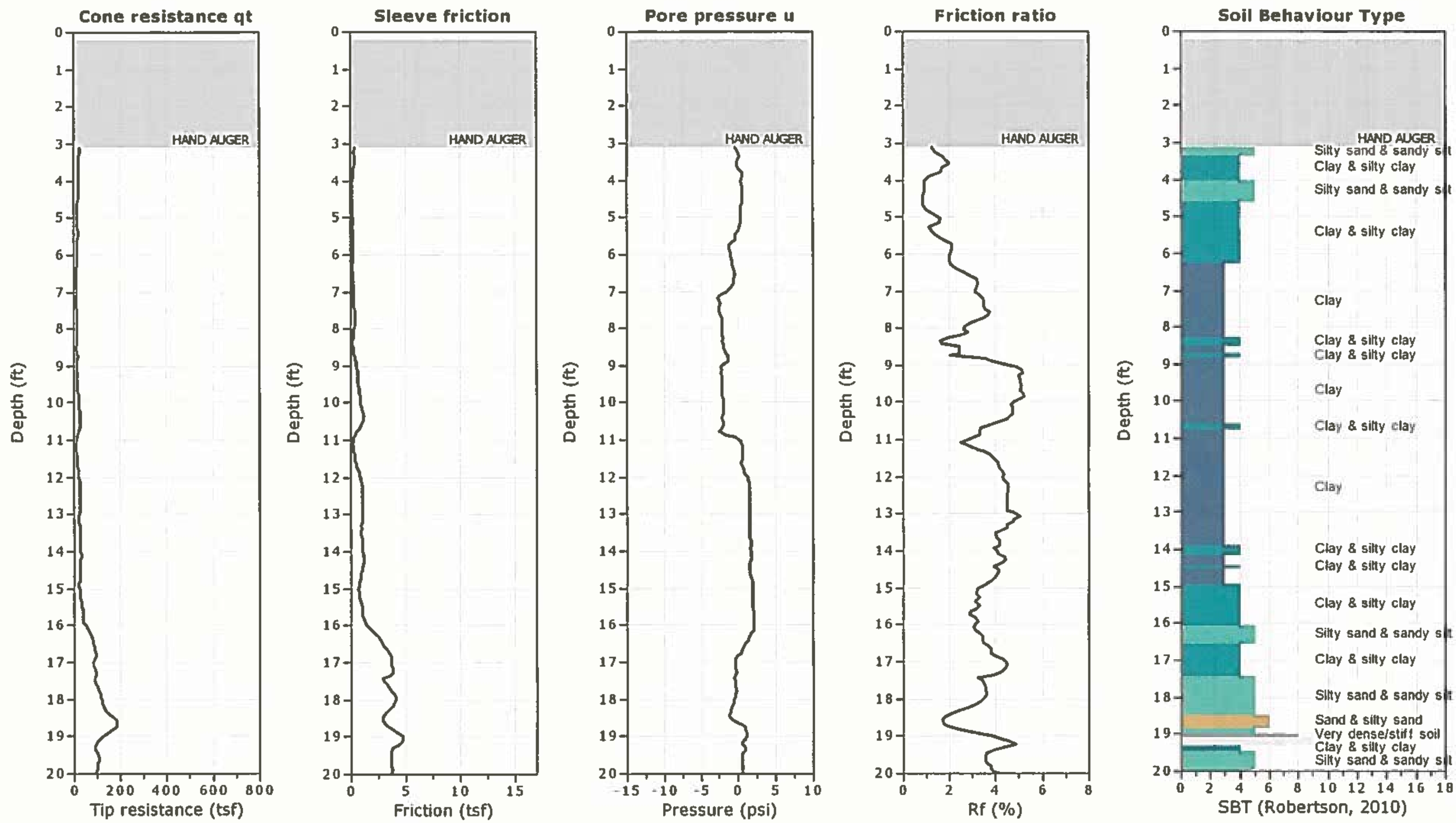
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-13
Total depth: 80.65 ft, Date: 5/12/2015
Cone Type: Vertek



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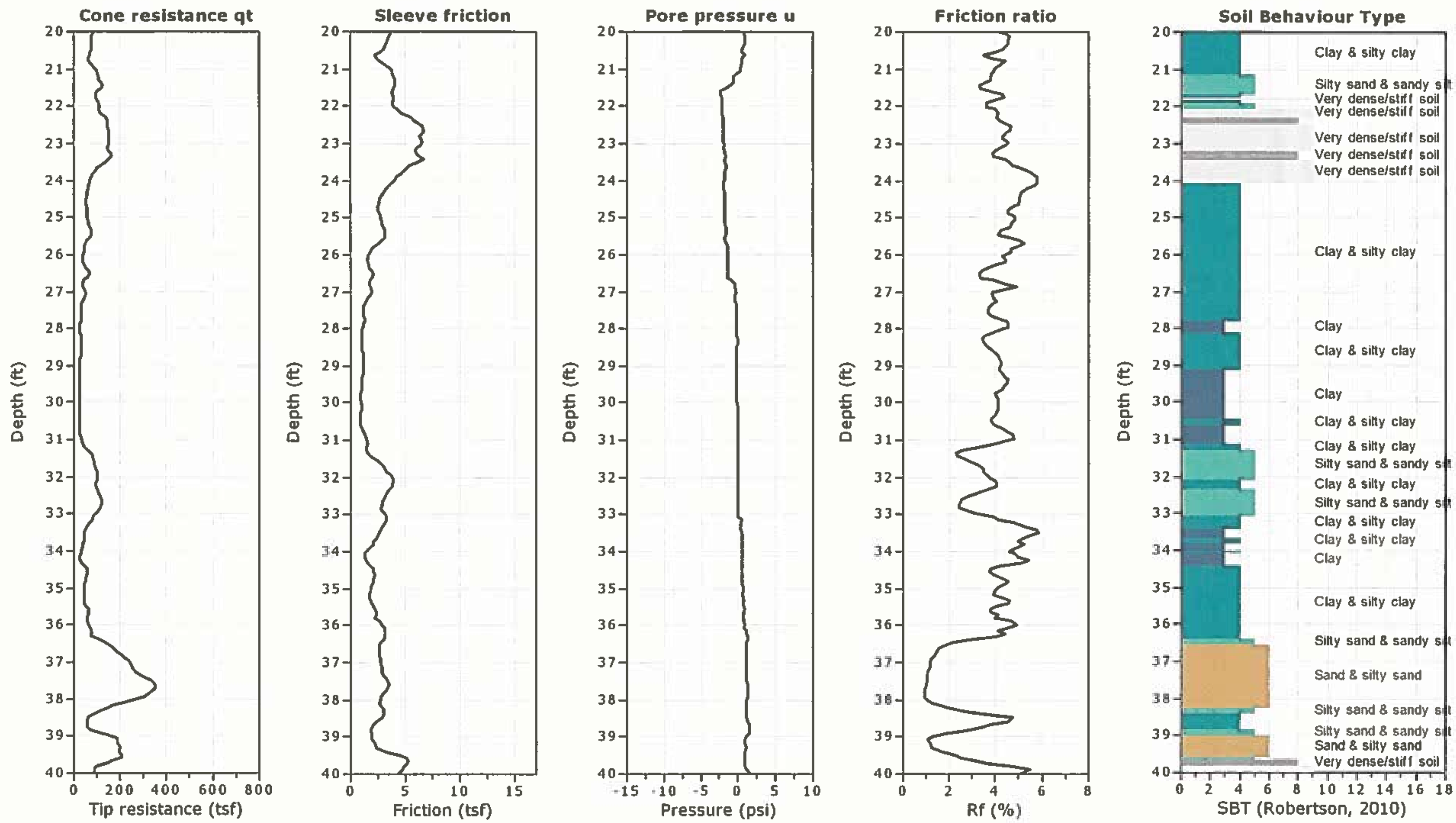
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-13
Total depth: 80.65 ft, Date: 5/12/2015
Cone Type: Vertek



CPeT-IT v.1.7.6.42 - CPTU data presentation & interpretation software - Report created on: 5/15/2015, 7:54:00 AM
Project file: C:\AppliedLosAngeles4-5-15\CPeT Data\Plot Data\Plots w-ha.cpt

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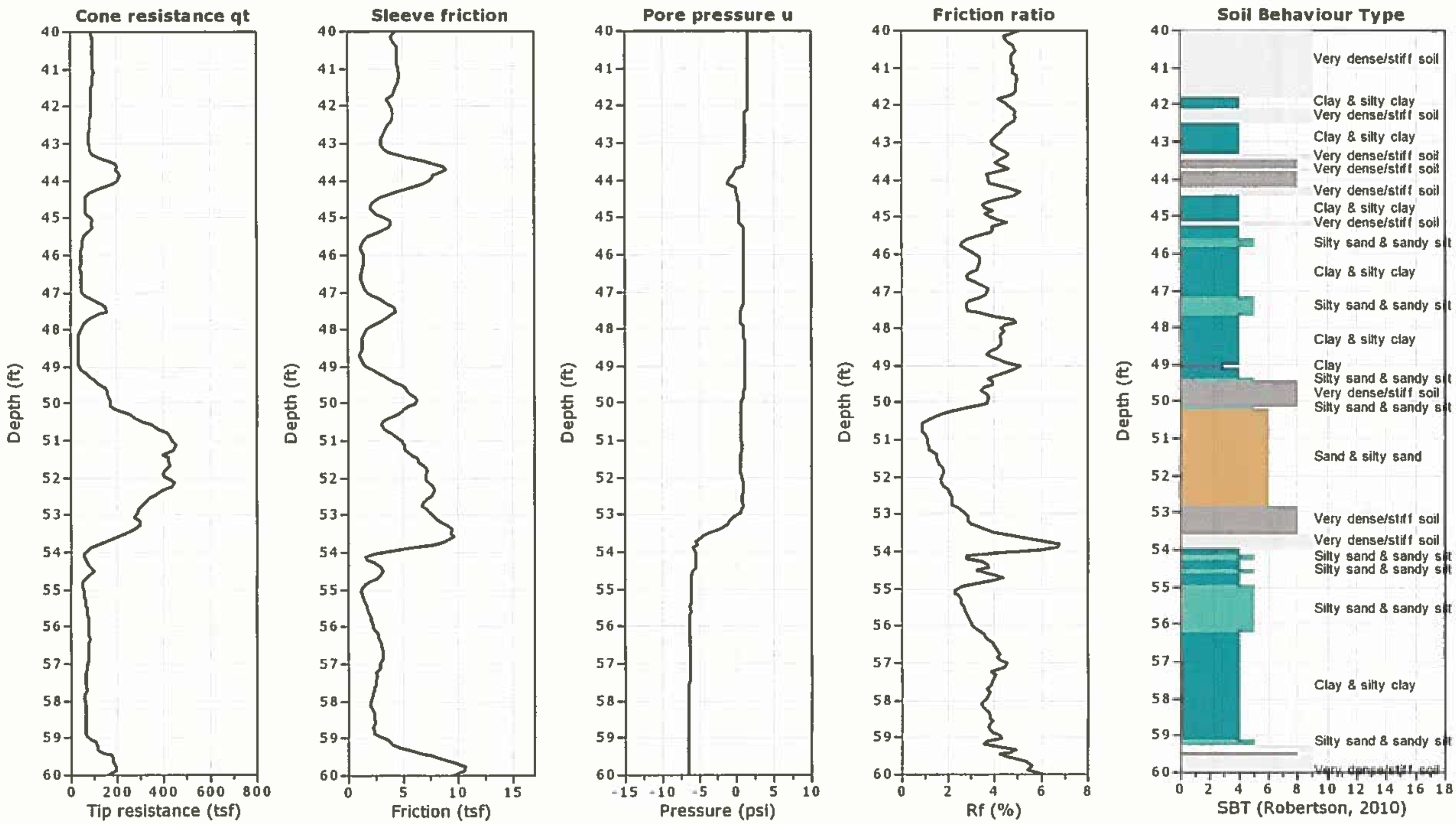
Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA

CPT: CPT-13
Total depth: 80.65 ft, Date: 5/12/2015
Cone Type: Vertek



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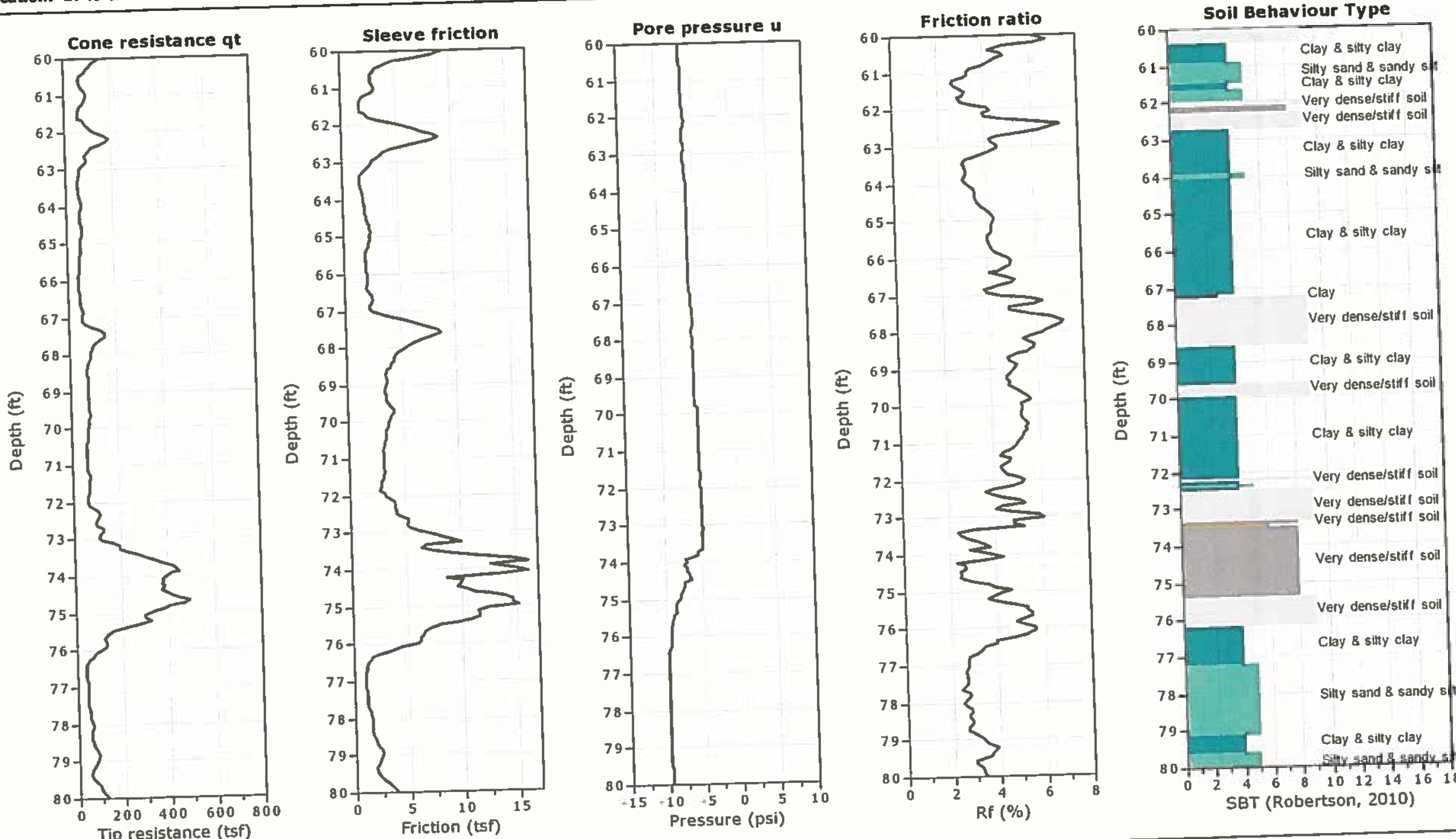
CPT: CPT-13
Total depth: 80.65 ft, Date: 5/12/2015
Cone Type: Vertek

Project: Applied Earth Sciences
Location: 1749 & 1751 Malcolm Ave Los Angeles, CA



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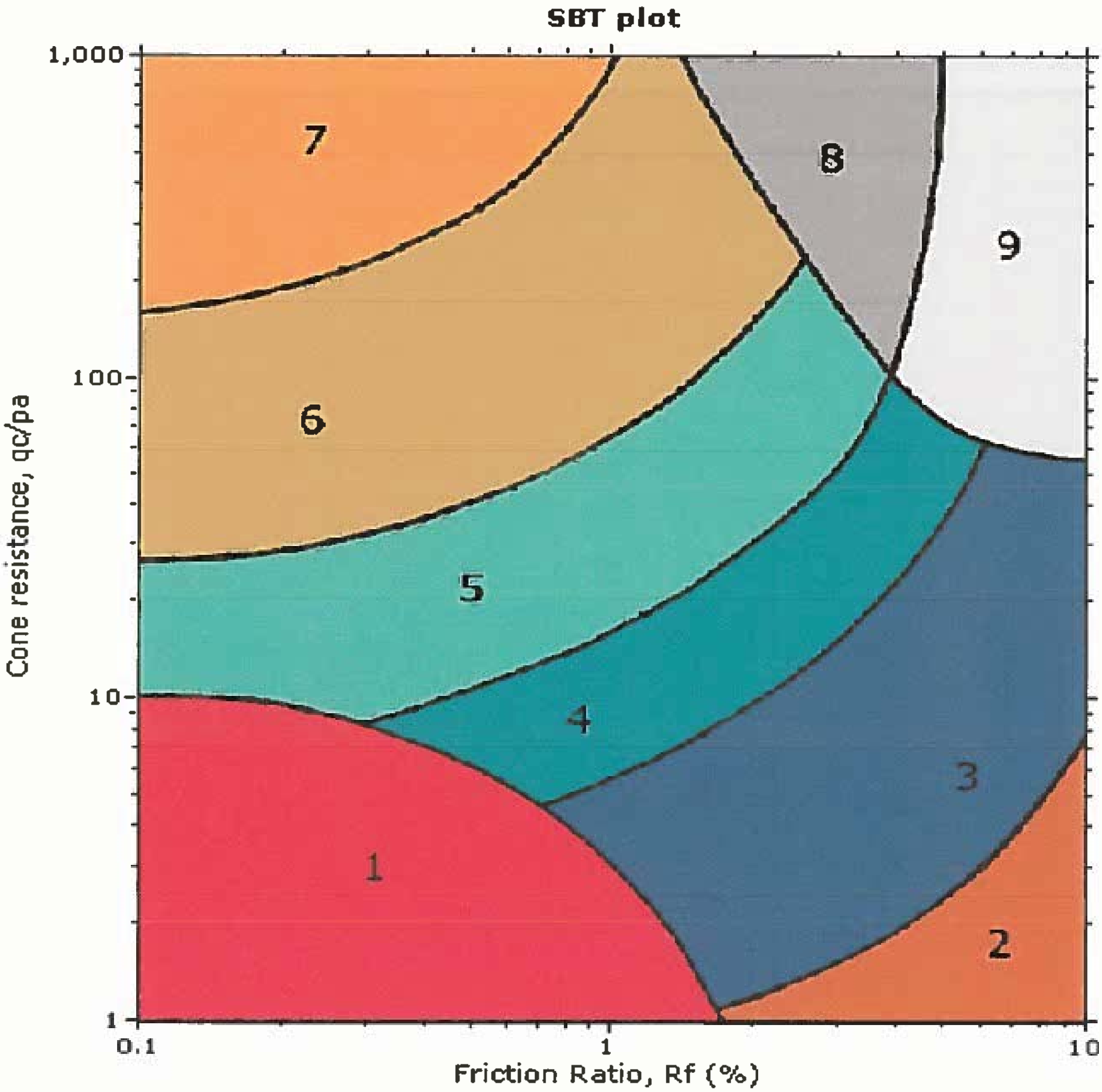


SBT legend

- 1. Sensitive fine grained
- 2. Organic material
- 3. Clay to silty clay
- 4. Clayey silt to silty clay
- 5. Silty sand to sandy silt
- 6. Clean sand to silty sand
- 7. Gravely sand to sand
- 8. Very stiff sand to clayey sand
- 9. Very stiff fine grained

	CPT-1	In situ data										Basic output data								
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	98.2	0.36	0.2	-0.61	98.20245	0.3666	6	1.69475	113.9837	0.05699	0	0.057	1722.1	0.3668	0.0002	7	0.3551	2.8215	1.3124	261.7113
2	225.6	0.78	0.21	-0.89	225.6026	0.3457	6	1.3704	121.6698	0.11783	0	0.1178	1913.7	0.3459	7E-05	7	0.2924	1.8998	1.1491	404.8405
3	86.9	0.34	0	-0.77	86.9	0.3913	6	1.75491	113.2673	0.17446	0	0.1745	497.11	0.392	0	6	0.4189	2.1279	1.4733	174.4066
4	100.3	0.4	0.1	-0.92	100.3012	0.3988	6	1.70392	114.8062	0.23186	0	0.2319	431.59	0.3997	7E-05	6	0.4215	1.8962	1.4679	179.3289
5	118.5	0.15	-0.1	-0.93	118.4988	0.1266	6	1.45693	108.0361	0.28588	0	0.2859	413.5	0.1269	-6E-05	7	0.3475	1.5758	1.2664	176.0482
6	83.2	1.09	-0.29	-1.08	83.19645	1.3102	5	2.06573	121.6852	0.34672	0	0.3467	238.95	1.3156	-3E-04	6	0.5758	1.901	1.8644	148.849
7	142	1.36	-0.74	-1.09	141.9909	0.9578	6	1.80132	124.6083	0.40903	0	0.409	346.14	0.9606	-4E-04	6	0.4993	1.6073	1.6552	215.0702
8	87.7	1.26	-0.62	-1.06	87.69241	1.4368	5	2.07476	122.8741	0.47047	0	0.4705	185.4	1.4446	-5E-04	6	0.6049	1.6328	1.924	134.5975
9	84.1	2.19	-0.69	-1.04	84.09155	2.6043	5	2.26709	126.8166	0.53387	0	0.5339	156.51	2.6209	-6E-04	5	0.6884	1.6014	2.1345	126.4615
10	78.9	2.14	-0.76	-1.17	78.8907	2.7126	5	2.29907	126.4919	0.59712	0	0.5971	131.12	2.7333	-7E-04	5	0.7105	1.5016	2.1848	111.1071
11	127.1	1.77	-1.88	-1.48	127.077	1.3929	6	1.94772	126.2657	0.66025	0	0.6603	191.47	1.4001	-0.001	6	0.5922	1.3222	1.8663	157.9668
12	127.8	2.51	-1.11	-1.81	127.7864	1.9642	5	2.05339	128.8351	0.72467	0	0.7247	175.34	1.9754	-6E-04	6	0.6413	1.2748	1.9871	153.0772
13	200.3	3.66	-1.07	-2.02	200.2869	1.8274	6	1.90231	132.691	0.79102	0	0.791	252.2	1.8346	-4E-04	6	0.5954	1.1891	1.8585	224.1999
14	250.3	7.91	-0.89	-2.34	250.2891	3.1604	8	2.03934	137.28	0.85966	0	0.8597	290.15	3.1712	-3E-04	8	0.6566	1.1461	2.0102	270.1764
15	169.7	5.39	-6.9	-2.14	169.6155	3.1778	8	2.13684	135.1178	0.92721	0	0.9272	181.93	3.1952	-0.003	8	0.7003	1.0969	2.1166	174.8708
16	224.9	3.95	-2.48	-2.06	224.8696	1.7566	6	1.85763	133.5313	0.99398	0	0.994	225.23	1.7644	-8E-04	6	0.602	1.0384	1.8503	219.6956
17	209.7	4.78	-2.08	-2	209.6745	2.2797	6	1.96611	134.7562	1.06136	0	1.0614	196.55	2.2913	-7E-04	6	0.6506	0.998	1.9697	196.7638
18	132.1	3.98	-4.59	-1.77	132.0438	3.0142	5	2.18507	132.2881	1.1275	0	1.1275	116.11	3.0401	-0.003	5	0.7427	0.9539	2.2033	118.025
19	82.2	2.57	-2.5	-1.61	82.1694	3.1277	5	2.33191	127.9309	1.19147	0	1.1915	67.965	3.1737	-0.002	5	0.8091	0.9084	2.3693	69.52295
20	97.9	1.72	-3.06	-1.38	97.86255	1.7576	5	2.09946	125.4188	1.25418	0	1.2542	77.029	1.7804	-0.002	5	0.7271	0.8837	2.1462	80.68755
21	99.7	1.45	-2.68	-1.38	99.6672	1.4548	5	2.03719	124.214	1.31628	0	1.3163	74.719	1.4743	-0.002	5	0.7107	0.8563	2.0953	79.58985
22	55.5	1.54	-2.48	-1.36	55.46964	2.7763	5	2.4148	123.2253	1.3779	0	1.3779	39.257	2.847	-0.003	4	0.8691	0.7949	2.5034	40.63801
23	97.8	1.79	-3.23	-1.32	97.76046	1.831	5	2.11222	125.7082	1.44075	0	1.4408	66.854	1.8584	-0.002	5	0.7545	0.7922	2.1945	72.1163
24	95	2.01	-3.46	-1.23	94.95765	2.1167	5	2.16573	126.4854	1.50399	0	1.504	62.137	2.1508	-0.003	5	0.7828	0.7594	2.2609	67.06775
25	40.6	0.87	-3.17	-1.18	40.5612	2.1449	5	2.44243	118.2835	1.56314	0	1.5631	24.949	2.2309	-0.006	4	0.9099	0.7012	2.5873	25.84182
26	50.5	1	-7.27	-1.15	50.41102	1.9837	5	2.34819	119.8327	1.62305	0	1.6231	30.059	2.0497	-0.011	5	0.8776	0.687	2.4948	31.67566
27	42.1	0.94	-7.75	-1.16	42.00514	2.2378	5	2.44251	118.9351	1.68252	0	1.6825	23.966	2.3312	-0.014	4	0.9253	0.6511	2.613	24.81045
28	50.4	0.9	-7.66	-1.18	50.30624	1.789	5	2.32016	119.0567	1.74205	0	1.7421	27.878	1.8532	-0.011	5	0.8823	0.6441	2.4922	29.56217
29	130.7	2.5	-1.94	-1.2	130.6763	1.9131	5	2.03839	128.8604	1.80648	0	1.8065	71.338	1.9399	-0.001	5	0.7624	0.6651	2.1706	81.00373
30	154.3	2.9	-1.82	-1.32	154.2777	1.8797	6	1.98458	130.3514	1.87165	0	1.8717	81.429	1.9028	-9E-04	5	0.7456	0.6536	2.1182	94.14619
31	64.7	2.47	-1.82	-1.49	64.67772	3.8189	4	2.46619	127.0567	1.93518	0	1.9352	32.422	3.9367	-0.002	4	0.956	0.5615	2.6623	33.29464
32	108	3.62	-2.58	-1.52	107.9684	3.3528	5	2.27633	131.1035	2.00073	0	2.0007	52.964	3.4161	-0.002	4	0.879	0.5712	2.4511	57.20803
33	180.8	1.7	-1.56	-1.57	180.7809	0.9404	6	1.71903	126.8301	2.06415	0	2.0642	86.581	0.9512	-6E-04	6	0.6597	0.6435	1.8686	108.6904
34	197.3	2.3	-1.72	-1.61	197.279	1.1659	6	1.75902	129.2549	2.12878	0	2.1288	91.672	1.1786	-6E-04	6	0.6794	0.6219	1.9123	114.7055
35	290.3	2.8	-1.72	-1.55	290.279	0.9646	6	1.58584	131.6363	2.19459	0	2.1946	131.27	0.9719	-4E-04	6	0.6102	0.6407	1.7226	174.4427
36	367.3	2.39	-1.71	-1.46	367.2791	0.6507	6	1.38995	131.0516	2.26012	0	2.2601	161.5	0.6548	-3E-04	6	0.5353	0.6662	1.5174	229.8046
37	340.3	3.77	-1.91	-1.27	340.2766	1.1079	6	1.58927	134.2003	2.32722	0	2.3272	145.22	1.1156	-4E-04	6	0.6194	0.6137	1.7302	196.015
38	302.9	3.7	-1.15	-1.21	302.8859	1.2216	6	1.6537	133.7793	2.39411	0	2.3941	125.51	1.2313	-3E-04	6	0.6529	0.5868	1.8097	166.6382
39	329.7	4.52	-1.34	-0.73	329.6836	1.371	6	1.67182	135.4508	2.46184	0	2.4618	132.92	1.3813	-3E-04	6	0.6635	0.571	1.8293	176.5932
40	324.8	2.12	-2.2	-0.72	324.7731	0.6528	6	1.4272	129.8745	2.52677	0	2.5268	127.53	0.6579	-5E-04	6	0.5756	0.6059	1.5897	184.5288
41	279.1	4.09	-2.49	-0.92	279.0695	1.4656	6	1.73812	134.3128	2.59393	0.0312	2.5627	107.88	1.4793	-8E-04	6	0.7025	0.5372	1.9188	140.3661
42	329.1	4.02	-2.39	-0.84	329.0708	1.2216	6	1.6319	134.5885	2.66122	0.0624	2.5988	125.6	1.2316	-7E-04	6	0.6601	0.5526	1.803	170.465
43	252.5	3.12	-2.78	-0.67	252.466	1.2358	6	1.70716	132.0876	2.72727	0.0936	2.6337	94.825	1.2493	-0.001	6	0.6999	0.5282	1.9032	124.671
44	324.6	4.85	-3.19	-0.85	324.561	1.4943	6	1.70623	135.9282	2.79523	0.1248	2.6704	120.49	1.5073	-0.001	6	0.6953	0.5254	1.8865	159.763
45	237.7	6.2	-3.82	-0.82	237.6532	2.6088	8	1.98222	136.9649	2.86371	0.156	2.7077	86.711	2.6407	-0.002	5	0.8142	0.4653	2.1944	103.2504
46	155.1	6.83	-13.08	-0.48	154.9399	4.4082	9	2.27526	136.6296	2.93203	0.1872	2.7448	55.38	4.4932	-0.007	4	0.9448	0.4063	2.5317	58.36945
47	87.6	3.59	-13.78	-0.62	87.43133	4.1061	4	2.40267	130.528	2.99729	0.2184	2.7789	30.384	4.2518	-0.014	4	1	0.3808	2.7142	30.38407
48	201.8	9.33	-14.06	-0.78	201.6279	4.6273	9	2.22947	137.28	3.06593	0.2496	2.8163	70.504	4.6988	-0.006	4	0.9254	0.4042	2.4714	75.84249
49	447.1	10.09	-5.91	-1.05	447.0277	2.2571	8	1.78571	137.28	3.13457	0.2808	2.8538	155.55	2.2731	-0.002	6	0.7314	0.484	1.9588	203.0496
50	97.7	3.45	-8.75	-1.29	97.5929	3.5351	5	2.3222	130.5051	3.19982	0.312	2.8878	32.687	3.6549	-0.01	4	0.9947	0.3684	2.6447	32.86032
51	62.6	1.35	-8.9	-1.37	62.49106	2.1603	5	2.30264	122.5525	3.2611	0.3432	2.9179	20.299	2.2793	-0.017	4	1	0.3626	2.6769	20.29883
52	120.8	3.74	-8.84	-1.62	120.6918	3.0988	5	2.21908	131.6138	3.32691	0.3744	2.9525	39.751	3.1866	-0.009	4	0.9534	0.3759	2.5282	41.69721
53	149.8	6.65	-8.61	-2.14	149.6946	4.4424	9	2.28661	136.3502	3.39508	0.4056	2.9895	48.938	4.5455	-0.007	4	0.9744	0.3635	2.5795	50.25759
54	158.7	11.02	-11.84	-2.7	158.5551	6.9503	9	2.43458	137.28	3.46372	0.4368	3.0269	51.237	7.1055	-0.008	3	1	0.3496	2.7186	51.2373
55	126.5	5.99	-11.9	-2.47	126.3543	4.7406	9	2.35255	135.172	3.53131	0.468	3.0633	40.095	4.8769	-0.011	4	1	0.3454	2.6695	40.09489
56	134.3	5.72	-5.9	-2.04	134.2278	4.2614	9	2.29971	134.9819	3.5988	0.4992	3.0996	42.144	4.3788	-0.007	4	0.9951	0.3432	2.6194	42.36768
57	74.8	2.16	-2.79	-1.79	74.76585	2.889	5	2.33495	126.429	3.66201	0.5304	3.1316	22.705	3.0378	-0.01	4	1	0.3379	2.7143	22.70517
58	61.2	2.23	0.92	-1.68	61.21126	3.6431	4	2.46777	126.1744	3.7251	0.5616	3.1635	18.172	3.8792	-0.009	3	1	0.3345	2.8563	18.17169
59	131.4	8.11	-0.55	-1.57	131.3933	6.1723	9	2.43622	137.28	3.79374	0.5928	3.2009	39.863	6.3558	-0.005	3	1	0.3306	2.7546	39.86312
60	47.6	1.6	0.1	-1.65	47.60122	3.3613	4	2.52021	123.1319	3.85531	0.624	3.2313	13.538	3.6575	-0.014	3	1	0.3275	2.9408	13.53815
61	55	1.35	0.38	-1.86	55.00465	2.4543	5	2.38094	122.2413	3.91643	0.6552	3.2612	15.665	2.6425	-0.012	4	1	0.3245	2.8057	15.66533
62	62.7	2.15	0.48	-2.02	62.70588	3.4287	4	2.44152	125.966	3.97941	0.6864	3.293	17.834	3.661	-0.011	3	1	0.3213	2.8468	17.83367
63	54.5	1.96	0.57	-2.16	54.50698	3.5959	4	2.49886	124.9472	4.04188	0.7176	3.3243	15.181	3.8839	-0.013	3	1	0.3183	2.9175	15.18074
64	107.1	4.95	1.29	-2.18	107.1158	4.6212	9	2.38696	133.3737	4.10857	0.7488	3.3598	30.659	4.8055	-0.006	3	1	0.3149	2.7478	30.65899
65	83.3	3.64	0.77	-2.21	83.30942	4.3693	4	2.43682	130.5114	4.17383	0.78	3.3938	23.318	4.5997	-0.009	3	1	0.3118	2.8221	23.31751
66	77	3.65	0.86	-2.32	77.01053	4.7396	4	2.48585	130.3397	4.239	0.8112	3.4278	21.23	5.0157	-0.01	3	1	0.3087	2.8776	21.22982
67	70.4	2.78	0.86	-2.48	70.41053	3.9483	4	2.45185	128.129	4.30306	0.8424	3.4607	19.103	4.2053	-0.012	3	1	0.3058	2.862	19.10255
68	94.6	2.79	1.15	-2.56	94.61408	2.9488	5	2.27178	128.8759	4.3675	0.8736	3.4939	25.83	3.0915	-0.009	4	1	0.3028	2.6757	25.82976
69	828.2	7.31	-1.09	-2.54	828.1867	0.8827	7	1.3005	137.28	4.43614	0.9048	3.5313	233.27	0.8874	-0.001	6	0.5747	0.5003	1.4622	389.4703

	CPT-2	In situ data										Basic output data								
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	18.5	0.17	0.68	-0.12	18.50832	0.9185	5	2.52189	104.4235	0.05221	0	0.0522	353.49	0.9211	0.0027	6	0.5755	5.6493	1.8927	98.53739
2	14.2	0.06	0.68	0.01	14.20832	0.4223	5	2.48997	96.15833	0.10029	0	0.1003	140.67	0.4253	0.0035	6	0.59	4.015	1.9372	53.5336
3	15.2	0.56	0.77	-0.16	15.20942	3.6819	3	2.92187	112.6676	0.15662	0	0.1566	96.107	3.7202	0.0037	4	0.7888	4.5132	2.4433	64.20475
4	14.4	0.51	0.77	-0.34	14.40942	3.5394	3	2.93009	111.8515	0.21255	0	0.2126	66.793	3.5923	0.0039	4	0.8149	3.6988	2.51	49.62752
5	15.8	0.45	0.85	-0.51	15.8104	2.8462	4	2.84128	111.1619	0.26813	0	0.2681	57.965	2.8953	0.0039	4	0.8064	3.0252	2.4797	44.43656
6	10.8	0.46	0.96	-0.64	10.81175	4.2546	3	3.07783	110.3959	0.32333	0	0.3233	32.439	4.3858	0.0066	4	0.9079	2.9339	2.7373	29.08244
7	8.5	0.43	0.96	-0.76	8.51175	5.0518	3	3.20568	109.319	0.37799	0	0.378	21.519	5.2866	0.0085	3	0.9724	2.7208	2.8977	20.91524
8	7.5	0.48	2.68	-0.88	7.5328	6.3721	3	3.30899	109.8259	0.4329	0	0.4329	16.401	6.7607	0.0272	3	1	2.4442	3.0476	16.40072
9	8	0.36	2.15	-0.94	8.02632	4.4853	3	3.19558	107.8757	0.48684	0	0.4868	15.487	4.7749	0.0205	3	1	2.1734	2.9673	15.48657
10	5.5	0.16	2.39	-0.99	5.52925	2.8937	3	3.22491	101.0332	0.53736	0	0.5374	9.2897	3.2052	0.0345	3	1	1.9691	3.0395	9.28974
11	7.8	0.33	2.78	-1	7.83403	4.2124	3	3.18828	107.1799	0.59095	0	0.591	12.257	4.5561	0.0276	3	1	1.7905	3.0334	12.25675
12	6.6	0.18	2.87	-0.89	6.63513	2.7128	3	3.14277	102.3397	0.64212	0	0.6421	9.3332	3.0035	0.0345	3	1	1.6479	3.0219	9.33322
13	15.6	0.29	2.97	-0.3	15.63635	1.8547	4	2.73984	107.9201	0.69608	0	0.6961	21.464	1.9411	0.0143	4	0.8866	1.4496	2.6335	20.46834
14	17.9	0.36	2.98	0.17	17.93648	2.0071	4	2.70913	109.8369	0.75099	0	0.751	22.884	2.0948	0.0125	4	0.8866	1.3552	2.6269	22.01103
15	9.5	0.2	3.2	0.55	9.53917	2.0966	3	2.94985	103.996	0.80299	0	0.803	10.88	2.2893	0.0264	3	0.9933	1.3153	2.9019	10.85942
16	6	0.21	3.35	0.59	6.041	3.4762	3	3.23484	103.2388	0.85461	0	0.8546	6.0687	4.0491	0.0465	3	1	1.2381	3.2494	6.06871
17	5.5	0.23	3.35	0.55	5.541	4.1509	3	3.30854	103.6937	0.90646	0	0.9065	5.1128	4.9627	0.052	3	1	1.1673	3.3608	5.1128
18	4.7	0.25	3.63	-0.22	4.74443	5.2693	3	3.4225	103.9253	0.95842	0	0.9584	3.9503	6.6033	0.069	3	1	1.104	3.5238	3.95026
19	6.5	0.33	3.69	-0.31	6.54517	5.0419	3	3.29717	106.7415	1.01179	0	1.0118	5.4689	5.9638	0.048	3	1	1.0458	3.3833	5.46888
20	7.3	0.34	3.66	-0.39	7.3448	4.6291	3	3.23487	107.2411	1.06541	0	1.0654	5.8939	5.4145	0.042	3	1	0.9931	3.3323	5.89385
21	7.2	0.3	3.64	-0.5	7.24455	4.141	3	3.2118	106.2917	1.11856	0	1.1186	5.4767	4.8972	0.0428	3	1	0.946	3.333	5.47669
22	10.7	0.38	3.72	-0.68	10.74553	3.5364	3	3.03243	108.9829	1.17305	0	1.1731	8.1603	3.9697	0.028	3	1	0.902	3.1389	8.16034
23	7.1	0.35	3.73	-0.81	7.14566	4.8981	3	3.25889	107.3861	1.22674	0	1.2267	4.8249	5.9133	0.0454	3	1	0.8625	3.4252	4.8249
24	6.8	0.41	3.63	-0.96	6.84443	5.9903	3	3.32582	108.4388	1.28096	0	1.281	4.3432	7.3695	0.047	3	1	0.826	3.5183	4.34319
25	8.3	0.37	3.73	-1.08	8.34566	4.4334	3	3.1789	108.1713	1.33505	0	1.3351	5.2512	5.2777	0.0383	3	1	0.7926	3.3666	5.2512
26	8	0.38	3.73	-1.16	8.04566	4.7231	3	3.20793	108.2772	1.38919	0	1.3892	4.7916	5.7087	0.0404	3	1	0.7617	3.4188	4.79163
27	6.3	0.37	3.73	-1.29	6.34566	5.8308	3	3.34518	107.5031	1.44294	0	1.4429	3.3977	7.5468	0.0548	2	1	0.7333	3.6107	3.39773
28	4.6	0.16	3.73	-1.43	4.64566	3.4441	3	3.32896	100.6085	1.49324	0	1.4932	2.1111	5.0755	0.0852	2	1	0.7086	3.688	2.11112
29	2.5	0.05	3.73	-1.58	2.54566	1.9641	3	3.43947	90.63057	1.53856	0	1.5386	0.6546	4.9648	0.2667	2	1	0.6877	4.06	0.65457
30	3.9	0.08	3.73	-1.86	3.94566	2.0276	3	3.27604	95.13842	1.58613	0	1.5861	1.4876	3.3905	0.1138	2	1	0.6671	3.7332	1.4876
31	7.8	0.17	3.82	-1.98	7.84676	2.1665	3	3.02978	102.3305	1.63729	0	1.6373	3.7925	2.7378	0.0443	3	1	0.6463	3.3325	3.79252
32	21.1	0.32	3.92	-1.62	21.14798	1.5132	4	2.58174	109.3768	1.69198	0	1.692	11.499	1.6447	0.0145	4	0.9986	0.6258	2.8046	11.50646
33	298.7	2.9	4.02	-0.56	298.7492	0.9707	6	1.57984	131.9632	1.75796	0	1.758	168.94	0.9765	0.001	6	0.5683	0.7494	1.6671	210.3369
34	322.4	4.16	3.94	-0.39	322.4482	1.2901	6	1.65618	134.7894	1.82536	0	1.8254	175.65	1.2975	0.0009	6	0.6025	0.72	1.7484	218.1681
35	332	4.01	4.3	-0.15	332.0526	1.2076	6	1.62555	134.5922	1.89265	0	1.8927	174.44	1.2146	0.0009	6	0.5962	0.707	1.7234	220.6176
36	326.3	3.26	3.88	-0.03	326.3475	0.9989	6	1.56504	133.0349	1.95917	0	1.9592	165.57	1.005	0.0009	6	0.5791	0.7	1.6702	214.5911
37	446.3	5.95	3.44	-0.05	446.3421	1.3331	6	1.58821	137.28	2.02781	0	2.0278	219.11	1.3391	0.0006	6	0.588	0.6822	1.6852	286.4512
38	243.2	7.6	1.76	-0.12	243.2215	3.1247	8	2.04191	137.28	2.09645	0	2.0965	115.02	3.1519	0.0005	5	0.7804	0.5865	2.1817	133.6528
39	90.7	4.08	0.08	0.64	90.70098	4.4983	9	2.4229	131.5537	2.16223	0	2.1622	40.948	4.6082	7E-05	4	0.9568	0.5047	2.6362	42.23104
40	124.2	3.84	-0.87	0.19	124.1894	3.0921	5	2.21047	131.8766	2.22817	0	2.2282	54.736	3.1485	-5E-04	5	0.8738	0.5217	2.4106	60.12924
41	69.5	1.91	0.09	-0.24	69.5011	2.7482	5	2.34165	125.3508	2.29084	0.0312	2.2596	29.744	2.8418	-4E-04	4	0.9445	0.4884	2.5913	31.02258
42	102.1	4.43	-0.09	-0.34	102.0989	4.3389	9	2.37836	132.4446	2.35706	0.0624	2.2947	43.467	4.4415	-7E-04	4	0.9511	0.4789	2.6045	45.1438
43	30.5	1.05	0.1	-0.22	30.50122	3.4425	4	2.66975	118.9643	2.41655	0.0936	2.323	12.09	3.7387	-0.003	3	1	0.4555	2.9857	12.09011
44	100.4	3.43	0.19	-0.17	100.4023	3.4163	5	2.3029	130.5318	2.48181	0.1248	2.357	41.544	3.5028	-0.001	4	0.9297	0.4749	2.5399	43.95147
45	108.1	5.7	-0.6	-0.13	108.0927	5.2733	9	2.43011	134.4281	2.54903	0.156	2.393	44.105	5.4006	-0.002	4	0.9798	0.4495	2.668	44.8393
46	125.8	4.83	-1.71	0.07	125.7791	3.8401	8	2.28067	133.5859	2.61582	0.1872	2.4286	50.713	3.9216	-0.003	4	0.9221	0.4648	2.511	54.10451
47	181.8	7.43	-6.5	0.2	181.7204	4.0887	8	2.20913	137.28	2.68446	0.2184	2.4661	72.6	4.15	-0.004	4	0.8879	0.4718	2.4159	79.8272
48	111.7	7.67	-8.58	0.3	111.595	6.8731	9	2.51502	136.678	2.7528	0.2496	2.5032	43.481	7.0469	-0.008	3	1	0.4227	2.7626	43.48126
49	54.5	0.99	-8.38	0.55	54.39743	1.8199	5	2.2988	119.9448	2.81277	0.2808	2.532	20.373	1.9192	-0.017	4	0.9693	0.4292	2.6228	20.92639
50	108.7	2.33	-8.29	0.48	108.5985	2.1455	5	2.12957	127.8938	2.87672	0.312	2.5647	41.222	2.2039	-0.009	5	0.8824	0.4578	2.3913	45.74358
51	110.2	5.88	-8.38	0.44	110.0974	5.3407	9	2.42974	134.7005	2.94407	0.3432	2.6009	41.199	5.4875	-0.009	3	1	0.4068	2.6983	41.19909
52	79.5	3	-7.91	0.35	79.40318	3.7782	4	2.40276	128.9794	3.00856	0.3744	2.6342	29.002	3.927	-0.012	4	1	0.4017	2.7058	29.00155
53	149.4	6.83	-7.81	0.19	149.3044	4.5746	9	2.29768	136.5393	3.07683	0.4056	2.6712	54.742	4.6708	-0.007	4	0.9478	0.4157	2.5488	57.45225
54	253.4	9.48	0.47	0.51	253.4058	3.741	8	2.09868	137.28	3.14547	0.4368	2.7087	92.392	3.7881	-0.002	5	0.8574	0.4467	2.3077	105.649
55	107.1	3.14	1.44	0.72	107.1176	2.9314	5	2.23416	130.0433	3.21049	0.468	2.7425	37.888	3.0219	-0.004	4	0.9426	0.4075	2.5258	40.01633
56	63.4	1.41	0.35	0.75	63.40428	2.2238	5	2.30653	122.9061	3.27194	0.4992	2.7727	21.687	2.3448	-0.008	4	0.9949	0.3835	2.6594	21.79356
57	196.8	5.87	0.86	0.8	196.8105	2.9826	8	2.07673	136.1048	3.33999	0.5304	2.8096	68.861	3.0341	-0.002	5	0.8666	0.429	2.3192	78.44541
58	74.1	3.52	-0.08	1.06	74.09902	4.7504	4	2.49746	129.9804	3.40498	0.5616	2.8434	24.863	4.9792	-0.008	3	1	0.3721	2.8247	24.86265
59	52.8	1.28	-0.09	1.36	52.7989	2.4243	5	2.39047	121.7519	3.46586	0.5928	2.8731	17.171	2.5946	-0.012	4	1	0.3683	2.7688	17.17091
60	61.7	2.25	-0.13	1.47	61.69841	3.6468	4	2.4657	126.2591	3.52899	0.624	2.905	20.024	3.868	-0.011	3	1	0.3642	2.823	20.02397
61	55.4	2.08	0.19	1.56	55.40233	3.7544	4	2.50726	125.4217	3.5917	0.6552	2.9365	17.644	4.0146	-0.012	3	1	0.3603	2.8756	17.64367
62	59.7	1.93	0.2	1.73	59.70245	3.2327	4	2.43819	125.0564	3.65423	0.6864	2.9678	18.885	3.4435	-0.012	4	1	0.3565	2.8107	18.88526
63	111.6	6.1	0.14	1.77	111.6017	5.4659	9	2.4343	135.0023	3.72173	0.7176	3.0041	35.911	5.6544	-0.007	3	1	0.3522	2.7489	35.91057
64	86.7	3.59	0.58	1.86	86.7071	4.1404	4	2.40776	130.5077	3.78698	0.7488	3.0382	27.293	4.3295	-0.009	3	1	0.3483	2.7538	27.29267
65	57.5	2.92	0.58	1.91	57.5071	5.0776	4	2.59186	127.9947	3.85098	0.78	3.071	17.472	5.4421	-0.014	3	1	0.3446	2.9644	17.47198
66	95.7	4.11	0.58	1.94	95.7071	4.2944	9	2.39252	131.7383	3.91685	0.8112	3.1057	29.556	4.4776	-0.008	4	1	0.3407	2.7383	29.55589
67	123.3	5.69	0.77	1.71	123.3094	4.6144	9	2.34943	134.7365	3.98422	0.8424	3.1418	37.98	4.7685	-0.007	4	1	0.3368	2.6791	37.97967
68	158.5	5.53	0.9	1.54	158.511	3.4887	8	2.18693	135.1403	4.05179	0.8736	3.1782	48.6	3.5802	-0.005	4	0.9532	0.3505	2.4996	51.16625
69	381.8	12.37	3.16	1.42	381.8387	3.2396	8	1.95641	137.28	4.12043	0.9048	3.2156	117.46	3.2749	-0.002	8	0.8327	0.3963	2.1798	141.4753

70	140.3	9.93	1.76	1.29	140.3215	7.0766	9	2.46975	137.28	4.18907	0.936	3.2531	41.847	7.2944	-0.006	3	1	0.3253	2.7848	41.84741
71	71.7	3.68	1.44	1.13	71.71763	5.1312	4	2.53215	130.226	4.25418	0.9672	3.287	20.524	5.4548	-0.013	3	1	0.3219	2.9129	20.52444
72	42.2	0.87	1.35	1.03	42.21652	2.0608	5	2.41798	118.3811	4.31337	0.9984	3.315	11.434	2.2953	-0.024	4	1	0.3192	2.8837	11.43393
73	59.2	1.41	1.44	1.03	59.21763	2.3811	5	2.34845	122.7395	4.37474	1.0296	3.3451	16.395	2.571	-0.017	4	1	0.3163	2.7827	16.39479
74	72.9	1.95	1.92	1.06	72.9235	2.674	5	2.31851	125.6197	4.43755	1.0608	3.3768	20.282	2.8473	-0.013	4	1	0.3134	2.7353	20.28161
75	52.2	1.43	1.92	1.03	52.2235	2.7382	5	2.42976	122.536	4.49882	1.092	3.4068	14.009	2.9964	-0.02	3	1	0.3106	2.8771	14.00857
76	182.3	7.56	2.2	0.96	182.3269	4.1464	8	2.21337	137.28	4.56746	1.1232	3.4443	51.61	4.2529	-0.005	4	0.9825	0.3136	2.5444	52.68982
77	61.5	2.27	-3.14	0.9	61.46157	3.6934	4	2.47084	126.3145	4.63062	1.1544	3.4762	16.349	3.9943	-0.024	3	1	0.3044	2.8999	16.34851
78	94.7	2.46	-2.85	0.99	94.66512	2.5986	5	2.23109	127.9561	4.69459	1.1856	3.509	25.64	2.7342	-0.015	4	1	0.3015	2.6445	25.63997
79	82.7	2.61	-2.57	1.2	82.66854	3.1572	5	2.33314	128.0587	4.75862	1.2168	3.5418	21.997	3.35	-0.018	4	1	0.2988	2.7517	21.99712
80	65.8	4.05	-2.54	1.49	65.76891	6.1579	3	2.61697	130.7158	4.82398	1.248	3.576	17.043	6.6453	-0.023	3	1	0.2959	3.0303	17.04285

	CPT-3	In situ data										Basic output data								
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	50.5	0.22	0.22	-0.1	50.50269	0.4356	6	1.98659	108.7583	0.05438	0	0.0544	927.71	0.4361	0.0003	6	0.4297	3.5805	1.5069	170.7095
2	28.4	0.12	0.06	0.11	28.40073	0.4225	5	2.20952	102.9193	0.10584	0	0.1058	267.34	0.4241	0.0002	6	0.5174	3.2909	1.7451	88.00188
3	79.4	0.12	0.25	0.13	79.40306	0.1511	6	1.64393	105.4269	0.15855	0	0.1586	499.8	0.1514	0.0002	6	0.3703	2.0195	1.351	151.2438
4	89.5	0.18	0.03	0	89.50037	0.2011	6	1.62909	108.6856	0.2129	0	0.2129	419.4	0.2016	2E-05	6	0.3849	1.8537	1.3793	156.4235
5	91.9	0.38	0.06	-0.07	91.90073	0.4135	6	1.74479	114.2176	0.27	0	0.27	339.37	0.4147	5E-05	6	0.4431	1.8316	1.5211	158.6162
6	100.3	0.1	-0.1	-0.27	100.2988	0.0997	0	1.50917	104.6626	0.32234	0	0.3223	310.16	0.1	-7E-05	6	0.37	1.5524	1.3221	146.6805
7	122.9	0.54	-0.13	-0.33	122.8984	0.4394	6	1.64878	117.4976	0.38108	0	0.3811	321.5	0.4408	-8E-05	6	0.4357	1.5604	1.4894	180.6788
8	111.8	0.28	-0.13	-0.56	111.7984	0.2505	6	1.5729	112.4611	0.43731	0	0.4373	254.65	0.2514	-8E-05	6	0.4157	1.4438	1.4299	151.9516
9	55.7	0.62	-0.13	-0.6	55.69841	1.1131	5	2.15918	116.5782	0.4956	0	0.4956	111.38	1.1231	-2E-04	6	0.6347	1.6184	1.9991	84.43131
10	85.3	1.08	-0.13	-0.66	85.29841	1.2661	5	2.04787	121.6786	0.55644	0	0.5564	152.29	1.2745	-1E-04	6	0.6096	1.4796	1.9251	118.4971
11	241.7	4.38	0.25	-0.84	241.7031	1.8121	6	1.8493	134.4634	0.62367	0	0.6237	386.55	1.8168	7E-05	6	0.5565	1.342	1.777	305.7595
12	359.9	12.13	0	-1.11	359.9	3.3704	8	1.98365	137.28	0.69231	0	0.6923	518.85	3.3769	0	8	0.6193	1.3005	1.9334	441.4823
13	247.4	3.4	-1.38	-1.24	247.3831	1.3744	6	1.74843	132.6669	0.75865	0	0.7587	325.08	1.3786	-4E-04	6	0.5346	1.1947	1.7027	278.4488
14	256.5	3.03	-1.47	-1.14	256.482	1.1814	6	1.68775	131.912	0.8246	0	0.8246	310.04	1.1852	-4E-04	6	0.5192	1.1382	1.6541	275.0093
15	154.2	7.82	-1.65	-0.96	154.1798	5.072	9	2.32664	137.28	0.89324	0	0.8932	171.61	5.1016	-8E-04	9	0.7681	1.139	2.2989	164.9978
16	106.4	3.38	-4.44	-0.91	106.3457	3.1783	5	2.26284	130.5646	0.95853	0	0.9585	109.95	3.2072	-0.003	5	0.7517	1.0771	2.2476	107.281
17	88.7	2.86	-7.32	-0.82	88.6104	3.2276	5	2.32	128.8973	1.02298	0	1.023	85.62	3.2653	-0.006	5	0.7821	1.0268	2.3195	84.99253
18	97.4	2.61	-8.56	-0.74	97.29523	2.6826	5	2.23318	128.456	1.0872	0	1.0872	88.491	2.7129	-0.006	5	0.7571	0.9797	2.2461	89.0762
19	87.7	2.14	-1.92	-0.68	87.6765	2.4408	5	2.23423	126.7494	1.15058	0	1.1506	75.202	2.4733	-0.002	5	0.7661	0.9378	2.2618	76.69018
20	67.9	2.36	-1.85	-0.8	67.87736	3.4769	4	2.42213	126.8411	1.214	0	1.214	54.912	3.5402	-0.002	4	0.8478	0.89	2.4682	56.07299
21	150	3.41	-1.54	-0.8	149.9812	2.2736	5	2.05535	131.4678	1.27973	0	1.2797	116.2	2.2932	-8E-04	5	0.7102	0.8737	2.0987	122.7807
22	132.8	4.87	-1.57	-0.78	132.7808	3.6677	8	2.25051	133.7784	1.34662	0	1.3466	97.603	3.7053	-9E-04	5	0.7932	0.8259	2.3083	102.5925
23	45.7	1.55	-1.38	-0.8	45.68311	3.3929	4	2.53592	122.7993	1.40802	0	1.408	31.445	3.5008	-0.002	4	0.9221	0.7684	2.6391	32.15237
24	42.1	1.25	-1.69	-0.71	42.07931	2.9706	4	2.52276	121.0249	1.46853	0	1.4685	27.654	3.078	-0.003	4	0.9268	0.738	2.6438	28.32541
25	36.7	0.93	-1.28	-0.63	36.68433	2.5351	4	2.52239	118.5265	1.5278	0	1.5278	23.011	2.6453	-0.003	4	0.9375	0.7087	2.6645	23.54554
26	107.6	2.23	-1.36	-0.53	107.5834	2.0728	5	2.1215	127.5499	1.59157	0	1.5916	66.596	2.1039	-9E-04	5	0.7739	0.7291	2.2275	73.03512
27	152.3	3.11	-1.09	-0.21	152.2867	2.0422	5	2.01549	130.8312	1.65699	0	1.657	90.906	2.0647	-5E-04	5	0.7354	0.719	2.1183	102.3612
28	96.8	2.59	-1.18	-0.14	96.78556	2.676	5	2.23393	128.3869	1.72118	0	1.7212	55.232	2.7245	-9E-04	5	0.8339	0.6665	2.3675	59.88119
29	86.2	1.72	-2.14	-0.2	86.17381	1.996	5	2.17757	125.1086	1.78374	0	1.7837	47.311	2.0382	-0.002	5	0.8211	0.6513	2.3274	51.94494
30	132.3	2.21	-1.19	-0.27	132.2854	1.6706	6	1.99175	127.9881	1.84773	0	1.8477	70.594	1.6943	-7E-04	5	0.7487	0.6588	2.1294	81.20986
31	225.3	2.16	-1.09	-0.39	225.2867	0.9588	6	1.65766	129.1192	1.91229	0	1.9123	116.81	0.967	-4E-04	6	0.6171	0.6941	1.7759	146.5185
32	304.2	3.29	-1.09	-0.43	304.1867	1.0816	6	1.61108	132.9304	1.97875	0	1.9788	152.73	1.0887	-3E-04	6	0.5998	0.687	1.7221	196.2095
33	356.5	5.11	-1.19	-0.51	356.4854	1.4334	6	1.66814	136.5391	2.04702	0	2.047	173.15	1.4417	-2E-04	6	0.6246	0.6622	1.779	221.8175
34	370.6	3.23	-1.29	-0.51	370.5842	0.8716	6	1.4843	133.2773	2.11366	0	2.1137	174.33	0.8766	-3E-04	6	0.5589	0.6793	1.598	236.5472
35	318.8	3.05	-1.47	-0.47	318.782	0.9568	6	1.55695	132.4905	2.17991	0	2.1799	145.24	0.9634	-3E-04	6	0.5958	0.6501	1.6864	194.524
36	231.8	3.79	-1.82	-0.37	231.7777	1.6352	6	1.82505	133.3025	2.24656	0	2.2466	102.17	1.6512	-6E-04	6	0.7121	0.585	1.9836	126.9025
37	78.1	2.32	-2.05	-0.36	78.07491	2.9715	5	2.3308	127.0574	2.31009	0	2.3101	32.797	3.0621	-0.002	4	0.9424	0.4791	2.5794	34.30592
38	72.7	2.03	-4.63	-0.14	72.64333	2.7945	5	2.33331	125.9045	2.37304	0	2.373	29.612	2.8889	-0.005	4	0.9527	0.4633	2.5986	30.76608
39	216	5.75	-3.26	-0.19	215.9601	2.6625	5	2.0132	136.1801	2.44113	0	2.4411	87.467	2.693	-0.001	5	0.8042	0.5105	2.2014	103.0191
40	47.2	1.45	-1.57	-0.37	47.18078	3.0733	4	2.49622	122.39	2.50232	0.0312	2.4711	18.08	3.2454	-0.003	4	1	0.4282	2.8096	18.08021
41	55.1	1.73	-2.3	-0.81	55.07185	3.1414	4	2.4543	124.059	2.56435	0.0624	2.502	20.987	3.2948	-0.004	4	1	0.4229	2.763	20.98659
42	117.3	4.24	-2	-0.86	117.2755	3.6154	5	2.2789	132.4619	2.63058	0.0936	2.537	45.189	3.6984	-0.002	4	0.9345	0.4417	2.5301	47.85457
43	186.7	6.5	-9.79	-0.54	186.5802	3.4838	8	2.14527	136.7205	2.69895	0.1248	2.5742	71.434	3.5349	-0.005	5	0.8719	0.4607	2.3625	80.05306
44	265.7	8.16	-6.08	-0.55	265.6256	3.072	8	2.01513	137.28	2.76759	0.156	2.6116	100.65	3.1043	-0.002	5	0.8148	0.4789	2.2081	118.9804
45	220.3	4	-13.52	-0.52	220.1345	1.8171	6	1.87491	133.5714	2.83437	0.1872	2.6472	82.088	1.8408	-0.005	5	0.7699	0.4936	2.0854	101.3747
46	48	2.32	-13.14	-0.59	47.83917	4.8496	4	2.63154	125.8628	2.8973	0.2184	2.6789	16.776	5.1622	-0.026	3	1	0.395	2.9626	16.77622
47	55.6	1.11	-12.27	-0.55	55.44982	2.0018	5	2.31936	120.8287	2.95772	0.2496	2.7081	19.383	2.1146	-0.022	4	0.9968	0.3919	2.6732	19.44088
48	71.9	2.78	-12.27	-0.6	71.74982	3.8746	4	2.4403	128.1749	3.0218	0.2808	2.741	25.074	4.0449	-0.017	4	1	0.386	2.7615	25.07403
49	70.2	2.49	-12.27	-0.57	70.04982	3.5546	4	2.41978	127.3103	3.08546	0.312	2.7735	24.145	3.7184	-0.018	4	1	0.3815	2.7499	24.1447
50	73.8	2.71	-12.18	-0.5	73.65092	3.6795	4	2.41606	128.0521	3.14949	0.3432	2.8063	25.123	3.8439	-0.017	4	1	0.3771	2.7462	25.12269
51	559.7	7.4	-1.95	-0.49	559.6761	1.3222	6	1.53508	137.28	3.21813	0.3744	2.8437	195.68	1.3298	-9E-04	6	0.6271	0.538	1.6861	282.9089
52	276.2	8.63	-2.87	-0.41	276.1649	3.1249	8	2.01252	137.28	3.28677	0.4056	2.8812	94.711	3.1626	-0.002	5	0.8368	0.4325	2.2321	111.537
53	65.1	1.74	-2.08	-0.49	65.07454	2.6739	5	2.35356	124.5083	3.34902	0.4368	2.9122	21.195	2.8189	-0.01	4	1	0.3633	2.7175	21.19535
54	171.1	3.16	-2.52	-0.22	171.0692	1.8472	6	1.94955	131.2316	3.41464	0.468	2.9466	56.897	1.8848	-0.004	5	0.8356	0.4249	2.2207	67.33104
55	253.1	9.52	-5.77	0.29	253.0294	3.7624	8	2.10113	137.28	3.48328	0.4992	2.9841	83.626	3.8149	-0.004	4	0.8831	0.4003	2.341	94.40337
56	47.5	0.92	-5.77	0.74	47.42938	1.9397	5	2.36224	119.0739	3.54281	0.5304	3.0124	14.569	2.0963	-0.022	4	1	0.3513	2.7742	14.56858
57	60.8	1.38	-5.87	0.99	60.72815	2.2724	5	2.32665	122.6436	3.60413	0.5616	3.0425	18.775	2.4158	-0.017	4	1	0.3478	2.7192	18.77515
58	68.2	1.99	-6.06	1.17	68.12583	2.9211	5	2.36658	125.6023	3.66694	0.5928	3.0741	20.968	3.0872	-0.016	4	1	0.3442	2.7456	20.96814
59	55	1.71	-8.03	1.19	54.90171	3.1147	4	2.45267	123.9664	3.72892	0.624	3.1049	16.481	3.3416	-0.023	3	1	0.3408	2.8491	16.4812
60	107.8	3.54	-7.69	1.07	107.7059	3.2867	5	2.27038	130.934	3.79439	0.6552	3.1392	33.101	3.4068	-0.012	4	0.9972	0.3381	2.6208	33.20084
61	131.1	7.05	-9.69	0.84	130.9814	5.3824	9	2.38817	136.4519	3.86261	0.6864	3.1762	40.022	5.546	-0.011	3	1	0.3331	2.7103	40.02214
62	82.5	3.49	-8.7	0.83	82.39351	4.2358	4	2.42966	130.1765	3.9277	0.7176	3.2101	24.443	4.4478	-0.017	3	1	0.3296	2.7971	24.44342
63	62.6	2.37	-9.02	0.8	62.4896	3.7926	4	2.47424	126.6704	3.99103	0.7488	3.2422	18.043	4.0514	-0.024	3	1	0.3264	2.8706	18.04267
64	138.9	5.72	-8.83	0.71	138.7919	4.1213	9	2.27941	135.0635	4.05857	0.78	3.2786	41.095	4.2454	-0.011	4	1	0.3227	2.6192	41.0952
65	209.8	11.09	-9.02	0.55	209.6896	5.2888	9	2.2699	137.28	4.12721	0.8112	3.316	61.991	5.395	-0.007	4	0.9858	0.3243	2.5693	63.0058
66	225	9.24	-9.26	0.55	224.8867	4.1087	8	2.16054	137.28	4.19585	0.8424	3.3535	65.81	4.1869	-0.007	4	0.9449	0.3363	2.4556	70.13287
67	378.2	12.62	-1.9	0.36	378.1767	3.3371	8	1.96975	137.28	4.26449	0.8736	3.3909	110.27	3.3751	-0.003	8	0.8527	0.3704	2.2107	130.9002
68	135.8	10	-5.43	0.28	135.7335	7.3674	9	2.49229	137.28	4.33313	0.9048	3.4283	38.328	7.6103	-0.01	3	1	0.3086	2.824	38.32786
69	110.1	4.78	-5.68	0.49	110.0305	4.3443	9	2.35862	133.1835	4.39972	0.936	3.4637	30.496	4.5252	-0.013	4	1	0.3055	2.7315	30.49635

70	46.1	0.88	-5.77	0.69	46.02938	1.9118	5	2.36827	118.6756	4.45906	0.9672	3.4919	11.905	2.1169	-0.033	4	1	0.303	2.8499	11.90494
71	73.3	2.28	-5.49	0.71	73.2328	3.1134	5	2.36463	126.774	4.52244	0.9984	3.524	19.498	3.3183	-0.02	4	1	0.3003	2.7899	19.49759
72	98.2	2.4	-5.41	0.8	98.13378	2.4456	5	2.20115	127.8632	4.58637	1.0296	3.5568	26.301	2.5655	-0.015	4	1	0.2975	2.6186	26.30119
73	55.9	1.74	-5.04	0.91	55.83831	3.1161	4	2.44757	124.1349	4.64844	1.0608	3.5876	14.268	3.3991	-0.028	3	1	0.2949	2.9033	14.26839
74	660	5.96	-8.74	0.95	659.893	0.9032	6	1.35578	137.28	4.71708	1.092	3.6251	180.73	0.9097	-0.003	6	0.6125	0.4704	1.5496	291.2413
75	246.4	11.97	-12.66	0.66	246.245	4.861	9	2.20286	137.28	4.78572	1.1232	3.6625	65.927	4.9574	-0.008	4	0.9847	0.2945	2.5232	67.19574
76	157.9	9.12	-12.75	0.72	157.7439	5.7815	9	2.36846	137.28	4.85436	1.1544	3.7	41.322	5.9651	-0.014	3	1	0.286	2.7238	41.32193
77	116.3	4.39	-13.04	1.11	116.1404	3.7799	8	2.29664	132.6925	4.92071	1.1856	3.7351	29.777	3.9471	-0.019	4	1	0.2833	2.6988	29.77683
78	307.4	14.25	-9.6	1.08	307.2825	4.6374	9	2.13824	137.28	4.98935	1.2168	3.7726	80.13	4.714	-0.006	9	0.9597	0.2952	2.4431	84.33952
79	464.1	5.39	-7.85	0.88	464.0039	1.1616	6	1.52872	137.28	5.05799	1.248	3.81	120.46	1.1744	-0.004	6	0.7092	0.4031	1.7805	174.8375
80	214.9	12.98	-6.66	0.88	214.8185	6.0423	9	2.31433	137.28	5.12663	1.2792	3.8474	54.502	6.19	-0.008	3	1	0.275	2.6556	54.50182

	CPT-4	In situ data										Basic output data								
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	43.1	0.45	0.01	-1.97	43.10012	1.0441	5	2.23478	113.6079	0.0568	0	0.0568	757.75	1.0455	2E-05	6	0.5107	4.4528	1.7334	181.1392
2	84.9	1.02	-0.01	-2.95	84.89988	1.2014	6	2.03479	121.249	0.11743	0	0.1174	721.99	1.2031	-1E-05	6	0.5027	3.0194	1.6944	241.9364
3	62.3	0.83	-0.09	-3.15	62.2989	1.3323	5	2.16751	118.9858	0.17692	0	0.1769	351.13	1.3361	-1E-04	6	0.5627	2.7357	1.8465	160.6159
4	61.3	0.48	0.01	-3.19	61.30012	0.783	6	2.03828	114.9393	0.23439	0	0.2344	260.53	0.786	1E-05	6	0.5321	2.23	1.7593	128.6971
5	61	1.66	0.01	-3.25	61.00012	2.7213	5	2.379	124.0062	0.29639	0	0.2964	204.81	2.7346	1E-05	5	0.6747	2.3598	2.13	135.3834
6	85.2	1.69	-0.84	-3.39	85.18972	1.9838	5	2.1793	124.9518	0.35887	0	0.3589	236.38	1.9922	-7E-04	6	0.6218	1.9588	1.9828	157.0396
7	67.4	1.53	0.27	-3.48	67.4033	2.2699	5	2.29322	123.6529	0.4207	0	0.4207	159.22	2.2842	0.0003	5	0.6732	1.8606	2.1094	117.7827
8	77.2	1.13	-0.1	-3.62	77.19878	1.4638	5	2.12172	121.7664	0.48158	0	0.4816	159.3	1.4729	-9E-05	6	0.6227	1.6326	1.9693	118.372
9	133.5	1.5	-0.18	-3.7	133.4978	1.1236	6	1.86783	125.1748	0.54417	0	0.5442	244.33	1.1282	-1E-04	6	0.5454	1.4372	1.7582	180.5806
10	46	1.96	-0.01	-3.75	45.99988	4.2609	4	2.60308	124.5333	0.60643	0	0.6064	74.853	4.3178	-2E-05	4	0.8218	1.58	2.4755	67.78322
11	53.2	2.47	0.75	-3.91	53.20918	4.6421	4	2.58601	126.5807	0.66972	0	0.6697	78.449	4.7012	0.001	4	0.8285	1.4607	2.4841	72.53199
12	185.7	6.53	0.78	-4.04	185.7096	3.5162	8	2.14974	136.7428	0.7381	0	0.7381	250.61	3.5303	0.0003	8	0.6823	1.2786	2.0931	223.5141
13	175	8.66	0.87	-4.18	175.0107	4.9483	9	2.2872	137.28	0.80674	0	0.8067	215.94	4.9712	0.0004	9	0.743	1.2233	2.2433	201.394
14	135.3	6.71	-1.04	-4.39	135.2873	4.9598	9	2.35107	136.1691	0.87482	0	0.8748	153.65	4.9921	-6E-04	9	0.7747	1.1588	2.3185	147.2014
15	127.6	3.32	-0.6	-4.53	127.5927	2.602	5	2.1454	130.8778	0.94026	0	0.9403	134.7	2.6214	-3E-04	5	0.7048	1.0868	2.1267	130.0843
16	110.7	2.56	-0.36	-4.57	110.6956	2.3127	5	2.1478	128.6292	1.00457	0	1.0046	109.19	2.3338	-2E-04	5	0.7138	1.0378	2.1426	107.5811
17	106.9	4.51	-0.11	-4.5	106.8987	4.219	9	2.3564	132.6876	1.07092	0	1.0709	98.82	4.2616	-7E-05	9	0.8017	0.9904	2.3652	99.05575
18	129.7	4.72	-0.2	-4.59	129.6976	3.6392	8	2.25407	133.4922	1.13766	0	1.1377	113	3.6714	-1E-04	8	0.7703	0.9457	2.2744	114.9008
19	91.1	3.87	1.44	-4.6	91.11763	4.2473	4	2.4024	131.1782	1.20325	0	1.2033	74.726	4.3041	0.0012	4	0.8368	0.898	2.4407	76.31055
20	186.9	5.36	-0.02	-4.63	186.8998	2.8679	5	2.07599	135.3137	1.27091	0	1.2709	146.06	2.8875	-1E-05	5	0.7157	0.8771	2.1142	153.8722
21	56.5	1.96	0.16	-4.53	56.50196	3.4689	4	2.47679	125.0349	1.33343	0	1.3334	41.374	3.5528	0.0002	4	0.8865	0.8146	2.5549	42.47386
22	45.7	1.55	0.4	-4.59	45.7049	3.3913	4	2.53563	122.8004	1.39483	0	1.3948	31.767	3.4981	0.0007	4	0.9202	0.7755	2.6356	32.4758
23	40.7	1.55	-0.3	-5.04	40.69633	3.8087	4	2.6069	122.5173	1.45609	0	1.4561	26.949	3.95	-6E-04	4	0.9578	0.7365	2.7268	27.31477
24	52.1	1.4	-0.37	-5.42	52.09547	2.6874	5	2.425	122.3749	1.51727	0	1.5173	33.335	2.768	-5E-04	4	0.8924	0.725	2.5473	34.65281
25	50.6	2.37	0.03	-5.89	50.60037	4.6838	4	2.6038	126.1556	1.58035	0	1.5804	31.018	4.8348	4E-05	3	0.9695	0.6778	2.7422	31.40002
26	48.2	2.9	0.15	-6.18	48.20184	6.0164	3	2.69792	127.5139	1.64411	0	1.6441	28.318	6.2288	0.0002	3	1	0.6436	2.8513	28.31793
27	69.4	1.97	-1.32	-6.31	69.38384	2.8393	5	2.35222	125.573	1.70689	0	1.7069	39.649	2.9109	-0.001	4	0.8835	0.6554	2.4999	41.92081
28	109.7	2.78	-0.55	-6.45	109.6933	2.5343	5	2.17992	129.2103	1.7715	0	1.7715	60.921	2.5759	-4E-04	5	0.8161	0.6567	2.3158	66.97832
29	106.5	2.65	0.3	-6.55	106.5037	2.4882	5	2.18258	128.7879	1.83589	0	1.8359	57.012	2.5318	0.0002	5	0.8247	0.6348	2.3305	62.79272
30	129.2	3.32	0.57	-5.39	129.207	2.5695	5	2.1377	130.9085	1.90135	0	1.9014	66.955	2.6079	0.0003	5	0.8108	0.6218	2.2858	74.80775
31	267.3	4.12	0.58	-5	267.3071	1.5413	6	1.76685	134.2612	1.96848	0	1.9685	134.79	1.5527	0.0002	6	0.6611	0.6634	1.8844	166.3566
32	412.2	5.02	0.58	-4.8	412.2071	1.2178	6	1.57414	136.7633	2.03686	0	2.0369	201.37	1.2239	0.0001	6	0.5849	0.6818	1.6758	264.2914
33	310.3	4.52	0.45	-5.04	310.3055	1.4566	6	1.70855	135.303	2.10451	0	2.1045	146.45	1.4666	0.0001	6	0.648	0.6405	1.833	186.5562
34	95	4.88	0.29	-5.19	95.00355	5.1367	9	2.45523	132.9768	2.171	0	2.171	42.76	5.2568	0.0002	4	0.9689	0.4984	2.6669	43.72736
35	90.1	2.65	-0.48	-5.21	90.09412	2.9414	5	2.28523	128.3798	2.23519	0	2.2352	39.307	3.0162	-4E-04	4	0.9126	0.5054	2.51	41.96219
36	74.2	4.04	-0.34	-5.17	74.19584	5.4451	9	2.5424	130.9917	2.30069	0	2.3007	31.249	5.6193	-3E-04	3	1	0.4599	2.7894	31.24945
37	61.3	1.87	0.57	-4.96	61.30698	3.0502	5	2.41219	124.89	2.36313	0	2.3631	24.943	3.1725	0.0007	4	0.9871	0.4524	2.6911	25.20287
38	104.3	4.46	-0.52	-4.71	104.2936	4.2764	9	2.36767	132.5459	2.4294	0	2.4294	41.93	4.3784	-4E-04	4	0.9605	0.4501	2.6125	43.32917
39	48.7	1.4	0.2	-4.51	48.70245	2.8746	4	2.46633	122.2106	2.49051	0	2.4905	18.555	3.0295	0.0003	4	1	0.4249	2.7823	18.55522
40	137.7	4.95	-3	-4.28	137.6633	3.5957	8	2.23414	133.9857	2.5575	0	2.5575	52.827	3.6638	-0.002	4	0.9143	0.4462	2.4741	56.97838
41	204.2	6.45	-0.47	-4.18	204.1943	3.1588	8	2.088	136.884	2.62594	0.0312	2.5947	77.683	3.1999	-3E-04	5	0.849	0.467	2.2998	88.9542
42	352.8	10.2	-7.54	-4	352.7077	2.8919	8	1.92961	137.28	2.69458	0.0624	2.6322	132.97	2.9142	-0.002	5	0.7754	0.4933	2.102	163.1772
43	162.9	8.07	-2.14	-4.03	162.8738	4.9548	9	2.3049	137.28	2.76322	0.0936	2.6696	59.975	5.0403	-0.002	4	0.9471	0.4163	2.547	62.98732
44	146.9	7.8	-11.32	-3.84	146.7614	5.3148	9	2.35548	137.28	2.83186	0.1248	2.7071	53.168	5.4193	-0.007	4	0.9734	0.4008	2.6121	54.5148
45	49.9	1.47	-11.5	-3.71	49.75924	2.9542	4	2.46762	122.62	2.89317	0.156	2.7372	17.122	3.1366	-0.021	4	1	0.3866	2.8192	17.12206
46	69.3	2.04	-11.51	-3.63	69.15912	2.9497	5	2.36502	125.8206	2.95608	0.1872	2.7689	23.91	3.0814	-0.015	4	1	0.3821	2.7007	23.90964
47	177.2	5.61	-11.6	-3.6	177.058	3.1685	8	2.12482	135.5153	3.02384	0.2184	2.8054	62.035	3.2235	-0.006	5	0.8878	0.4208	2.3756	69.2054
48	81.9	3.21	-11.32	-3.38	81.76144	3.9261	4	2.40689	129.5458	3.08861	0.2496	2.839	27.711	4.0802	-0.014	4	1	0.3727	2.7316	27.71132
49	93.3	4.05	-11.32	-3.2	93.16144	4.3473	9	2.40406	131.565	3.1544	0.2808	2.8736	31.322	4.4997	-0.012	4	1	0.3682	2.7214	31.32208
50	199.2	6.46	-5.54	-3.11	199.1322	3.2441	8	2.10372	136.8341	3.22281	0.312	2.9108	67.304	3.2974	-0.004	5	0.8857	0.4081	2.3569	75.55985
51	65	2.45	0.22	-3.21	65.00269	3.7691	4	2.46054	127.0095	3.28632	0.3432	2.9431	20.97	3.9698	-0.005	3	1	0.3595	2.8149	20.96972
52	53.6	2.8	-0.72	-3.42	53.59119	5.2247	4	2.62161	127.5157	3.35008	0.3744	2.9757	16.884	5.5731	-0.008	3	1	0.3556	2.9824	16.88393
53	292.9	10.21	-1.23	-3.46	292.8849	3.486	8	2.04016	137.28	3.41872	0.4056	3.0131	96.069	3.5272	-0.002	5	0.8569	0.4079	2.2687	111.5857
54	79.4	3.47	0.35	-3.58	79.40428	4.37	4	2.45039	130.0444	3.48374	0.4368	3.0469	24.917	4.5706	-0.005	3	1	0.3473	2.7989	24.91699
55	53.2	1.21	-1.63	-3.82	53.18005	2.2753	5	2.36973	121.3579	3.54442	0.468	3.0764	16.134	2.4378	-0.012	4	1	0.3439	2.7749	16.13423
56	64.1	1.91	-1.82	-4.11	64.07772	2.9808	5	2.39155	125.1527	3.60699	0.4992	3.1078	19.458	3.1586	-0.01	4	1	0.3405	2.7772	19.45777
57	53.5	1.62	-1.88	-4.41	53.47699	3.0293	4	2.45247	123.5067	3.66875	0.5304	3.1384	15.871	3.2525	-0.013	3	1	0.3372	2.855	15.87085
58	70.2	2.72	-1.73	-4.58	70.17882	3.8758	4	2.44686	127.9613	3.73273	0.5616	3.1711	20.953	4.0935	-0.01	3	1	0.3337	2.8238	20.95346
59	143.3	10.88	-2.39	-4.86	143.2708	7.594	9	2.49063	137.28	3.80137	0.5928	3.2086	43.468	7.801	-0.005	3	1	0.3298	2.7959	43.46779
60	71.8	2.84	-2.66	-4.94	71.76744	3.9572	4	2.44702	128.3318	3.86553	0.624	3.2415	20.947	4.1825	-0.012	3	1	0.3264	2.8299	20.94746
61	58.5	2.7	-2.66	-5.11	58.46744	4.618	4	2.55652	127.462	3.92927	0.6552	3.2741	16.658	4.9507	-0.016	3	1	0.3232	2.9532	16.65763
62	103.7	4.34	-2.69	-5.25	103.6671	4.1865	9	2.3621	132.3316	3.99543	0.6864	3.309	30.121	4.3543	-0.009	4	1	0.3198	2.724	30.1211
63	338.4	10.2	-3.69	-5.56	338.3548	3.0146	8	1.9542	137.28	4.06407	0.7176	3.3465	99.894	3.0512	-0.003	5	0.8473	0.377	2.202	119.0905
64	265.7	12.44	-8.58	-5.39	265.595	4.6838	9	2.17254	137.28	4.13271	0.7488	3.3839	77.266	4.7579	-0.005	9	0.9451	0.3333	2.4528	82.3549
65	657.8	8.35	1.1	-5.46	657.8135	1.2694	6	1.48641	137.28	4.20135	0.78	3.4214	191.04	1.2775	-0.001	6	0.6472	0.4679	1.6666	289.0333
66	583.5	7.5	0.41	-5.34	583.505	1.2853	6	1.51558	137.28	4.26999	0.8112	3.4588	167.47	1.2948	-0.001	6	0.6661	0.4543	1.7114	248.7183
67	96	3.5	0.77	-5.19	96.00942	3.6455	5	2.33697	130.5705	4.33528	0.8424	3.4929	26.246	3.8179	-0.009	4	1	0.3029	2.73	26.24604
68	70.1	2.87	-3.84	-5.21	70.053	4.0969	4	2.46525	128.3497	4.39945	0.8736	3.5259	18.621	4.3714	-0.018	3	1	0.3001	2.8813	18.62063
69	66.5	2.49	-3.84	-4.82	66.453	3.747	4	2.45213	127.1818	4.46304	0.9048	3.5582	17.422	4.0168	-0.019	3	1	0.2974	2.88	17.42151

70	78.2	1.85	-2.68	-4.65	78.1672	2.3667	5	2.25967	125.4039	4.52574	0.936	3.5897	20.514	2.5122	-0.015	4	1	0.2948	2.6984	20.5144
71	50.5	1.06	-2.66	-4.55	50.46744	2.1004	5	2.36394	120.2618	4.58587	0.9672	3.6187	12.679	2.3103	-0.025	4	1	0.2924	2.8479	12.67911
72	56.4	1.28	-2.47	-4.43	56.36977	2.2707	5	2.35033	121.9115	4.64683	0.9984	3.6484	14.177	2.4747	-0.023	4	1	0.29	2.8246	14.17676
73	393.4	9.81	-3.06	-4.75	393.3626	2.4939	8	1.85036	137.28	4.71547	1.0296	3.6859	105.44	2.5241	-0.003	5	0.8297	0.355	2.1134	130.408
74	105.4	2.35	-3.51	-5.15	105.357	2.2305	5	2.15088	127.8824	4.77941	1.0608	3.7186	27.047	2.3365	-0.013	4	1	0.2845	2.5839	27.04709
75	161.9	6.81	-3.42	-5.68	161.8581	4.2074	8	2.2478	136.7147	4.84777	1.092	3.7558	41.805	4.3373	-0.009	4	1	0.2817	2.6205	41.80512
76	136.7	5.44	-3.42	-6.02	136.6581	3.9807	8	2.27131	134.6585	4.9151	1.1232	3.7919	34.743	4.1293	-0.01	4	1	0.279	2.6631	34.7433
77	133.8	6.26	-3.7	-6.24	133.7547	4.6802	9	2.33348	135.6334	4.98291	1.1544	3.8285	33.635	4.8613	-0.011	3	1	0.2764	2.7225	33.63492

	CPT-5	In situ data										Basic output data										
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	73.4	1.68	-0.11	-0.21	73.39865	2.2889	5	2.26899	124.5451	0.06227	0	0.0623	1177.7	2.2908	-1E-04	8	0.5559	4.8292	1.8412	334.7039
2	47.5	2.29	0.03	-0.61	47.50037	4.821	4	2.63182	125.7502	0.12515	0	0.1252	378.55	4.8338	5E-05	9	0.7066	4.5195	2.2318	202.3549
3	27.4	1.08	0.29	-0.85	27.40355	3.9411	4	2.74346	118.9092	0.1846	0	0.1846	147.45	3.9678	0.0008	4	0.7525	3.7207	2.3504	95.71057
4	23.4	0.85	-0.04	-0.99	23.39951	3.6326	4	2.77239	116.7717	0.24299	0	0.243	95.299	3.6707	-1E-04	4	0.7814	3.1571	2.4175	69.0933
5	27.6	1.22	-0.06	-1.15	27.59927	4.4204	3	2.77441	119.8184	0.3029	0	0.3029	90.118	4.4695	-2E-04	4	0.8066	2.7425	2.4745	70.75003
6	66.7	1.33	-0.62	-1.29	66.69241	1.9942	5	2.25835	122.602	0.3642	0	0.3642	182.12	2.0052	-7E-04	5	0.6476	1.995	2.0498	125.0588
7	56.1	1.1	-0.01	-1.38	56.09988	1.9608	5	2.30964	120.7909	0.42459	0	0.4246	131.13	1.9757	-1E-05	5	0.6769	1.8554	2.1188	97.62508
8	59.3	2.02	-0.43	-1.57	59.29474	3.4067	4	2.45648	125.3732	0.48728	0	0.4873	120.69	3.4349	-5E-04	5	0.7463	1.7837	2.2924	99.13292
9	68.8	1.25	-0.05	-1.79	68.79939	1.8169	5	2.22123	122.224	0.54839	0	0.5484	124.46	1.8315	-5E-05	5	0.671	1.5543	2.0872	100.254
10	73.8	1.41	-0.1	-2.02	73.79878	1.9106	5	2.21336	123.2764	0.61003	0	0.61	119.98	1.9265	-1E-04	5	0.6796	1.4539	2.1019	100.5663
11	71.1	2.25	0.24	-2.23	71.10294	3.1644	5	2.37859	126.6051	0.67333	0	0.6733	104.6	3.1947	0.0003	5	0.7524	1.405	2.2849	93.52139
12	70.2	2.94	0.19	-2.43	70.20233	4.1879	4	2.47173	128.5312	0.7376	0	0.7376	94.177	4.2324	0.0002	4	0.7983	1.3338	2.3966	87.56473
13	70	3.22	-0.89	-2.65	69.98911	4.6007	4	2.50317	129.1894	0.80219	0	0.8022	86.247	4.6541	-9E-04	9	0.8201	1.2549	2.4464	82.05689
14	45	2.15	0.37	-2.76	45.00453	4.7773	4	2.64522	125.157	0.86477	0	0.8648	51.042	4.8709	0.0006	4	0.883	1.195	2.6039	49.85121
15	38	2.29	0.56	-2.86	38.00685	6.0252	3	2.76873	125.2064	0.92738	0	0.9274	39.983	6.1759	0.0011	3	0.9404	1.132	2.7469	39.67029
16	27.3	1.57	-0.71	-2.91	27.29131	5.7528	3	2.85611	121.6366	0.98819	0	0.9882	26.617	5.9689	-0.002	3	0.9855	1.0697	2.8577	26.591
17	78.8	3.48	1.89	-3.09	78.82313	4.415	4	2.45584	130.0475	1.05322	0	1.0532	73.84	4.4747	0.0018	4	0.8382	1.0039	2.463	73.78501
18	78.2	2.68	2.76	-3.25	78.23378	3.4256	5	2.37545	128.1179	1.11728	0	1.1173	69.022	3.4753	0.0026	4	0.8162	0.9566	2.3973	69.7157
19	35.9	1.46	0.64	-3.29	35.90783	4.066	4	2.66587	121.7743	1.17816	0	1.1782	29.478	4.2039	0.0013	4	0.9414	0.9038	2.7185	29.66397
20	33.8	1	0.83	-3.19	33.81016	2.9577	4	2.59277	118.8585	1.23759	0	1.2376	26.319	3.0701	0.0018	4	0.9233	0.8653	2.6635	26.63745
21	26.5	0.91	0.95	-3.08	26.51163	3.4325	4	2.71507	117.5753	1.29638	0	1.2964	19.451	3.6089	0.0027	3	0.9828	0.8191	2.8124	19.51861
22	23.4	0.77	0.95	-3.02	23.41163	3.289	4	2.74471	116.0497	1.3544	0	1.3544	16.286	3.4909	0.0031	3	1	0.7812	2.8649	16.28555
23	49.2	1.95	0.19	-3.04	49.20233	3.9632	4	2.56017	124.6601	1.41673	0	1.4167	33.729	4.0807	0.0003	4	0.9315	0.762	2.6626	34.41086
24	157.7	2.28	0.67	-3.16	157.7082	1.4457	6	1.89367	128.645	1.48106	0	1.4811	105.48	1.4594	0.0003	6	0.6697	0.7984	1.9677	117.8747
25	32.1	1.69	0.67	-3.21	32.1082	5.2635	3	2.77855	122.572	1.54234	0	1.5423	19.818	5.529	0.0016	3	1	0.686	2.9281	19.8178
26	27.7	1.05	0.95	-3.37	27.71163	3.789	4	2.72853	118.7303	1.60171	0	1.6017	16.301	4.0215	0.0026	3	1	0.6606	2.9028	16.30129
27	110.7	2.89	0.67	-3.66	110.7082	2.6105	5	2.18686	129.5167	1.66647	0	1.6665	65.433	2.6504	0.0004	5	0.8074	0.693	2.3049	71.41409
28	376.3	4.32	0.34	-3.82	376.3042	1.148	6	1.57569	135.4422	1.73419	0	1.7342	215.99	1.1533	7E-05	6	0.5613	0.7578	1.6517	268.2684
29	410.9	5.15	0.67	-3.93	410.9082	1.2533	6	1.58527	136.9427	1.80266	0	1.8027	226.95	1.2588	0.0001	6	0.5695	0.7383	1.6648	285.4472
30	425	5.95	0.49	-3.98	425.006	1.4	6	1.61755	137.28	1.8713	0	1.8713	226.12	1.4062	8E-05	6	0.5872	0.7155	1.7025	286.1278
31	252.9	3.87	0.57	-4.14	252.907	1.5302	6	1.779	133.6681	1.93813	0	1.9381	129.49	1.542	0.0002	6	0.664	0.6691	1.8958	158.6923
32	70.3	2.61	-0.27	-4.11	70.2967	3.7128	4	2.43262	127.6633	2.00197	0	2.002	34.114	3.8217	-3E-04	4	0.949	0.546	2.6355	35.24131
33	73.9	3.11	-4.45	-4.05	73.84553	4.2115	4	2.45896	129.0659	2.0665	0	2.0665	34.735	4.3327	-0.004	4	0.9653	0.5241	2.6703	35.55206
34	61.1	1.97	-5.06	-3.86	61.03807	3.2275	4	2.43093	125.2605	2.12913	0	2.1291	27.668	3.3441	-0.006	4	0.9671	0.5085	2.6674	28.31158
35	106.8	5.45	-5.74	-3.54	106.7297	5.1064	9	2.42229	134.069	2.19616	0	2.1962	47.598	5.2136	-0.004	4	0.956	0.4975	2.6297	49.15352
36	43.7	1.57	-5.34	-3.27	43.63464	3.5981	4	2.56794	122.7812	2.25755	0	2.2576	18.328	3.7944	-0.009	3	1	0.4687	2.8473	18.32829
37	44.8	1.43	-1.5	-3.39	44.78164	3.1933	4	2.52413	122.161	2.31863	0	2.3186	18.314	3.3676	-0.003	4	1	0.4564	2.8151	18.3138
38	260	6.78	-4.12	-3.81	259.9496	2.6082	8	1.96042	137.28	2.38727	0	2.3873	107.89	2.6324	-0.001	5	0.7741	0.5327	2.129	129.6606
39	364.1	8.19	-4.01	-4.32	364.0509	2.2497	8	1.82832	137.28	2.45591	0	2.4559	147.23	2.265	-8E-04	5	0.7206	0.5451	1.98	186.2883
40	145.7	7.82	-3.46	-4.51	145.6577	5.3688	9	2.36095	137.28	2.52455	0	2.5246	56.696	5.4635	-0.002	4	0.9575	0.4349	2.5929	58.82931
41	84.5	5.07	-7.01	-4.77	84.4142	6.0061	9	2.54035	132.9681	2.59104	0	2.591	31.579	6.1963	-0.006	3	1	0.4084	2.8164	31.5793
42	38.1	0.76	-7.5	-4.9	38.0082	1.9996	5	2.44523	117.1359	2.64961	0	2.6496	13.345	2.1494	-0.015	4	1	0.3994	2.812	13.34485
43	82.9	1.85	-7.63	-4.86	82.80661	2.2341	5	2.22426	125.5445	2.71238	0	2.7124	29.529	2.3098	-0.007	4	0.9439	0.4112	2.5329	31.12916
44	105.4	4.35	-7.54	-4.86	105.3077	4.1308	9	2.35329	132.3868	2.77857	0	2.7786	36.9	4.2427	-0.005	4	0.9919	0.3838	2.6499	37.1913
45	70.9	2.79	-7.54	-4.97	70.80771	3.9403	4	2.44956	128.169	2.84266	0	2.8427	23.909	4.1051	-0.008	3	1	0.3722	2.7812	23.909
46	68.9	2.99	-7.44	-4.9	68.80893	4.3454	4	2.48948	128.6057	2.90696	0	2.907	22.67	4.537	-0.008	3	1	0.364	2.8273	22.67042
47	174.8	8.28	-1.82	-4.66	174.7777	4.7375	9	2.27172	137.28	2.9756	0	2.9756	57.737	4.8195	-8E-04	4	0.961	0.3702	2.5458	60.11236
48	173.4	6.27	-0.38	-4.06	173.3954	3.616	8	2.17678	136.2782	3.04374	0	3.0437	55.968	3.6806	-2E-04	4	0.9317	0.3737	2.4593	60.15621
49	91.6	3.32	-0.04	-3.85	91.59951	3.6245	5	2.34834	130.0695	3.10877	0	3.1088	28.465	3.7518	-3E-05	4	1	0.3404	2.6986	28.46485
50	526	11.93	-1.79	-3.68	525.9781	2.2682	8	1.75532	137.28	3.17741	0	3.1774	164.54	2.2819	-3E-04	6	0.7399	0.4433	1.9408	219.0152
51	107.3	8.36	-1.92	-3.8	107.2765	7.793	9	2.56956	137.212	3.24602	0	3.246	32.049	8.0361	-0.001	3	1	0.326	2.8938	32.04864
52	54.5	1.28	-3.53	-3.99	54.45679	2.3505	5	2.3715	121.8273	3.30693	0	3.3069	15.467	2.5025	-0.005	4	1	0.32	2.7965	15.46747
53	73.3	1.88	-3.53	-4.12	73.25679	2.5663	5	2.30446	125.3634	3.36961	0	3.3696	20.74	2.6901	-0.004	4	1	0.314	2.7126	20.74041
54	100.5	3.65	-3.63	-4.16	100.4556	3.6335	5	2.3232	130.988	3.43511	0	3.4351	28.244	3.7621	-0.003	4	1	0.308	2.7019	28.24379
55	206	6.99	-3.64	-4.41	205.9555	3.3939	8	2.11167	137.28	3.50375	0	3.5038	57.781	3.4527	-0.001	4	0.9426	0.3235	2.4306	61.89311
56	250.1	7	-3.53	-4.69	250.0568	2.7994	8	1.99534	137.28	3.57239	0	3.5724	68.997	2.8399	-0.001	5	0.8947	0.3367	2.2983	78.42757
57	158.7	11.85	-8.56	-4.9	158.5952	7.4719	9	2.4612	137.28	3.64103	0	3.641	42.558	7.6474	-0.004	3	1	0.2906	2.7954	42.55782
58	134	6.73	-8.68	-5.02	133.8938	5.0264	9	2.35839	136.1656	3.70911	0	3.7091	35.099	5.1696	-0.005	3	1	0.2853	2.7281	35.09861
59	109.7	4.66	-8.78	-5.04	109.5925	4.2521	9	2.35237	132.9877	3.7756	0	3.7756	28.026	4.4038	-0.006	3	1	0.2803	2.7503	28.02649
60	85.8	3.48	-8.97	-4.76	85.69021	4.0611	4	2.40469	130.2512	3.84073	0	3.8407	21.311	4.2517	-0.008	3	1	0.2755	2.8289	21.31092
61	118.8	6.13	-8.97	-4.78	118.6902	5.1647	9	2.39862	135.1884	3.90832	0	3.9083	29.369	5.3406	-0.006	3	1	0.2707	2.7931	29.36857
62	200.4	11.47	-8.87	-4.97	200.2914	5.7267	9	2.30977	137.28	3.97696	0	3.977	49.363	5.8427	-0.003	3	1	0.2661	2.6651	49.36289
63	378.9	10.26	-5.42	-4.95	378.8337	2.7083	8	1.88961	137.28	4.0456	0	4.0456	92.641	2.7376	-0.001	5	0.8757	0.309	2.1895	109.4443
64	76.3	2.63	-1.78	-5.08	76.27821	3.4479	5	2.38494	127.9183	4.10956	0	4.1096	17.561	3.6442	-0.002	3	1	0.2575	2.8507	17.56115
65	104	7.05	-2.14	-5.4	103.9738	6.7806	9	2.52804	135.8887	4.17751	0	4.1775	23.889	7.0644	-0.002	3	1	0.2533	2.9422	23.88896
66	68.9	1.84	-2.17	-5.63	68.87344	2.6716	5	2.33576	125.0555	4.24004	0	4.24	15.244	2.8468	-0.002	4	1	0.2496	2.8343	15.2436
67	88.6	2.88	-2.02	-5.9	88.57528	3.2515	5	2.3225	128.9473	4.30451	0	4.3045	19.577	3.4176	-0.002	4	1	0.2458	2.7965	19.57732
68	72	2.09	-2	-6.25	71.97552	2.9038	5	2.34803	126.0951	4.36756	0	4.3676	15.48	3.0914	-0.002	3	1	0.2423	2.8503	15.47958
69	152.8	6.59	-1.91	-6.52	152.7766	4.3135	9	2.27106	136.3336	4.43572	0	4.4357	33.442	4.4425	-9E-04	4	1	0.2385	2.697	33.44232

70	243.7	13.05	-2.28	-7.19	243.6721	5.3556	9	2.24163	137.28	4.50436	0	4.5044	53.097	5.4564	-7E-04	4	1	0.2349	2.6219	53.0969
71	118.8	5.28	-2.36	-7.33	118.7711	4.4455	9	2.34628	134.0979	4.57141	0	4.5714	24.981	4.6235	-0.001	3	1	0.2315	2.8014	24.98127
72	181.3	7.94	-2.23	-7.45	181.2727	4.3801	9	2.23457	137.28	4.64005	0	4.6401	38.067	4.4952	-9E-04	4	1	0.228	2.6603	38.06695
73	449.2	6.81	0.1	-7.73	449.2012	1.516	6	1.63435	137.28	4.70869	0	4.7087	94.398	1.5321	2E-05	6	0.8239	0.2923	1.9702	122.7797
74	539.6	8.55	-0.54	-7.9	539.5934	1.5845	6	1.61167	137.28	4.77733	0	4.7773	111.95	1.5987	-7E-05	6	0.8103	0.2948	1.9258	149.0182
75	230.2	8.03	-1.46	-8.1	230.1821	3.4885	8	2.09508	137.28	4.84597	0	4.846	46.5	3.5636	-5E-04	4	1	0.2184	2.5276	46.49968
76	453.8	11.69	-2.48	-8.16	453.7696	2.5762	8	1.83353	137.28	4.91461	0	4.9146	91.331	2.6044	-4E-04	5	0.9163	0.2448	2.1882	103.8595
77	315.3	6.75	-1.08	-8.24	315.2868	2.1409	6	1.84283	137.28	4.98325	0	4.9833	62.269	2.1753	-3E-04	5	0.9491	0.2298	2.2628	67.37948
78	550.5	9.82	-1.4	-8.19	550.4829	1.7839	8	1.65321	137.28	5.05189	0	5.0519	107.97	1.8004	-2E-04	6	0.8469	0.2661	1.9882	137.1572
79	561.7	12.81	-1.99	-8.16	561.6756	2.2807	8	1.7451	137.28	5.12053	0	5.1205	108.69	2.3017	-3E-04	5	0.8863	0.2472	2.0836	130.0337
80	222	0	-2.31	-7.94	221.9717	0	0	0	120.9	5.18098	0	5.181	41.844	0	-8E-04	0	1	0.2042	0	0

	CPT-6	In situ data										Basic output data								
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	48.2	1.05	-0.01	-0.22	48.19988	2.1784	5	2.38941	120.0803	0.06004	0	0.06	801.79	2.1812	-1E-05	6	0.5799	5.2789	1.9017	240.1689
2	45.7	1.69	-0.18	-0.3	45.6978	3.6982	4	2.5618	123.4328	0.12176	0	0.1218	374.32	3.7081	-3E-04	8	0.6771	4.3234	2.1543	186.2217
3	30.4	0.99	0	-0.37	30.4	3.2566	4	2.65504	118.5256	0.18102	0	0.181	166.94	3.2761	0	5	0.723	3.584	2.2678	102.3581
4	21.4	1.06	-1.27	-0.44	21.35998	4.9626	3	2.89082	118.1648	0.2401	0	0.2401	87.962	5.019	-0.011	4	0.8227	3.3881	2.5255	67.62606
5	32.7	1.11	-0.2	-0.59	32.69755	3.3948	4	2.64306	119.5405	0.29987	0	0.2999	108.04	3.4262	-4E-04	5	0.76	2.6072	2.3532	79.82966
6	47.3	1.77	-2.77	-0.65	47.2661	3.7448	4	2.55513	123.8535	0.3618	0	0.3618	129.64	3.7736	-0.004	5	0.7519	2.2409	2.3233	99.33708
7	72.5	1.91	-0.13	-0.69	72.49841	2.6345	5	2.31571	125.4538	0.42453	0	0.4245	169.78	2.6501	-1E-04	5	0.6838	1.8673	2.1366	127.1917
8	71.5	1.81	-0.12	-0.82	71.49853	2.5315	5	2.30775	125.0265	0.48704	0	0.487	145.8	2.5489	-1E-04	5	0.6928	1.7119	2.1523	114.8852
9	97.5	1.44	0.13	-0.96	97.50159	1.4769	5	2.04863	124.1097	0.54909	0	0.5491	176.57	1.4853	0.0001	6	0.6103	1.4924	1.9279	136.7409
10	82	1.32	0.1	-1.08	82.00122	1.6097	5	2.12938	123.0508	0.61062	0	0.6106	133.29	1.6218	9E-05	5	0.649	1.4287	2.0216	109.9
11	58	2.07	0.23	-1.25	58.00282	3.5688	4	2.47759	125.4984	0.67337	0	0.6734	85.138	3.6107	0.0003	4	0.7883	1.428	2.3792	77.36943
12	66.5	2.25	-0.35	-1.41	66.49572	3.3837	4	2.41972	126.4417	0.73659	0	0.7366	89.275	3.4216	-4E-04	5	0.7781	1.3256	2.3437	82.38076
13	62.4	2.35	-0.1	-1.6	62.39878	3.7661	4	2.47245	126.6048	0.79989	0	0.7999	77.009	3.815	-1E-04	4	0.8077	1.2535	2.414	72.97575
14	74	2.54	0.37	-1.73	74.00453	3.4322	5	2.39239	127.5898	0.86369	0	0.8637	84.684	3.4728	0.0004	5	0.7874	1.1734	2.353	81.10704
15	69.5	2.65	-1.34	-1.87	69.4836	3.8139	4	2.44462	127.7462	0.92756	0	0.9276	73.91	3.8655	-0.001	4	0.8165	1.1135	2.4215	72.14538
16	38.2	2.04	-0.48	-2.01	38.19412	5.3411	3	2.72966	124.3725	0.98975	0	0.9898	37.59	5.4832	-9E-04	3	0.9357	1.0645	2.7268	37.42874
17	34.5	1.77	0.67	-2.2	34.5082	5.1292	3	2.74835	123.0862	1.05129	0	1.0513	31.825	5.2904	0.0014	3	0.9533	1.0062	2.7654	31.81506
18	31.8	1.87	-0.32	-2.31	31.79608	5.8812	3	2.81543	123.2887	1.11293	0	1.1129	27.57	6.0946	-8E-04	3	0.9895	0.9512	2.8527	27.58428
19	36.5	1.62	-1.63	-2.45	36.48005	4.4408	4	2.68735	122.5738	1.17422	0	1.1742	30.067	4.5885	-0.003	3	0.9489	0.9059	2.7385	30.22804
20	35.9	1.72	-2.59	-2.47	35.8683	4.7953	4	2.71588	122.9708	1.23571	0	1.2357	28.027	4.9664	-0.005	3	0.9693	0.8604	2.7844	28.16052
21	32.5	1.55	-1.25	-2.39	32.4847	4.7715	3	2.74528	121.9677	1.29669	0	1.2967	24.052	4.9699	-0.003	3	0.9913	0.8175	2.8342	24.0946
22	29.5	1.25	-1.08	-2.46	29.48678	4.2392	4	2.74093	120.1575	1.35677	0	1.3568	20.733	4.4437	-0.003	3	1	0.7799	2.8505	20.7331
23	35.8	1.2	-0.95	-2.5	35.78837	3.353	4	2.61021	120.3312	1.41693	0	1.4169	24.258	3.4913	-0.002	4	0.9557	0.7565	2.7263	24.57328
24	41.4	1.38	-0.94	-2.54	41.38849	3.3343	4	2.56196	121.7084	1.47779	0	1.4778	27.007	3.4577	-0.002	4	0.9434	0.7297	2.6862	27.52298
25	41.5	2.12	-0.92	-2.64	41.48874	5.1098	4	2.69079	124.8558	1.54022	0	1.5402	25.937	5.3068	-0.002	3	1	0.687	2.8302	25.93697
26	27.3	1.18	-0.86	-2.78	27.28947	4.324	3	2.77162	119.547	1.59999	0	1.6	16.056	4.5933	-0.002	3	1	0.6613	2.9444	16.05604
27	37.4	1.55	-0.76	-2.84	37.3907	4.1454	4	2.65892	122.3107	1.66114	0	1.6611	21.509	4.3382	-0.002	3	1	0.637	2.8316	21.509
28	34.1	1.25	-0.76	-2.92	34.0907	3.6667	4	2.65192	120.5114	1.7214	0	1.7214	18.804	3.8617	-0.002	3	1	0.6147	2.8436	18.80405
29	124.4	5.71	-0.95	-3.21	124.3884	4.5905	9	2.34535	134.7834	1.78879	0	1.7888	68.538	4.6574	-6E-04	4	0.8795	0.6302	2.4792	73.01605
30	73.7	4.05	-0.76	-3.47	73.6907	5.4959	9	2.54741	130.9932	1.85429	0	1.8543	38.741	5.6378	-8E-04	3	0.9744	0.5789	2.7209	39.30173
31	65.8	3.43	-0.72	-3.54	65.79119	5.2135	4	2.56177	129.5008	1.91904	0	1.919	33.283	5.3701	-8E-04	3	0.9908	0.5544	2.7544	33.46684
32	58.1	2.69	-0.71	-3.51	58.09131	4.6306	4	2.5593	127.4191	1.98275	0	1.9828	28.298	4.7943	-9E-04	3	1	0.5337	2.7724	28.29898
33	68.1	2.63	-0.76	-3.62	68.0907	3.8625	4	2.45462	127.6414	2.04657	0	2.0466	32.271	3.9822	-8E-04	4	0.9634	0.5296	2.668	33.05872
34	123.4	5.24	-0.76	-3.69	123.3907	4.2467	9	2.32043	134.1353	2.11364	0	2.1136	57.378	4.3207	-5E-04	4	0.9048	0.5347	2.5049	61.28714
35	58.6	3.51	-1.85	-3.69	58.57736	5.9921	3	2.64048	129.3863	2.17833	0	2.1783	25.891	6.2235	-0.002	3	1	0.4857	2.8787	25.89095
36	40.2	2.24	-1.8	-3.8	40.17797	5.5752	3	2.7277	125.1803	2.24092	0	2.2409	16.929	5.9045	-0.003	3	1	0.4722	2.9981	16.92923
37	101.2	3.34	-1.72	-3.86	101.179	3.3011	5	2.2894	130.356	2.3061	0	2.3061	42.875	3.3781	-0.001	4	0.9186	0.4889	2.5169	45.68302
38	99.4	4.84	-1.62	-4.16	99.38017	4.8702	9	2.42496	133.0265	2.37261	0	2.3726	40.886	4.9893	-0.001	4	0.9778	0.4541	2.6653	41.62732
39	65	2.59	-1.72	-4.09	64.97895	3.9859	4	2.47843	127.4152	2.43632	0	2.4363	25.671	4.1412	-0.002	4	1	0.4343	2.7606	25.67095
40	144.2	4.19	-1.79	-3.96	144.1781	2.9061	5	2.14883	132.8788	2.50276	0	2.5028	56.608	2.9575	-9E-04	5	0.8738	0.4713	2.3765	63.10207
41	30.1	0.73	-2.29	-4.03	30.07197	2.4275	4	2.57726	116.27	2.56089	0.0312	2.5297	10.875	2.6535	-0.007	3	1	0.4183	2.9367	10.87526
42	81.9	3.55	-2.24	-4.26	81.87258	4.336	4	2.43918	130.2858	2.62604	0.0624	2.5636	30.912	4.4797	-0.003	4	1	0.4127	2.7242	30.91177
43	99.1	4.44	-2.2	-4.31	99.07307	4.4815	9	2.39749	132.3878	2.69223	0.0936	2.5986	37.089	4.6067	-0.003	4	0.9923	0.41	2.6737	37.34709
44	61.1	3.57	-2	-4.21	61.07552	5.8452	4	2.62048	129.6121	2.75704	0.1248	2.6322	22.155	6.1216	-0.005	3	1	0.402	2.9225	22.15549
45	92.3	4.64	-0.98	-4.17	92.288	5.0277	9	2.45575	132.5371	2.8233	0.156	2.6673	33.541	5.1864	-0.003	3	1	0.3967	2.7431	33.54124
46	49.8	2.57	-0.76	-4.13	49.7907	5.1616	4	2.63936	126.7091	2.88666	0.1872	2.6995	17.375	5.4793	-0.005	3	1	0.392	2.9681	17.37535
47	100.7	5.42	-0.79	-4.43	100.6903	5.3828	9	2.45584	133.8866	2.9536	0.2184	2.7352	35.733	5.5455	-0.003	3	1	0.3869	2.7444	35.7329
48	75.3	4.52	-0.67	-4.56	75.2918	6.0033	9	2.57114	131.8489	3.01953	0.2496	2.7699	26.092	6.2541	-0.004	3	1	0.382	2.8778	26.09176
49	139.5	5.52	-0.69	-4.2	139.4916	3.9572	8	2.26393	134.8153	3.08693	0.2808	2.8061	48.609	4.0468	-0.002	4	0.9503	0.3958	2.5385	51.02279
50	106.5	4.24	-0.97	-3.83	106.4881	3.9817	9	2.33782	132.2265	3.15305	0.312	2.8411	36.372	4.1032	-0.004	4	0.9927	0.3751	2.6445	36.63618
51	50.7	1.54	-1.05	-3.57	50.68715	3.0383	4	2.47016	123.0054	3.21455	0.3432	2.8714	16.533	3.244	-0.009	3	1	0.3685	2.8402	16.53319
52	64.1	1.71	-1.05	-3.51	64.08715	2.6682	5	2.35767	124.3437	3.27672	0.3744	2.9023	20.952	2.812	-0.007	4	1	0.3646	2.7208	20.95233
53	73.4	2.73	-1.05	-3.55	73.38715	3.72	4	2.42062	128.0972	3.34077	0.4056	2.9352	23.864	3.8974	-0.007	4	1	0.3605	2.767	23.86449
54	79.4	2.92	-1.05	-3.53	79.38715	3.6782	4	2.39412	128.7811	3.40516	0.4368	2.9684	25.597	3.843	-0.007	4	1	0.3565	2.7401	25.59728
55	219	9.43	-0.71	-3.5	218.9913	4.3061	8	2.18394	137.28	3.4738	0.468	3.0058	71.701	4.3755	-0.002	4	0.9229	0.3815	2.441	77.70935
56	168.9	11.33	-5.06	-3.5	168.8381	6.7106	9	2.40721	137.28	3.54244	0.4992	3.0432	54.316	6.8544	-0.005	3	1	0.3477	2.6903	54.31564
57	112.1	5.47	-5.2	-3.72	112.0364	4.8823	9	2.39403	134.2142	3.60955	0.5304	3.0792	35.213	5.0449	-0.008	3	1	0.3436	2.7196	35.21324
58	72.8	3.96	-5.63	-3.88	72.73109	5.4447	9	2.54792	130.7967	3.67495	0.5616	3.1134	22.181	5.7345	-0.014	3	1	0.3399	2.9027	22.18067
59	351.1	5.12	-5.73	-4.21	351.0299	1.4586	6	1.67816	136.5158	3.74321	0.5928	3.1504	110.24	1.4743	-0.003	6	0.7231	0.4543	1.8998	149.1099
60	634.6	10.3	-0.44	-4.4	634.5946	1.6231	6	1.58896	137.28	3.81185	0.624	3.1879	197.87	1.6329	-0.001	6	0.6702	0.4775	1.7564	284.6758
61	514	12.84	-4.62	-4.56	513.9435	2.4983	8	1.79745	137.28	3.88049	0.6552	3.2253	158.15	2.5173	-0.002	5	0.7611	0.4282	1.9905	206.3997
62	461.4	8.77	-6.33	-4.48	461.3225	1.9011	6	1.7137	137.28	3.94913	0.6864	3.2627	140.18	1.9175	-0.003	6	0.7359	0.4367	1.9194	188.744
63	99.9	2.94	-5.91	-4.7	99.82766	2.9451	5	2.25586	129.3899	4.01382	0.7176	3.2962	29.068	3.0685	-0.012	4	1	0.321	2.6344	29.06779
64	136.1	7.48	-5.44	-5.01	136.0334	5.4987	9	2.38634	136.9774	4.08231	0.7488	3.3335	39.583	5.6688	-0.009	3	1	0.3174	2.7205	39.58325
65	55.8	1.62	-6.31	-5.26	55.72277	2.9073	5	2.42721	123.607	4.14411	0.78	3.3641	15.332	3.1408	-0.024	3	1	0.3145	2.8578	15.33203
66	109.4	3.93	-6.3	-5.3	109.3229	3.5949	5	2.29618	131.7351	4.20998	0.8112	3.3988	30.927	3.7388	-0.012	4	1	0.3113	2.6708	30.92666
67	88.3	3.3	-6.2	-5.37	88.22411	3.7405	4	2.36935	129.9337	4.27495	0.8424	3.4326	24.457	3.931	-0.015	4	1	0.3083	2.7614	24.45682
68	71.1	2.07	-6.2	-5.43	71.02411	2.9145	5	2.35321	125.9923	4.33794	0.8736	3.4643	19.249	3.1041	-0.02	4	1	0.3054	2.7762	19.2493
69	280.5	13.53	-6.1	-5.66	280.4253	4.8248	9	2.17229	137.28	4.40658	0.9048	3.5018	78.822	4.9018	-0.005	9	0.9532	0.3196	2.4595	83.36546

70	81.1	2.72	-6.68	-5.93	81.01824	3.3573	5	2.35875	128.3116	4.47074	0.936	3.5347	21.656	3.5534	-0.019	4	1	0.2994	2.7733	21.65577
71	69.8	2.51	-6.68	-5.87	69.71824	3.6002	4	2.42523	127.3573	4.53442	0.9672	3.5672	18.273	3.8507	-0.022	3	1	0.2966	2.8524	18.27302
72	204.9	6.26	-6.68	-5.9	204.8182	3.0564	8	2.07548	136.6727	4.60275	0.9984	3.6044	55.548	3.1266	-0.007	5	0.9396	0.3161	2.4101	59.81409
73	143.3	4.97	-6.39	-6.06	143.2218	3.4701	8	2.21144	134.1117	4.66981	1.0296	3.6402	38.062	3.5871	-0.011	4	1	0.2907	2.5923	38.06154
74	335.5	12.13	-1.8	-6.22	335.478	3.6157	8	2.02501	137.28	4.73845	1.0608	3.6777	89.932	3.6675	-0.004	5	0.9033	0.3246	2.3079	101.4457
75	295.6	11.58	-2.06	-6.47	295.5748	3.9178	8	2.08217	137.28	4.80709	1.092	3.7151	78.267	3.9826	-0.004	4	0.9353	0.3089	2.385	84.89647
76	232.8	7.87	-1.75	-6.76	232.7786	3.3809	8	2.081	137.28	4.87573	1.1232	3.7525	60.733	3.4532	-0.005	4	0.9492	0.3007	2.4171	64.77034
77	197.9	5.67	0.57	-6.9	197.907	2.865	8	2.06109	135.8647	4.94366	1.1544	3.7893	50.924	2.9384	-0.006	5	0.9528	0.2966	2.4221	54.08203
78	378.8	8.07	-2.96	-6.92	378.7638	2.1306	8	1.79923	137.28	5.0123	1.1856	3.8267	97.669	2.1592	-0.004	5	0.8236	0.3469	2.0797	122.5252
79	77.3	4	-0.67	-6.84	77.2918	5.1752	9	2.51408	131.0186	5.07781	1.2168	3.861	18.703	5.5391	-0.018	3	1	0.2741	2.9473	18.70339
80	82.4	2.65	-0.38	-6.77	82.39535	3.2162	5	2.34004	128.1619	5.14189	1.248	3.8939	19.84	3.4303	-0.017	4	1	0.2717	2.793	19.83965

	CPT-7	In situ data										Basic output data								
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	39.5	1.05	-0.08	0.25	39.49902	2.6583	4	2.51136	119.5948	0.0598	0	0.0598	659.55	2.6623	-2E-04	8	0.6156	5.8636	1.9962	218.5547
2	9.8	0.57	-1.77	0.23	9.77834	5.8292	3	3.19593	111.7197	0.11566	0	0.1157	83.546	5.899	-0.013	4	0.8512	6.5818	2.6121	60.10537
3	14.6	0.76	-4.02	0.26	14.5508	5.2231	3	3.03185	114.7941	0.17305	0	0.1731	83.082	5.286	-0.02	4	0.8354	4.5384	2.5686	61.66894
4	8.2	0.5	-2.41	0.25	8.1705	6.1196	3	3.27034	110.3228	0.22822	0	0.2282	34.802	6.2954	-0.022	3	0.9355	4.1996	2.8218	31.52262
5	12.3	0.57	-3.85	0.2	12.25288	4.652	3	3.05834	112.2699	0.28435	0	0.2844	42.091	4.7625	-0.023	4	0.8887	3.2147	2.6921	36.36201
6	12.6	0.7	-4.56	0.11	12.54419	5.5803	3	3.09983	113.8304	0.34127	0	0.3413	35.758	5.7363	-0.027	3	0.9253	2.8491	2.7804	32.85819
7	10.9	0.4	-4.87	0.04	10.84039	3.6899	3	3.04015	109.3797	0.39596	0	0.396	26.378	3.8298	-0.034	4	0.9184	2.4663	2.7555	24.34447
8	9.6	0.2	-4.23	0.01	9.54822	2.0946	3	2.94928	103.9984	0.44795	0	0.448	20.315	2.1977	-0.033	4	0.8989	2.1656	2.698	18.62495
9	7.4	0.13	-4.03	-0.11	7.35067	1.7686	3	3.01021	100.2084	0.49806	0	0.4981	13.759	1.8971	-0.042	4	0.9368	2.0257	2.7887	13.11876
10	10.2	0.34	-3.91	-0.14	10.15214	3.3491	3	3.03887	108.0305	0.55207	0	0.5521	17.389	3.5416	-0.029	3	0.9639	1.8721	2.8544	16.98524
11	14	0.67	-3.95	-0.14	13.95165	4.8023	3	3.02284	113.7693	0.60896	0	0.609	21.911	5.0215	-0.021	3	0.9733	1.7121	2.8725	21.58999
12	17.1	0.82	-3.65	-0.14	17.05532	4.8079	3	2.95586	115.7374	0.66683	0	0.6668	24.577	5.0035	-0.016	3	0.9619	1.5591	2.8354	24.14865
13	19.9	0.83	-3.15	-0.16	19.86144	4.179	3	2.86605	116.1976	0.72493	0	0.7249	26.398	4.3373	-0.012	3	0.9406	1.4272	2.7723	25.81167
14	21.2	0.92	-3.5	-0.16	21.15716	4.3484	3	2.85627	117.105	0.78348	0	0.7835	26.004	4.5156	-0.012	3	0.9488	1.3299	2.7866	25.60691
15	20.6	0.94	-3.62	-0.24	20.55569	4.5729	3	2.88002	117.192	0.84207	0	0.8421	23.411	4.7683	-0.013	3	0.9694	1.2478	2.8336	23.24772
16	13.2	0.75	-3.52	-0.21	13.15692	5.7004	3	3.08976	114.4516	0.8993	0	0.8993	13.63	6.1187	-0.021	3	1	1.1766	3.0792	13.63016
17	8.5	0.11	-3.24	-0.24	8.46034	1.3002	4	2.89306	99.32895	0.94897	0	0.949	7.9153	1.4645	-0.031	4	1	1.115	2.9211	7.91533
18	10.8	0.26	-3.06	-0.29	10.76255	2.4158	3	2.93841	106.2101	1.00207	0	1.0021	9.7403	2.6638	-0.023	3	1	1.0559	2.9774	9.74031
19	17.3	0.53	-3.05	-0.31	17.26267	3.0702	4	2.83026	112.5736	1.05836	0	1.0584	15.311	3.2707	-0.014	3	0.993	0.9998	2.8688	15.31084
20	19.9	0.55	-2.96	-0.33	19.86377	2.7689	4	2.75458	113.1869	1.11495	0	1.115	16.816	2.9335	-0.011	4	0.9723	0.9504	2.8074	16.84023
21	24.2	0.74	-2.67	-0.35	24.16732	3.062	4	2.71441	115.8364	1.17287	0	1.1729	19.605	3.2182	-0.008	4	0.964	0.9055	2.7784	19.67809
22	21	1.03	-2.58	-0.33	20.96842	4.9122	3	2.89391	117.9096	1.23182	0	1.2318	16.022	5.2187	-0.009	3	1	0.859	2.9809	16.02226
23	19.8	0.76	-2.58	-0.35	19.76842	3.8445	3	2.84449	115.5415	1.28959	0	1.2896	14.329	4.1128	-0.01	3	1	0.8205	2.9526	14.32918
24	19.7	0.71	-2.48	-0.37	19.66964	3.6096	3	2.82889	115.0313	1.34711	0	1.3471	13.601	3.875	-0.01	3	1	0.7855	2.9544	13.60137
25	20	0.7	-2.46	-0.37	19.96989	3.5053	3	2.81577	114.9645	1.40459	0	1.4046	13.218	3.7705	-0.01	3	1	0.7533	2.9571	13.21757
26	20.5	0.73	-2.48	-0.38	20.46964	3.5663	3	2.81213	115.3318	1.46226	0	1.4623	12.999	3.8406	-0.009	3	1	0.7236	2.9677	12.99865
27	19.8	0.65	-2.39	-0.37	19.77075	3.2877	4	2.80182	114.3978	1.51946	0	1.5195	12.012	3.5614	-0.009	3	1	0.6964	2.9753	12.01172
28	21	0.6	-2.39	-0.39	20.97075	2.8611	4	2.74451	113.9558	1.57643	0	1.5764	12.303	3.0937	-0.009	3	1	0.6712	2.9309	12.30264
29	11.3	0.26	-2.39	-0.41	11.27075	2.3069	3	2.91069	106.3226	1.6296	0	1.6296	5.9163	2.6968	-0.018	3	1	0.6493	3.163	5.91628
30	16.7	0.47	-2.29	-0.31	16.67197	2.8191	4	2.82023	111.6095	1.6854	0	1.6854	8.892	3.1361	-0.011	3	1	0.6278	3.0498	8.89199
31	19.4	0.76	-2.29	-0.31	19.37197	3.9232	3	2.85687	115.4921	1.74315	0	1.7432	10.113	4.3111	-0.009	3	1	0.607	3.0849	10.11322
32	10.5	0.52	-2.29	-0.45	10.47197	4.9656	3	3.12956	111.2151	1.79875	0	1.7988	4.8218	5.9955	-0.019	3	1	0.5882	3.4289	4.82179
33	9.3	0.2	-2.19	-0.51	9.27319	2.1568	3	2.96674	103.9271	1.85072	0	1.8507	4.0106	2.6945	-0.021	3	1	0.5717	3.308	4.01059
34	8	0.22	-2.14	-0.54	7.97381	2.759	3	3.07913	104.2563	1.90285	0	1.9029	3.1905	3.6238	-0.025	3	1	0.5561	3.4588	3.19046
35	36.2	1.2	-2.1	-0.39	36.1743	3.3173	4	2.60364	120.3574	1.96302	0	1.963	17.428	3.5076	-0.004	3	1	0.539	2.843	17.42783
36	106.9	2.01	-1.91	-0.32	106.8766	1.8807	5	2.09311	126.7738	2.02641	0	2.0264	51.742	1.917	-0.001	5	0.8111	0.5904	2.271	58.49857
37	139.8	5.63	-2.47	-0.2	139.7698	4.0281	8	2.2696	134.9646	2.09389	0	2.0939	65.751	4.0893	-0.001	4	0.8804	0.5483	2.443	71.34515
38	35.2	0.73	-2.67	-0.27	35.16732	2.0758	5	2.48177	116.6517	2.15222	0	2.1522	15.34	2.2111	-0.006	4	1	0.4916	2.7687	15.34002
39	72.7	1.55	-2.58	-0.39	72.66842	2.133	5	2.25092	123.9314	2.21419	0	2.2142	31.819	2.2	-0.003	5	0.9034	0.5132	2.4881	34.17239
40	95.5	6.41	-2.48	-0.47	95.46964	6.7142	9	2.54645	134.9842	2.28168	0	2.2817	40.842	6.8786	-0.002	3	1	0.4637	2.7729	40.84186
41	53.2	3.02	-2.58	-0.56	53.16842	5.6801	4	2.65085	128.0498	2.3457	0.0312	2.3145	21.958	5.9422	-0.004	3	1	0.4572	2.9165	21.95838
42	106.3	6.48	-2.22	-0.73	106.2728	6.0975	9	2.48515	135.3252	2.41337	0.0624	2.351	44.177	6.2392	-0.002	3	0.9969	0.4512	2.7178	44.28793
43	595.7	8.02	-2.77	-0.74	595.6661	1.3464	6	1.52905	137.28	2.48201	0.0936	2.3884	248.36	1.352	-5E-04	6	0.5878	0.6197	1.6397	347.4107
44	498.2	5.97	-9.72	-0.98	498.081	1.1986	6	1.52385	137.28	2.55065	0.1248	2.4259	204.27	1.2048	-0.002	6	0.5931	0.6114	1.6489	286.3045
45	356.1	7.1	-11.83	-1.19	355.9552	1.9946	6	1.78871	137.28	2.61929	0.156	2.4633	143.44	2.0094	-0.003	6	0.7067	0.5504	1.9425	183.7873
46	397.5	6.66	-12.5	-1.38	397.347	1.6761	6	1.69932	137.28	2.68793	0.1872	2.5007	157.82	1.6875	-0.003	6	0.6726	0.5608	1.8482	209.1541
47	163.6	8.15	-12.36	-1.51	163.4487	4.9863	9	2.30634	137.28	2.75657	0.2184	2.5382	63.31	5.0718	-0.007	4	0.935	0.4413	2.5315	67.01775
48	84	2.32	-12.69	-1.57	83.84467	2.767	5	2.28703	127.2313	2.82018	0.2496	2.5706	31.52	2.8633	-0.014	4	0.9528	0.4292	2.5743	32.86846
49	110.7	3.32	-12.81	-1.68	110.5432	3.0034	5	2.23322	130.528	2.88544	0.2808	2.6046	41.333	3.0839	-0.011	4	0.9265	0.4341	2.5003	44.16327
50	108.5	5.16	-12.98	-1.8	108.3411	4.7627	9	2.3943	133.7055	2.9523	0.312	2.6403	39.916	4.8962	-0.012	4	0.9928	0.4034	2.6701	40.17773
51	145.4	7.21	-13.07	-1.82	145.24	4.9642	9	2.33364	136.8681	3.02073	0.3432	2.6775	53.116	5.0696	-0.009	4	0.9629	0.409	2.588	54.97652
52	182.6	11.27	-13.07	-1.81	182.44	6.1774	9	2.35895	137.28	3.08937	0.3744	2.715	66.06	6.2838	-0.007	9	0.9687	0.4014	2.5988	68.03612
53	97.7	5.06	-13.07	-1.78	97.54002	5.1876	9	2.45156	133.3061	3.15602	0.4056	2.7504	34.316	5.3611	-0.014	3	1	0.3847	2.7463	34.31616
54	118.5	5.29	-13.17	-1.8	118.3388	4.4702	9	2.34915	134.1028	3.22308	0.4368	2.7863	41.315	4.5954	-0.012	4	0.9869	0.3846	2.6381	41.84114
55	72.9	2.78	-13.26	-1.64	72.7377	3.822	4	2.43191	128.2083	3.28718	0.468	2.8192	24.635	4.0029	-0.02	4	1	0.3753	2.7642	24.63501
56	139.3	6.57	-13.26	-1.32	139.1377	4.7219	9	2.32661	136.0833	3.35522	0.4992	2.856	47.543	4.8386	-0.011	4	0.9795	0.3781	2.6098	48.51944
57	407	7.89	-3.24	-1.4	406.9603	1.9388	6	1.74809	137.28	3.42386	0.5304	2.8935	139.46	1.9552	-0.002	6	0.7233	0.483	1.9326	184.2203
58	315.3	8.36	-1.1	-1.65	315.2865	2.6516	8	1.92166	137.28	3.4925	0.5616	2.9309	106.38	2.6813	-0.002	5	0.8018	0.4418	2.1341	130.1864
59	475.3	11.46	-4.5	-1.65	475.2449	2.4114	8	1.79882	137.28	3.56114	0.5928	2.9683	158.9	2.4296	-0.002	5	0.7439	0.4643	1.9773	206.9599
60	205.9	6.9	-4.12	-1.63	205.8496	3.352	8	2.10732	137.28	3.62978	0.624	3.0058	67.277	3.4121	-0.005	5	0.8951	0.3928	2.3697	75.06734
61	86.3	3.37	-9.59	-1.89	86.18262	3.9103	4	2.39059	130.0302	3.6948	0.6552	3.0396	27.138	4.0855	-0.016	4	1	0.3481	2.7387	27.13775
62	141.3	7.27	-9.64	-1.9	141.182	5.1494	9	2.35373	136.8597	3.76323	0.6864	3.0768	44.663	5.2904	-0.01	4	1	0.3439	2.6627	44.6625
63	89.8	3.56	-9.61	-2.03	89.68237	3.9696	4	2.38433	130.5286	3.82849	0.7176	3.1109	27.598	4.1466	-0.016	4	1	0.3401	2.7376	27.59784
64	82.1	1.73	-9.54	-1.96	81.98323	2.1102	5	2.20995	125.0294	3.89101	0.7488	3.1422	24.853	2.2153	-0.018	4	0.9871	0.3415	2.5941	25.205
65	76.1	3.88	-9.25	-1.95	75.98678	5.1062	9	2.51433	130.7542	3.95638	0.78	3.1764	22.677	5.3866	-0.02	3	1	0.3331	2.8772	22.67686
66	56.6	2.38	-9.16	-1.95	56.48788	4.2133	4	2.53756	126.4549	4.01961	0.8112	3.2084	16.353	4.5361	-0.028	3	1	0.3298	2.9348	16.35335
67	60	1.65	-9.16	-2.13	59.88788	2.7552	5	2.38848	123.9171	4.08157	0.8424	3.2392	17.229	2.9567	-0.027	4	1	0.3267	2.8015	17.22859
68	56.6	1.22	-9.06	-2.15	56.48911	2.1597	5	2.3351	121.5654	4.14235	0.8736	3.2688	16.014	2.3306	-0.029	4	1	0.3237	2.7663	16.0143
69	293.2	9	-8.97	-2.27	293.0902	3.0707	8	1.99261	137.28	4.21099	0.9048	3.3062	87.375	3.1155	-0.005	5	0.8645	0.3735	2.2522	101.9561

70	260.9	10.39	-8.29	-2.25	260.7985	3.9839	8	2.11568	137.28	4.27963	0.936	3.3436	76.719	4.0504	-0.006	4	0.921	0.3466	2.3935	84.02049
71	151	3.29	-7.92	-2.38	150.9031	2.1802	5	2.03969	131.2206	4.34524	0.9672	3.378	43.385	2.2449	-0.01	5	0.9176	0.3447	2.3826	47.73984

	CPT-8	In situ data										Basic output data								
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ß (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	20.1	0.39	0.3	0.26	20.10367	1.9399	4	2.65989	110.7008	0.05535	0	0.0554	362.21	1.9453	0.0011	5	0.631	6.4349	2.0475	121.9248
2	7.7	0.04	1.66	0.33	7.72032	0.5181	4	2.76931	91.70382	0.1012	0	0.1012	75.286	0.525	0.0157	5	0.6703	4.8219	2.1463	34.72104
3	4.3	0.03	0.17	0.25	4.30208	0.6973	1	3.05211	88.17263	0.14529	0	0.1453	28.611	0.7217	0.0029	5	0.7904	4.8037	2.4449	18.87125
4	4.1	0.03	0.01	0.12	4.10012	0.7317	1	3.07898	88.05536	0.18932	0	0.1893	20.658	0.7671	0.0002	5	0.8267	4.1479	2.5376	15.33091
5	6.3	0.27	-0.37	0.1	6.29547	4.2888	3	3.27061	105.1783	0.24191	0	0.2419	25.025	4.4602	-0.004	3	0.9358	3.9786	2.8211	22.76228
6	23.1	0.32	-0.15	0.07	23.09816	1.3854	5	2.5288	109.592	0.2967	0	0.2967	76.85	1.4034	-5E-04	5	0.7074	2.4583	2.2176	52.9736
7	15.2	0.23	-0.92	0.05	15.18874	1.5143	4	2.70381	106.1532	0.34978	0	0.3498	42.424	1.55	-0.004	5	0.7818	2.3759	2.4044	33.32007
8	32	0.44	-0.36	-0.14	31.99559	1.3752	5	2.40895	112.7168	0.40614	0	0.4061	77.78	1.3929	-8E-04	5	0.7001	1.955	2.1825	58.36522
9	23.9	0.46	-1.4	-0.22	23.88286	1.9261	4	2.5968	112.3288	0.4623	0	0.4623	50.661	1.9641	-0.004	5	0.7805	1.9084	2.3856	42.24031
10	26.7	0.64	-1.62	-0.17	26.68017	2.3988	4	2.61496	115.0154	0.51981	0	0.5198	50.327	2.4465	-0.004	5	0.8025	1.7689	2.4358	43.73456
11	25.8	0.58	-1.82	-0.11	25.77772	2.25	4	2.60995	114.2111	0.57691	0	0.5769	43.682	2.3015	-0.005	5	0.813	1.6374	2.4563	38.99833
12	23.7	0.58	-1.96	-0.05	23.67601	2.4497	4	2.66169	114.0037	0.63392	0	0.6339	36.349	2.5171	-0.006	4	0.8443	1.5412	2.5312	33.56202
13	27.9	0.55	-4.36	0.07	27.84663	1.9751	4	2.54922	114.0108	0.69092	0	0.6909	39.304	2.0254	-0.012	5	0.8142	1.4148	2.445	36.31079
14	24.3	0.47	-4.05	0.11	24.25043	1.9381	4	2.59297	112.5234	0.74718	0	0.7472	31.456	1.9997	-0.012	4	0.8418	1.3403	2.5096	29.77138
15	22.5	0.55	-4.06	0.14	22.45031	2.4499	4	2.68013	113.4855	0.80393	0	0.8039	26.926	2.5408	-0.014	4	0.8858	1.2755	2.6186	26.09444
16	24.8	0.48	-2.29	0.16	24.77197	1.9377	4	2.5854	112.7294	0.86029	0	0.8603	27.795	2.0074	-0.007	4	0.8602	1.1949	2.5445	27.0022
17	21.6	0.6	-2.53	0.2	21.56903	2.7818	4	2.72738	114.0244	0.9173	0	0.9173	22.514	2.9053	-0.009	4	0.9254	1.1413	2.7087	22.27488
18	20.4	0.64	-3.39	0.24	20.35851	3.1437	4	2.77979	114.3558	0.97448	0	0.9745	19.892	3.3017	-0.013	4	0.9564	1.0819	2.7829	19.82028
19	20.4	0.49	-3.72	0.3	20.35447	2.4073	4	2.70979	112.4012	1.03068	0	1.0307	18.749	2.5357	-0.014	4	0.9399	1.025	2.7327	18.71897
20	14.9	0.23	-3.23	0.37	14.86046	1.5477	4	2.71684	106.0999	1.08373	0	1.0837	12.712	1.6695	-0.017	4	0.9568	0.9774	2.7705	12.72547
21	15.9	0.25	-2.38	0.47	15.87087	1.5752	4	2.69647	106.8704	1.13717	0	1.1372	12.957	1.6968	-0.012	4	0.9577	0.9333	2.7664	12.99602
22	15.5	0.34	-1.96	0.55	15.47601	2.197	4	2.78419	109.0588	1.1917	0	1.1917	11.987	2.3802	-0.01	4	1	0.8879	2.8753	11.98654
23	15	0.37	-1.22	0.64	14.98507	2.4691	4	2.82444	109.5989	1.2465	0	1.2465	11.022	2.6932	-0.006	3	1	0.8489	2.9355	11.02176
24	20.7	0.46	-0.66	0.7	20.69192	2.2231	4	2.68369	111.979	1.30248	0	1.3025	14.887	2.3724	-0.002	4	0.9765	0.8164	2.795	14.95948
25	16.7	0.26	-0.46	0.74	16.69437	1.5574	4	2.6752	107.2808	1.35613	0	1.3561	11.31	1.6951	-0.002	4	0.9872	0.7827	2.8166	11.34629
26	10	0.11	0.01	0.76	10.00012	1.1	4	2.79531	99.73677	1.40599	0	1.406	6.1125	1.2799	8E-05	3	1	0.7526	2.994	6.1125
27	13.3	0.24	0.9	0.74	13.31102	1.803	4	2.79231	106.1427	1.45906	0	1.4591	8.123	2.025	0.0055	3	1	0.7252	2.9808	8.12298
28	21.9	0.71	1.57	0.78	21.91922	3.2392	4	2.76276	115.2954	1.51671	0	1.5167	13.452	3.48	0.0055	3	1	0.6976	2.9299	13.45179
29	14.3	0.36	0.74	0.78	14.30906	2.5159	4	2.84556	109.2859	1.57136	0	1.5714	8.1062	2.8263	0.0042	3	1	0.6734	3.0582	8.10619
30	13.1	0.33	0.87	0.8	13.11065	2.517	3	2.87697	108.4359	1.62557	0	1.6256	7.0653	2.8733	0.0055	3	1	0.6509	3.1122	7.06525
31	18.8	0.51	1.93	0.72	18.82362	2.7094	4	2.7676	112.5032	1.68183	0	1.6818	10.192	2.9752	0.0081	3	1	0.6291	2.988	10.19238
32	35.8	0.65	1.59	0.68	35.81946	1.8147	5	2.43968	115.8473	1.73975	0	1.7398	19.589	1.9073	0.0034	4	0.9358	0.6279	2.6334	20.22427
33	45.7	1.2	3.26	0.61	45.7399	2.6235	5	2.45975	120.9296	1.80021	0	1.8002	24.408	2.731	0.0053	4	0.9453	0.6051	2.651	25.12754
34	49.8	1.76	-1.03	0.57	49.78739	3.535	4	2.52149	123.9388	1.86218	0	1.8622	25.736	3.6724	-0.002	4	0.9747	0.5764	2.7206	26.10711
35	43.8	0.97	1.22	0.46	43.81493	2.2139	5	2.42548	119.2678	1.92182	0.0312	1.8906	22.158	2.3154	0.0014	4	0.9452	0.5778	2.6393	22.87439
36	52.4	1.34	1.83	0.39	52.4224	2.5562	5	2.40826	122.0696	1.98285	0.0624	1.9205	26.264	2.6567	0.0014	4	0.9378	0.5718	2.6159	27.25712
37	52.8	1.44	2.76	0.39	52.83378	2.7255	5	2.4247	122.6153	2.04416	0.0936	1.9506	26.038	2.8352	0.0021	4	0.9477	0.5601	2.6384	26.88489
38	62.3	1.87	3.38	0.39	62.34137	2.9996	5	2.40191	124.9308	2.10662	0.1248	1.9818	30.394	3.1045	0.002	4	0.9385	0.5549	2.6103	31.58903
39	116.3	4.31	3.95	0.4	116.3484	3.7044	5	2.2893	132.5623	2.17291	0.156	2.0169	56.609	3.7749	0.0011	4	0.8844	0.5653	2.4632	60.99416
40	101.6	3.07	7.24	0.52	101.6886	3.019	5	2.25865	129.7515	2.23778	0.1872	2.0506	48.499	3.087	0.0034	4	0.8796	0.5588	2.4462	52.52095
41	122.5	5.9	6.69	0.7	122.5819	4.8131	9	2.36566	134.9873	2.30528	0.2184	2.0869	57.635	4.9054	0.0022	4	0.9198	0.5354	2.548	60.86121
42	163.9	3.92	11.93	0.97	164.046	2.3896	5	2.04742	132.7063	2.37163	0.2496	2.122	76.189	2.4246	0.0038	5	0.794	0.5755	2.2143	87.93096
43	287.6	12.63	-1.97	1.85	287.5759	4.3919	8	2.13127	137.28	2.44027	0.2808	2.1595	132.04	4.4295	-0.001	9	0.8171	0.5583	2.2703	150.4455
44	182.7	10.82	-2.39	2.52	182.6708	5.9232	9	2.34313	137.28	2.50891	0.312	2.1969	82.007	6.0057	-0.003	9	0.9129	0.5133	2.5161	87.39652
45	310	10.58	6.6	2.7	310.0808	3.412	8	2.01969	137.28	2.57755	0.3432	2.2344	137.63	3.4406	0.0004	8	0.7792	0.5585	2.1616	162.3182
46	257	10.89	37.4	2.81	257.4578	4.2298	8	2.14093	137.28	2.64619	0.3744	2.2718	112.16	4.2738	0.0091	9	0.8336	0.5289	2.2997	127.371
47	431.4	3.44	-4.94	3.01	431.3395	0.7975	6	1.41329	134.1084	2.71324	0.4056	2.3076	185.74	0.8026	-0.002	6	0.5447	0.654	1.5364	264.9061
48	170.4	6.84	-7.65	3.25	170.3064	4.0163	8	2.21862	136.871	2.78168	0.4368	2.3449	71.443	4.083	-0.006	4	0.8819	0.4957	2.4153	78.48558
49	136.6	4.76	-6.55	3.21	136.5198	3.4867	8	2.22573	133.6789	2.84852	0.468	2.3805	56.152	3.561	-0.007	4	0.8944	0.4842	2.4439	61.17038
50	162	10.1	-6.37	3.35	161.922	6.2376	9	2.39	137.28	2.91716	0.4992	2.418	65.76	6.352	-0.006	9	0.9558	0.4539	2.6018	68.20428
51	189.5	10.26	-6.55	3.49	189.4198	5.4165	9	2.30182	137.28	2.9858	0.5304	2.4554	75.928	5.5033	-0.005	9	0.9214	0.4604	2.5061	81.12327
52	63.6	1.73	-2.35	3.57	63.57124	2.7214	5	2.36616	124.4091	3.048	0.5616	2.4864	24.342	2.8584	-0.012	4	0.9848	0.4311	2.6698	24.65916
53	98.7	3.81	-2.24	3.29	98.67258	3.8613	4	2.34846	131.2582	3.11363	0.5928	2.5208	37.908	3.9871	-0.008	4	0.9662	0.4323	2.616	39.0381
54	285.3	7.43	-2.78	3.23	285.266	2.6046	8	1.93797	137.28	3.18227	0.624	2.5583	110.26	2.634	-0.003	5	0.7788	0.5028	2.12	134.0441
55	71.1	1.86	-2	3.37	71.07552	2.6169	5	2.31974	125.2114	3.24488	0.6552	2.5897	26.193	2.7421	-0.012	4	0.9749	0.4179	2.6304	26.78853
56	60	1.49	-1.9	3.5	59.97674	2.4843	5	2.35699	123.1744	3.30646	0.6864	2.6201	21.629	2.6292	-0.015	4	0.9995	0.404	2.6919	21.63962
57	266.1	11.99	-1.51	3.69	266.0815	4.5061	8	2.15755	137.28	3.3751	0.7176	2.6575	98.855	4.564	-0.003	9	0.8742	0.4471	2.3583	110.9977
58	135.4	7.26	-1.15	4.15	135.3859	5.3625	9	2.37859	136.7473	3.44348	0.7488	2.6947	48.964	5.5024	-0.006	4	0.9849	0.3983	2.644	49.66261
59	217	9.82	-0.98	4.38	216.988	4.5256	9	2.20439	137.28	3.51212	0.78	2.7321	78.136	4.6001	-0.004	9	0.9063	0.4233	2.4315	85.39576
60	142.9	6.98	-1.96	4.52	142.876	4.8854	9	2.33202	136.5909	3.58041	0.8112	2.7692	50.302	5.0109	-0.007	4	0.9727	0.3923	2.6025	51.63978
61	688.6	7.02	-0.95	4.5	688.5884	1.0195	6	1.39284	137.28	3.64905	0.8424	2.8067	244.04	1.0249	-0.001	6	0.5633	0.5772	1.5232	373.647
62	679.1	3.82	-2.82	4.56	679.0655	0.5625	7	1.17484	135.982	3.71704	0.8736	2.8434	237.51	0.5656	-0.002	7	0.4827	0.6205	1.3064	396.0496
63	300.6	8.67	-3.91	4.82	300.5521	2.8847	8	1.96373	137.28	3.78568	0.9048	2.8809	103.01	2.9215	-0.004	5	0.8156	0.4418	2.1765	123.9129
64	537.7	7.5	-2.57	4.68	537.6685	1.3949	6	1.56388	137.28	3.85432	0.936	2.9183	182.92	1.405	-0.002	6	0.6456	0.5195	1.7252	262.0727
65	582.1	10.06	-7.33	4.72	582.0103	1.7285	6	1.63006	137.28	3.92296	0.9672	2.9558	195.58	1.7402	-0.003	6	0.6714	0.5017	1.7884	274.1212
66	581.4	17.46	-6.81	4.93	581.3167	3.0035	8	1.84798	137.28	3.9916	0.9984	2.9932	192.88	3.0243	-0.003	8	0.7583	0.4545	2.0122	248.0009
67	466.7	12.69	-2.39	5.08	466.6708	2.7193	8	1.84897	137.28	4.06024	1.0296	3.0306	152.64	2.7431	-0.003	5	0.769	0.4452	2.0357	194.6424
68	166	7.27	-5.13	5.13	165.9372	4.3812	9	2.25612	137.2537	4.12887	1.0608	3.0681	52.739	4.493	-0.009	4	0.9674	0.357	2.5513	54.60001
69	64.3	2.86	-5.06	5.24	64.23807	4.4522	4	2.51727	128.1128	4.19293	1.092	3.1009	19.364	4.7631	-0.024	3	1	0.3412	2.8927	19.36361

70	58.7	1.33	-5.01	5.42	58.63868	2.2681	5	2.33731	122.2881	4.25407	1.1232	3.1309	17.37	2.4455	-0.027	4	1	0.338	2.7497	17.37044
71	60.2	1.55	-5.11	5.56	60.13745	2.5774	5	2.36713	123.4697	4.31581	1.1544	3.1614	17.657	2.7767	-0.027	4	1	0.3347	2.7766	17.65722
72	78	2.47	-5.06	5.65	77.93807	3.1692	5	2.35172	127.5116	4.37956	1.1856	3.194	23.03	3.3579	-0.021	4	1	0.3313	2.737	23.03049
73	104.1	4.71	-4.97	5.71	104.0392	4.5271	9	2.38772	132.939	4.44603	1.2168	3.2292	30.841	4.7292	-0.016	3	1	0.3277	2.7412	30.84112
74	85.5	3.86	-4.6	5.74	85.4437	4.5176	4	2.44086	131.0025	4.51153	1.248	3.2635	24.799	4.7694	-0.02	3	1	0.3242	2.8129	24.79894
75	126.9	6.46	-4.5	5.76	126.8449	5.0928	9	2.37671	135.7341	4.5794	1.2792	3.3002	37.048	5.2836	-0.013	3	1	0.3206	2.7184	37.04791
76	134.4	7.04	-4.41	5.92	134.346	5.2402	9	2.37231	136.5034	4.64765	1.3104	3.3373	38.864	5.428	-0.013	3	1	0.3171	2.7123	38.86383
77	204.7	7.56	-4.27	5.99	204.6477	3.6942	8	2.14381	137.28	4.71629	1.3416	3.3747	59.244	3.7813	-0.008	4	0.9451	0.3342	2.4534	63.14234
78	183.4	7.93	-4.39	6.05	183.3463	4.3252	8	2.22727	137.28	4.78493	1.3728	3.4121	52.331	4.4411	-0.009	4	0.9849	0.3156	2.5549	53.26567
79	64.8	1.83	-3.91	6.03	64.75214	2.8262	5	2.37199	124.8651	4.84736	1.404	3.4434	17.397	3.0549	-0.028	4	1	0.3073	2.8067	17.39717
80	112.1	3.85	-3.77	5.84	112.0539	3.4359	5	2.2742	131.6448	4.91319	1.4352	3.478	30.805	3.5934	-0.016	4	1	0.3042	2.6605	30.80537

	CPT-9	In situ data										Basic output data									
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	14.2	0.72	0.67	0.24	14.2082	5.0675	3	3.03146	114.3404	0.05717	0	0.0572	247.52	5.088	0.0034	9	0.7581	9.1365	2.3715	122.19
2	6.6	0.21	12.36	0.37	6.75129	3.1105	3	3.16809	103.5099	0.10893	0	0.1089	60.981	3.1615	0.134	4	0.8219	6.4788	2.5338	40.67099
3	3.4	0.08	5.56	0.49	3.46805	2.3068	3	3.35181	94.82374	0.15634	0	0.1563	21.183	2.4157	0.1209	4	0.9006	5.5968	2.7436	17.51706
4	4.3	0.18	4.97	0.78	4.36083	4.1277	3	3.3942	101.316	0.207	0	0.207	20.067	4.3333	0.0862	3	0.9558	4.7562	2.878	18.67167
5	3.9	0.2	4.51	1.07	3.9552	5.0566	3	3.47792	101.8488	0.25792	0	0.2579	14.335	5.4094	0.0878	3	1	4.1025	3.0278	14.33503
6	6.5	0.2	5.25	1.07	6.56426	3.0468	3	3.17352	103.0844	0.30946	0	0.3095	20.212	3.1976	0.0604	4	0.9299	3.137	2.797	18.54363
7	15.6	0.5	5.18	1.09	15.6634	3.1922	3	2.87417	111.9101	0.36542	0	0.3654	41.865	3.2684	0.0244	4	0.8517	2.4733	2.5848	35.75846
8	18	0.54	5.17	1.16	18.06328	2.9895	4	2.80758	112.8209	0.42183	0	0.4218	41.822	3.061	0.0211	4	0.8455	2.1761	2.5611	36.28104
9	9.2	0.28	5.36	1.18	9.26561	3.0219	3	3.04631	106.387	0.47502	0	0.475	18.506	3.1852	0.0439	4	0.9445	2.1306	2.8119	17.70038
10	11.2	0.38	5.64	1.22	11.26903	3.3721	3	3.00361	109.0989	0.52957	0	0.5296	20.28	3.5384	0.0378	4	0.9449	1.9233	2.8069	19.52127
11	17	0.65	6.22	1.25	17.07613	3.8065	3	2.89122	114.0404	0.58659	0	0.5866	28.111	3.9419	0.0272	4	0.9192	1.7199	2.7324	26.80257
12	17.6	0.66	6.31	1.31	17.67723	3.7336	3	2.87424	114.2365	0.64371	0	0.6437	26.462	3.8747	0.0267	4	0.926	1.5844	2.7436	25.50627
13	18.2	0.55	6.41	1.38	18.27846	3.009	4	2.80519	112.984	0.7002	0	0.7002	25.105	3.1289	0.0263	4	0.9123	1.4574	2.7007	24.212
14	19.4	0.71	6.41	1.47	19.47846	3.6451	3	2.83485	115.0075	0.7577	0	0.7577	24.707	3.7926	0.0247	4	0.9356	1.3667	2.755	24.18118
15	16.8	0.53	6.51	1.51	16.87968	3.1399	3	2.84391	112.5188	0.81396	0	0.814	19.738	3.299	0.0292	4	0.9509	1.2833	2.7885	19.48521
16	16.4	0.69	6.41	1.59	16.47846	4.1873	3	2.9292	114.3905	0.87116	0	0.8712	17.916	4.421	0.0296	3	0.995	1.2134	2.8976	17.89826
17	14.6	0.59	6.41	1.67	14.67846	4.0195	3	2.95745	112.9628	0.92764	0	0.9276	14.823	4.2907	0.0336	3	1	1.1406	2.9525	14.82344
18	12.5	0.26	6.41	1.75	12.57846	2.067	4	2.84479	106.5903	0.98094	0	0.9809	11.823	2.2419	0.0398	4	0.9884	1.0777	2.8663	11.81255
19	11.3	0.28	6.51	1.77	11.37968	2.4605	3	2.92253	106.8883	1.03438	0	1.0344	10.001	2.7065	0.0453	3	1	1.0229	2.9717	10.00146
20	9.4	0.23	6.51	1.82	9.47968	2.4262	3	2.98577	105.0034	1.08688	0	1.0869	7.7219	2.7404	0.0559	3	1	0.9735	3.0686	7.72191
21	9.3	0.19	6.62	1.9	9.38103	2.0254	3	2.94824	103.58	1.13867	0	1.1387	7.2386	2.3052	0.0578	3	1	0.9293	3.0527	7.23857
22	8.7	0.2	6.7	1.9	8.78201	2.2774	3	2.99926	103.7943	1.19057	0	1.1906	6.3763	2.6346	0.0636	3	1	0.8887	3.1299	6.37631
23	17.3	0.44	6.79	1.85	17.38311	2.5312	4	2.77804	111.2288	1.24618	0	1.2462	12.949	2.7267	0.0303	3	1	0.8491	2.881	12.94908
24	19.6	0.5	6.98	1.8	19.68544	2.54	4	2.73528	112.4675	1.30242	0	1.3024	14.115	2.7199	0.0273	4	0.9973	0.8129	2.8496	14.12238
25	21.5	0.33	7.03	1.81	21.58605	1.5288	4	2.57669	109.652	1.35724	0	1.3572	14.904	1.6313	0.025	4	0.9435	0.7906	2.7017	15.11535
26	12.5	0.24	6.98	1.81	12.58544	1.907	4	2.82585	106.006	1.41025	0	1.4103	7.9243	2.1476	0.045	3	1	0.7503	3.0031	7.92429
27	12.9	0.21	7.15	1.86	12.98752	1.6169	4	2.77675	105.1057	1.4628	0	1.4628	7.8785	1.8222	0.0447	3	1	0.7233	2.9691	7.87854
28	12.9	0.49	7.08	1.93	12.98666	3.7731	3	2.98286	111.3052	1.51845	0	1.5185	7.5526	4.2727	0.0445	3	1	0.6968	3.1848	7.55257
29	6.6	0.12	7.08	2.01	6.68666	1.7946	3	3.04924	99.39178	1.56815	0	1.5682	3.2641	2.3444	0.0996	3	1	0.6748	3.3567	3.26405
30	10.1	0.17	7.14	2.05	10.18739	1.6687	4	2.87454	102.9672	1.61963	0	1.6196	5.29	1.9842	0.06	3	1	0.6533	3.1379	5.28995
31	7.6	0.13	7.27	2.02	7.68898	1.6907	3	2.98363	100.3181	1.66979	0	1.6698	3.6048	2.1598	0.087	3	1	0.6337	3.3019	3.60476
32	8.5	0.14	7.27	2.05	8.58898	1.63	4	2.9339	101.1303	1.72035	0	1.7204	3.9926	2.0383	0.0762	3	1	0.6151	3.2509	3.99257
33	14.3	0.49	7.44	2.01	14.39107	3.4049	3	2.92041	111.5556	1.77613	0	1.7761	7.1025	3.8843	0.0425	3	1	0.5957	3.1829	7.10247
34	136.8	2.38	4	1.95	136.849	1.7391	6	1.99437	128.6131	1.84044	0.0312	1.8092	74.622	1.7629	0.0019	5	0.7451	0.6705	2.1247	85.55657
35	178	2.2	-1.4	1.92	177.9829	1.2361	6	1.80814	128.6786	1.90478	0.0624	1.8424	95.571	1.2495	-9E-04	6	0.6724	0.6887	1.9298	114.6118
36	139.4	0.8	-3.85	2.12	139.3529	0.5741	6	1.66794	120.68	1.96512	0.0936	1.8715	73.41	0.5823	-0.003	6	0.6261	0.6998	1.8043	90.85893
37	76.5	2.87	-3.54	2.05	76.45667	3.7538	4	2.4116	128.563	2.0294	0.1248	1.9046	39.078	3.8561	-0.005	4	0.928	0.5796	2.5924	40.76591
38	33.9	0.69	-3.35	2.11	33.859	2.0379	5	2.48979	116.1469	2.08747	0.156	1.9315	16.449	2.1718	-0.013	4	0.9837	0.5532	2.7358	16.61162
39	40.9	1.09	-3.26	2.17	40.8601	2.6676	4	2.50126	119.951	2.14745	0.1872	1.9603	19.749	2.8156	-0.011	4	0.9861	0.5444	2.7385	19.91889
40	47.5	1.19	-3.35	2.15	47.459	2.5074	5	2.43471	120.9584	2.20793	0.2184	1.9895	22.745	2.6298	-0.01	4	0.9601	0.5454	2.6662	23.32529
41	49.2	1.31	-3.35	2.17	49.159	2.6648	5	2.44106	121.7472	2.2688	0.2496	2.0192	23.222	2.7938	-0.01	4	0.9653	0.5359	2.6763	23.74865
42	185.1	7	-3.25	2.19	185.0602	3.7826	8	2.17672	137.2428	2.33742	0.2808	2.0566	88.846	3.8309	-0.003	5	0.8345	0.5743	2.3288	99.1746
43	134.1	5.46	-2.87	2.17	134.0649	4.0727	8	2.28423	134.6386	2.40474	0.312	2.0927	62.913	4.147	-0.004	4	0.8874	0.546	2.4617	67.9344
44	68.2	1.89	-2.97	2.05	68.16365	2.7727	5	2.35034	125.2264	2.46736	0.3432	2.1242	30.928	2.8769	-0.008	4	0.934	0.5216	2.5805	32.38347
45	87.3	3.93	-2.87	2.01	87.26487	4.5035	9	2.43396	131.1854	2.53295	0.3744	2.1586	39.254	4.6382	-0.007	4	0.9628	0.5034	2.6524	40.30956
46	152.3	7.19	-3.01	2.02	152.2632	4.7221	9	2.30411	136.963	2.60143	0.4056	2.1958	68.157	4.8042	-0.004	4	0.9025	0.5174	2.4888	73.18344
47	262.2	4.39	-2.77	2.24	262.1661	1.6745	6	1.80069	134.6783	2.66877	0.4368	2.232	116.26	1.6917	-0.002	6	0.6989	0.5935	1.9508	145.5622
48	216.7	6.85	-3.83	2.36	216.6531	3.1617	8	2.07386	137.28	2.73741	0.468	2.2694	94.261	3.2022	-0.003	5	0.812	0.5382	2.2431	108.8029
49	244.5	11.88	-4.41	2.38	244.446	4.86	9	2.20437	137.28	2.80605	0.4992	2.3069	104.75	4.9164	-0.003	9	0.8633	0.5102	2.3716	116.5224
50	719.1	4.23	-4.45	2.59	719.0455	0.5883	7	1.1773	136.8675	2.87448	0.5304	2.3441	305.52	0.5906	-0.001	7	0.4448	0.702	1.2696	475.1605
51	216.4	9.84	-4.71	2.86	216.3424	4.5484	9	2.20692	137.28	2.94312	0.5616	2.3815	89.606	4.6111	-0.004	9	0.8745	0.4919	2.3916	99.20663
52	122.2	4.53	-4.34	2.43	122.1469	3.7087	8	2.27657	133.0452	3.00965	0.5928	2.4169	49.295	3.8023	-0.008	4	0.9211	0.4673	2.5097	52.61518
53	207	8.59	-4.5	1.92	206.9449	4.1509	8	2.18358	137.28	3.07829	0.624	2.4543	83.066	4.2135	-0.005	9	0.8729	0.4798	2.3802	92.44103
54	490.9	10.29	-5.26	1.33	490.8356	2.0964	8	1.73837	137.28	3.14693	0.6552	2.4917	195.72	2.11	-0.002	6	0.6815	0.5578	1.873	257.104
55	140.2	4.25	-5.45	1.2	140.1333	3.0328	5	2.17103	132.9134	3.21338	0.6864	2.527	54.183	3.104	-0.008	5	0.887	0.462	2.408	59.78689
56	75.2	3.27	-5.55	1.46	75.13207	4.3523	4	2.46476	129.4751	3.27812	0.7176	2.5605	28.062	4.5509	-0.016	3	1	0.4132	2.7596	28.06225
57	560.7	6.68	3.83	1.28	560.7469	1.1913	6	1.49526	137.28	3.34676	0.7488	2.598	214.55	1.1984	-9E-04	6	0.5928	0.5872	1.6267	309.3021
58	168	7.69	0.35	1.32	168.0043	4.5773	9	2.26883	137.28	3.4154	0.78	2.6354	62.453	4.6723	-0.005	4	0.9301	0.4279	2.5064	66.5664
59	70.4	1.93	0.96	1.67	70.41175	2.741	5	2.33686	125.4588	3.47813	0.8112	2.6669	25.098	2.8835	-0.011	4	0.9918	0.3998	2.6636	25.2877
60	81.1	2.48	0.77	1.7	81.10942	3.0576	5	2.32852	127.6384	3.54195	0.8424	2.6996	28.734	3.1972	-0.01	4	0.9856	0.3973	2.6454	29.12299
61	89.4	2.83	0.77	1.83	89.40942	3.1652	5	2.31108	128.842	3.60637	0.8736	2.7328	31.398	3.2983	-0.01	4	0.9788	0.3951	2.623	32.0366
62	379.8	9.82	0.45	2.05	379.8055	2.5855	8	1.87147	137.28	3.67501	0.9048	2.7702	135.78	2.6108	-0.002	5	0.763	0.4798	2.0523	170.5594
63	110.1	4.42	-0.67	2.13	110.0918	4.0148	9	2.33159	132.6119	3.74132	0.936	2.8053	37.91	4.1561	-0.009	4	0.9861	0.3823	2.6335	38.42795
64	357.8	7.21	3.71	2.51	357.8454	2.0148	6	1.79122	137.28	3.80996	0.9672	2.8428	124.54	2.0365	-0.002	6	0.7402	0.4812	1.9832	160.9951
65	292	11.26	2.87	2.75	292.0351	3.8557	8	2.07871	137.28	3.8786	0.9984	2.8802	100.05	3.9076	-0.003	8	0.8608	0.4223	2.2954	115.0127
66	657.5	8.44	0.26	3.19	657.5032	1.2836	6	1.49084	137.28	3.94724	1.0296	2.9176	224	1.2914	-0.002	6	0.6109	0.5381	1.6344	332.3916
67	220.2	8.16	-4.63	3.4	220.1433	3.7067	8	2.12771	137.28	4.01588	1.0608	2.9551	73.138	3.7756	-0.006	4	0.8963	0.3983	2.3794	81.35558
68	355.8	13.19	-4.2	3.56	355.7486	3.7077	8	2.02259	137.28	4.08452	1.092	2.9925	117.51	3.7507	-0.004	8	0.8422	0.4166	2.2325	138.4715
69	404.5	11.55	-7.01	4.12	404.4142	2.856	8	1.89636	137.28	4.15316	1.1232	3.03	132.1	2.8856	-0.004	5	0.7922	0.4345	2.0967	164.3753

70	319.9	10.2	-4.19	4.21	319.8487	3.189	8	1.98753	137.28	4.2218	1.1544	3.0674	102.9	3.2317	-0.005	5	0.8389	0.4095	2.2145	122.1493
71	109.5	3.03	-4.69	4.63	109.4426	2.7686	5	2.20933	129.8348	4.28671	1.1856	3.1011	33.909	2.8814	-0.014	4	0.9706	0.3521	2.5555	34.99654
72	136.2	7.5	-5.17	4.94	136.1367	5.5092	9	2.38683	136.9988	4.35521	1.2168	3.1384	41.99	5.6912	-0.012	3	1	0.3372	2.7041	41.98987
73	68.4	2.37	-5.13	5.27	68.33721	3.4681	4	2.41932	126.8886	4.41866	1.248	3.1707	20.159	3.7078	-0.025	3	1	0.3337	2.809	20.15941
74	76	1.88	-4.97	4.83	75.93917	2.4757	5	2.28237	125.4511	4.48138	1.2792	3.2022	22.315	2.6309	-0.023	4	1	0.3304	2.6815	22.31534
75	87.3	2.26	-4.97	4.27	87.23917	2.5906	5	2.2544	127.1364	4.54495	1.3104	3.2346	25.566	2.733	-0.02	4	1	0.3271	2.6453	25.56591
76	94.4	3.48	-4.88	4.05	94.34027	3.6888	5	2.34581	130.4858	4.61019	1.3416	3.2686	27.452	3.8783	-0.019	4	1	0.3237	2.7199	27.4522
77	114.1	5.66	-4.59	3.86	114.0438	4.963	9	2.39507	134.5073	4.67745	1.3728	3.3047	33.095	5.1753	-0.016	3	1	0.3202	2.7466	33.09473
78	173	9.67	-4.4	3.8	172.9461	5.5913	9	2.33457	137.28	4.74609	1.404	3.3421	50.328	5.7491	-0.01	3	1	0.3166	2.6543	50.32786
79	468.2	0	-4.76	3.44	468.1417	0	0	0	120.9	4.80654	1.4352	3.3713	137.43	0	-0.004	0	1	0.3139	0	0

	CPT-10	In situ data										Basic output data								
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	γ (pcf)	σ,v (tsf)	u0 (tsf)	σ',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	16.7	0.1	0.18	0.61	16.7022	0.5987	5	2.481	100.2905	0.05015	0	0.0502	332.08	0.6005	0.0008	6	0.5546	5.4263	1.8342	85.39604
2	4.6	0.04	0.1	0.61	4.60122	0.8693	3	3.05974	90.44156	0.09537	0	0.0954	47.248	0.8877	0.0016	5	0.7531	6.1246	2.3627	26.08099
3	6.9	0.08	0	1.22	6.9	1.1594	4	2.9499	96.50159	0.14362	0	0.1436	47.045	1.1841	0	5	0.7661	4.6182	2.3821	29.48846
4	4.4	0.06	0.03	1.41	4.40037	1.3635	3	3.15651	93.29948	0.19027	0	0.1903	22.127	1.4251	0.0005	4	0.8579	4.3575	2.6201	17.33807
5	3.2	0.06	0.03	1.59	3.20037	1.8748	3	3.34141	92.52285	0.23653	0	0.2365	12.531	2.0244	0.0007	4	0.9465	4.1286	2.85	11.56453
6	7.2	0.17	1.91	1.68	7.22338	2.3535	3	3.07911	102.1286	0.28759	0	0.2876	24.117	2.4511	0.0198	4	0.8867	3.1743	2.6871	20.80687
7	18.7	0.4	0.14	1.62	18.70171	2.1388	4	2.70984	110.7098	0.34295	0	0.343	53.532	2.1788	0.0006	5	0.7859	2.4242	2.4158	42.06057
8	18.5	0.31	-0.39	1.7	18.49523	1.6761	4	2.65474	108.8176	0.39736	0	0.3974	45.546	1.7129	-0.002	5	0.7812	2.1491	2.396	36.7585
9	18	0.3	0.35	1.74	18.00428	1.6663	4	2.66316	108.5121	0.45161	0	0.4516	38.867	1.7091	0.0014	5	0.799	1.9743	2.4355	32.75179
10	16.8	0.53	0.38	1.64	16.80465	3.1539	3	2.84662	112.508	0.50787	0	0.5079	32.089	3.2522	0.0017	4	0.8823	1.911	2.6467	29.43281
11	14.7	0.51	0.55	1.62	14.70673	3.4678	3	2.91767	111.9013	0.56382	0	0.5638	25.084	3.6061	0.0028	4	0.9229	1.7878	2.7446	23.89545
12	17.6	0.57	0.48	1.62	17.60588	3.2376	3	2.83744	113.154	0.62039	0	0.6204	27.379	3.3558	0.002	4	0.9069	1.6228	2.6958	26.05066
13	19.3	0.63	0	1.62	19.3	3.2643	4	2.80812	114.1103	0.67745	0	0.6775	27.489	3.383	0	4	0.9087	1.4996	2.6938	26.39203
14	19.2	0.54	-4.43	1.67	19.14578	2.8205	4	2.77217	112.9629	0.73393	0	0.7339	25.087	2.9329	-0.017	4	0.9069	1.3934	2.6825	24.24678
15	20.2	0.54	-2.16	1.73	20.17356	2.6768	4	2.74037	113.0904	0.79048	0	0.7905	24.521	2.7859	-0.008	4	0.9063	1.3025	2.674	23.85964
16	17.9	0.74	-2.68	1.76	17.8672	4.1417	3	2.89895	115.0997	0.84803	0	0.848	20.069	4.348	-0.011	3	0.9785	1.2418	2.8566	19.97371
17	17.1	0.57	-2.49	1.76	17.06952	3.3393	3	2.85629	113.0785	0.90456	0	0.9046	17.87	3.5262	-0.011	3	0.9738	1.1649	2.8373	17.79707
18	15.5	0.28	-2.03	1.77	15.47515	1.8094	4	2.73781	107.6381	0.95838	0	0.9584	15.147	1.9288	-0.01	4	0.9401	1.0975	2.7423	15.05762
19	16	0.29	-1.82	1.83	15.97772	1.815	4	2.72687	107.9728	1.01237	0	1.0124	14.782	1.9378	-0.009	4	0.946	1.0427	2.751	14.74724
20	19.3	0.36	-1.71	1.83	19.27907	1.8673	4	2.66559	110.013	1.06738	0	1.0674	17.062	1.9768	-0.007	4	0.9302	0.9919	2.7029	17.0725
21	23.1	0.7	-1.6	1.84	23.08042	3.0329	4	2.7274	115.3175	1.12504	0	1.125	19.515	3.1883	-0.005	4	0.9616	0.9427	2.7779	19.56135
22	31.3	0.9	-2.2	1.85	31.27307	2.8779	4	2.61089	117.8973	1.18398	0	1.184	25.413	2.9911	-0.005	4	0.9229	0.9015	2.6691	25.63461
23	30.9	0.91	-2.49	1.87	30.86952	2.9479	4	2.62192	117.9465	1.24296	0	1.243	23.836	3.0716	-0.006	4	0.9365	0.86	2.6975	24.08054
24	18.2	0.43	-2.6	1.93	18.16818	2.3668	4	2.74546	111.1683	1.29854	0	1.2985	12.991	2.549	-0.011	4	1	0.8148	2.8631	12.99122
25	16	0.2	-2.2	1.93	15.97307	1.2521	4	2.64301	105.2533	1.35117	0	1.3512	10.822	1.3678	-0.011	4	0.9751	0.7879	2.7854	10.88769
26	14.3	0.2	-2.01	1.95	14.2754	1.401	4	2.7097	104.9793	1.40366	0	1.4037	9.1701	1.5538	-0.011	4	1	0.7538	2.8775	9.17014
27	6.3	0.08	-2.01	1.95	6.2754	1.2748	3	3.005	96.27017	1.45179	0	1.4518	3.3225	1.6585	-0.03	3	1	0.7288	3.2813	3.32252
28	8.2	0.09	-1.63	1.93	8.18005	1.1002	4	2.87348	97.77847	1.50068	0	1.5007	4.4509	1.3474	-0.018	3	1	0.7051	3.1277	4.45089
29	16.4	0.02	-1.53	1.91	16.38127	0.1221	5	2.30071	88.46689	1.54492	0	1.5449	9.6034	0.1348	-0.007	1	0.8727	0.7187	2.4913	10.07755
30	8.7	0.04	-1.32	1.87	8.68384	0.4606	4	2.70417	91.99067	1.59091	0	1.5909	4.4584	0.5639	-0.013	1	1	0.6651	2.9833	4.45841
31	8.2	0.01	-0.41	1.8	8.19498	0.122	1	2.59911	87.36	1.63459	0	1.6346	4.0135	0.1524	-0.005	1	1	0.6473	2.8947	4.01348
32	23.7	0.45	-0.51	1.7	23.69376	1.8992	4	2.59609	112.1486	1.69066	0	1.6907	13.014	2.0452	-0.002	4	1	0.6259	2.8093	13.01446
33	9.2	0.19	-6.33	1.6	9.12252	2.0828	3	2.96491	103.5118	1.74242	0	1.7424	4.2355	2.5745	-0.062	3	1	0.6073	3.2776	4.23554
34	13.3	0.38	-5.07	1.63	13.23794	2.8705	3	2.90608	109.4917	1.79717	0	1.7972	6.366	3.3215	-0.032	3	1	0.5888	3.1844	6.36601
35	22	0.69	-4.97	1.54	21.93917	3.1451	4	2.75445	115.0886	1.85471	0	1.8547	10.829	3.4355	-0.018	3	1	0.5705	3.0025	10.82889
36	34.5	0.82	-4.69	1.29	34.44259	2.3808	4	2.52608	117.4516	1.91344	0	1.9134	17	2.5208	-0.01	4	0.9939	0.555	2.7637	17.0623
37	68.7	2.47	-3.44	1.12	68.65789	3.5976	4	2.42953	127.2024	1.97704	0	1.977	33.728	3.7042	-0.004	4	0.9455	0.5537	2.6294	34.89638
38	94.2	3.54	-4.73	1.07	94.1421	3.7603	4	2.35276	130.6057	2.04234	0	2.0423	45.095	3.8437	-0.004	4	0.9159	0.5475	2.5432	47.65856
39	47.4	1.81	-4.37	1.17	47.34651	3.8229	4	2.56091	124.0211	2.10435	0	2.1044	21.499	4.0007	-0.007	3	1	0.5028	2.8088	21.49934
40	71.1	2.29	-3.83	1.22	71.05312	3.2229	5	2.38456	126.7324	2.16772	0	2.1677	31.778	3.3244	-0.004	4	0.9496	0.5061	2.6162	32.94822
41	41.7	0.74	-3.54	1.2	41.65667	1.7764	5	2.38214	117.1643	2.2263	0.0312	2.1951	17.963	1.8767	-0.007	4	0.9689	0.4931	2.6638	18.37515
42	60.2	1.46	-3.25	1.22	60.16022	2.4269	5	2.34907	123.033	2.28782	0.0624	2.2254	26.005	2.5228	-0.005	4	0.948	0.4942	2.6047	27.0303
43	64.8	2.05	-2.96	1.27	64.76377	3.1654	5	2.40687	125.6962	2.35066	0.0936	2.2571	27.652	3.2846	-0.005	4	0.9715	0.479	2.6629	28.2565
44	122.5	4.76	-2.61	1.29	122.4681	3.8867	8	2.29191	133.414	2.41737	0.1248	2.2926	52.365	3.965	-0.003	4	0.913	0.4937	2.5041	56.0083
45	84.1	3.55	-2.17	1.33	84.07344	4.2225	4	2.42294	130.3505	2.48255	0.156	2.3266	35.07	4.351	-0.004	4	0.9775	0.4629	2.6703	35.69632
46	125.6	5.07	-0.35	1.44	125.5957	4.0368	9	2.29825	133.9372	2.54952	0.1872	2.3623	52.087	4.1204	-0.002	4	0.922	0.4769	2.5192	55.45291
47	146.5	5.69	1.15	1.7	146.5141	3.8836	8	2.24469	135.1571	2.61709	0.2184	2.3987	59.99	3.9542	-9E-04	4	0.901	0.4784	2.459	65.05445
48	104.8	5.06	0.69	1.97	104.8085	4.8279	9	2.40777	133.4814	2.68383	0.2496	2.4342	41.953	4.9547	-0.002	4	0.9767	0.4432	2.6549	42.77435
49	136.3	6.06	0.87	2.26	136.3107	4.4457	9	2.31059	135.442	2.75156	0.2808	2.4708	54.056	4.5373	-0.002	4	0.9355	0.4523	2.5413	57.0945
50	140.3	5.54	1.23	2.34	140.3151	3.9483	8	2.26161	134.8562	2.81898	0.312	2.507	54.845	4.0292	-0.002	4	0.9197	0.4523	2.4948	58.7797
51	127.1	5.76	1.58	2.4	127.1193	4.5312	9	2.3352	134.9002	2.88643	0.3432	2.5432	48.848	4.6365	-0.002	4	0.9545	0.433	2.5824	50.83799
52	475.7	11.35	-2.8	2.56	475.6657	2.3861	8	1.79457	137.28	2.95507	0.3744	2.5807	183.17	2.4011	-0.001	6	0.711	0.5305	1.9393	237.0146
53	478.6	15.46	-4.51	2.72	478.5448	3.2306	8	1.91155	137.28	3.02371	0.4056	2.6181	181.63	3.2512	-0.002	8	0.7589	0.5028	2.0604	225.9759
54	227.3	8.99	-1.07	2.48	227.2869	3.9554	8	2.14409	137.28	3.09235	0.4368	2.6556	84.425	4.0099	-0.002	4	0.8734	0.4477	2.3564	94.85712
55	101.2	6.27	-0.25	2	101.1969	6.1958	9	2.50335	134.9647	3.15984	0.468	2.6918	36.42	6.3955	-0.005	3	1	0.3931	2.7834	36.42016
56	141.7	6.74	1.72	2.11	141.7211	4.7558	9	2.32452	136.3151	3.22799	0.4992	2.7288	50.752	4.8667	-0.003	4	0.9656	0.4006	2.5887	52.43408
57	72.8	2.57	1.2	2.64	72.81469	3.5295	4	2.40609	127.6361	3.29181	0.5304	2.7614	25.177	3.6966	-0.006	4	1	0.3832	2.7344	25.17657
58	67.3	2.41	0.97	2.79	67.31187	3.5804	4	2.43389	126.9741	3.3553	0.5616	2.7937	22.893	3.7682	-0.008	4	1	0.3788	2.7712	22.89315
59	154.2	7.34	1.1	3.03	154.2135	4.7596	9	2.3038	137.1451	3.42387	0.5928	2.8311	53.262	4.8677	-0.003	4	0.9649	0.3869	2.5741	55.13553
60	311.5	6.27	0.99	3.17	311.5121	2.0128	6	1.8232	137.28	3.49251	0.624	2.8685	107.38	2.0356	-0.002	5	0.759	0.4691	2.0294	136.5517
61	54.2	1.57	1.53	3.17	54.21873	2.8957	5	2.43459	123.3109	3.55417	0.6552	2.899	17.477	3.0988	-0.011	4	1	0.365	2.8089	17.47677
62	67.5	1.68	1.82	3.17	67.52228	2.4881	5	2.32024	124.3415	3.61634	0.6864	2.9299	21.811	2.6289	-0.009	4	1	0.3611	2.6891	21.81137
63	72.1	1.76	2.05	3.11	72.12509	2.4402	5	2.29385	124.8428	3.67876	0.7176	2.9612	23.115	2.5714	-0.008	4	1	0.3573	2.6633	23.11471
64	229.2	11.07	3.52	3.19	229.2431	4.8289	9	2.21611	137.28	3.7474	0.7488	2.9986	75.2	4.9092	-0.002	9	0.9332	0.3783	2.4691	80.62286
65	210	8.46	0.92	3.44	210.0113	4.0284	8	2.16918	137.28	3.81604	0.78	3.036	67.916	4.1029	-0.003	4	0.922	0.3784	2.4347	73.73517
66	116.3	7.09	0.02	3.38	116.3002	6.0963	9	2.46215	136.2033	3.88414	0.8112	3.0729	36.583	6.3069	-0.007	3	1	0.3443	2.7776	36.58258
67	475.5	7.98	0.07	3.36	475.5009	1.6782	6	1.66003	137.28	3.95278	0.8424	3.1104	151.6	1.6923	-0.002	6	0.7019	0.4691	1.8493	209.0689
68	343.8	6.83	1.32	3.29	343.8162	1.9865	6	1.79521	137.28	4.02142	0.8736	3.1478	107.95	2.01	-0.002	5	0.7689	0.4325	2.0204	138.8808
69	543.7	11.3	0.75	3.35	543.7092	2.0783	8	1.7149	137.28	4.09006	0.9048	3.1853	169.41	2.0941	-0.002	6	0.7242	0.4502	1.8986	229.5878

70	141.1	2.97	0.77	3.51	141.1094	2.1048	5	2.04705	130.3083	4.15521	0.936	3.2192	42.543	2.1686	-0.006	5	0.908	0.3641	2.3769	47.13103
71	401.1	10.67	0.49	3.01	401.106	2.6601	8	1.87085	137.28	4.22385	0.9672	3.2567	121.87	2.6885	-0.002	5	0.8013	0.4062	2.0922	152.3703
72	454.4	6.7	-0.56	2.13	454.3932	1.4745	6	1.62144	137.28	4.29249	0.9984	3.2941	136.64	1.4886	-0.002	6	0.7037	0.4497	1.8308	191.3016
73	201.9	6.46	-1.41	2.12	201.8827	3.1999	8	2.09543	136.8676	4.36093	1.0296	3.3313	59.292	3.2705	-0.006	5	0.923	0.347	2.4	64.76657
74	76.7	2.88	-0.05	1.66	76.69939	3.7549	4	2.41078	128.5962	4.42523	1.0608	3.3644	21.482	3.9848	-0.015	3	1	0.3145	2.808	21.48187
75	60.4	2.16	0.18	0.61	60.4022	3.576	4	2.46596	125.9086	4.48818	1.092	3.3962	16.464	3.8631	-0.019	3	1	0.3116	2.8885	16.46379
76	62.5	1.35	0.29	0.31	62.50355	2.1599	5	2.30252	122.553	4.54946	1.1232	3.4263	16.915	2.3294	-0.019	4	1	0.3088	2.7468	16.91469
77	67.2	1.75	0.38	0.05	67.20465	2.604	5	2.33552	124.6287	4.61177	1.1544	3.4574	18.104	2.7959	-0.018	4	1	0.306	2.7697	18.10418
78	78.6	2.37	0.48	-0.29	78.60588	3.015	5	2.33338	127.23	4.67539	1.1856	3.4898	21.185	3.2057	-0.016	4	1	0.3032	2.7524	21.18482
79	90	3.3	0.67	-0.52	90.0082	3.6663	5	2.35708	129.9825	4.74038	1.2168	3.5236	24.199	3.8702	-0.014	4	1	0.3003	2.7605	24.19922
80	87.2	3.93	0.67	-0.7	87.2082	4.5065	9	2.43436	131.1839	4.80597	1.248	3.558	23.16	4.7693	-0.015	3	1	0.2974	2.8348	23.1599

Depth (ft)	CPT-11	In situ data										Basic output data								
	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	5.7	0.05	0.01	-0.81	5.70012	0.8772	4	2.97539	92.59665	0.0463	0	0.0463	122.12	0.8844	0.0001	5	0.6788	8.3656	2.1616	44.70025
2	5.6	0.16	0	-0.36	5.6	2.8571	3	3.21732	101.0642	0.09683	0	0.0968	56.833	2.9074	0	4	0.8232	7.1602	2.5378	37.23993
3	6.6	0.16	0.26	-0.04	6.60318	2.4231	3	3.11904	101.4661	0.14756	0	0.1476	43.748	2.4785	0.0029	4	0.8296	5.1259	2.5506	31.27364
4	23	0.24	0	0.32	23	1.0435	5	2.46631	107.4766	0.2013	0	0.2013	113.26	1.0527	0	5	0.6524	2.9524	2.0785	63.61514
5	8.2	0.38	0.19	0.33	8.20233	4.6328	3	3.19623	108.3242	0.25546	0	0.2555	31.108	4.7818	0.0017	3	0.9199	3.6962	2.7777	27.76034
6	9.9	0.41	0	0.33	9.9	4.1414	3	3.10155	109.339	0.31013	0	0.3101	30.922	4.2754	0	4	0.9103	3.0561	2.7454	27.69829
7	12.9	0.35	-0.16	0.27	12.89804	2.7136	3	2.90133	108.8265	0.36455	0	0.3646	34.381	2.7925	-9E-04	4	0.8583	2.4959	2.6024	29.56407
8	17.8	1.05	-2.21	0.26	17.77295	5.9079	3	3.0008	117.647	0.42337	0	0.4234	40.98	6.052	-0.009	3	0.9197	2.3221	2.7527	38.07522
9	26.9	1.59	-1.63	0.27	26.88005	5.9152	3	2.86925	121.6922	0.48422	0	0.4842	54.512	6.0237	-0.004	3	0.8905	2.0059	2.6711	50.0403
10	26.5	1.3	-1.44	0.27	26.48237	4.9089	3	2.81838	120.1824	0.54431	0	0.5443	47.653	5.0119	-0.004	4	0.8857	1.8017	2.6489	44.16579
11	27.3	1.27	-1.28	0.37	27.28433	4.6547	3	2.79321	120.0843	0.60435	0	0.6044	44.147	4.7601	-0.003	4	0.8893	1.6456	2.6516	41.49281
12	23.4	0.96	-1.34	0.56	23.3836	4.1054	3	2.80704	117.6605	0.66318	0	0.6632	34.26	4.2253	-0.004	4	0.9059	1.5269	2.6882	32.78574
13	37.3	1.33	-0.86	0.74	37.28947	3.5667	4	2.61508	121.184	0.72377	0	0.7238	50.521	3.6373	-0.002	4	0.847	1.3794	2.5262	47.6691
14	59.7	2.6	-0.77	0.74	59.69058	4.3558	4	2.53176	127.2363	0.78739	0	0.7874	74.808	4.414	-9E-04	4	0.8281	1.2773	2.469	71.10234
15	97.1	3.62	-0.57	0.83	97.09302	3.7284	5	2.34129	130.8445	0.85281	0	0.8528	112.85	3.7614	-4E-04	5	0.7671	1.1799	2.3011	107.3218
16	98.1	4.37	-0.99	0.83	98.08788	4.4552	9	2.39821	132.2471	0.91894	0	0.9189	105.74	4.4973	-7E-04	9	0.7978	1.1191	2.3736	102.7685
17	61.3	3.3	-0.95	0.85	61.28837	5.3844	4	2.59255	129.0452	0.98346	0	0.9835	61.319	5.4722	-0.001	4	0.881	1.0666	2.5841	60.78779
18	66.8	2.85	-0.67	0.89	66.7918	4.267	4	2.49223	128.1822	1.04755	0	1.0476	62.76	4.335	-7E-04	4	0.8518	1.0086	2.4994	62.66682
19	61.9	3.17	-0.73	0.91	61.89106	5.1219	4	2.57344	128.775	1.11194	0	1.1119	54.661	5.2156	-9E-04	4	0.8921	0.9567	2.5973	54.95396
20	67.4	2.84	-0.86	0.95	67.38947	4.2143	4	2.48563	128.1782	1.17603	0	1.176	56.303	4.2892	-9E-04	4	0.867	0.9125	2.5233	57.09974
21	55.1	2.89	-0.67	0.91	55.0918	5.2458	4	2.61485	127.8145	1.23993	0	1.2399	43.431	5.3666	-9E-04	4	0.9267	0.8633	2.672	43.9393
22	37.9	1.77	-0.57	0.91	37.89302	4.671	4	2.69088	123.3144	1.30159	0	1.3016	28.113	4.8372	-0.001	3	0.9688	0.8182	2.7751	28.29496
23	39.6	1.88	-0.51	0.87	39.59376	4.7482	4	2.68236	123.8626	1.36352	0	1.3635	28.038	4.9176	-1E-03	3	0.9739	0.7812	2.7808	28.22383
24	54.1	2.32	-0.33	0.95	54.09596	4.2887	4	2.55607	126.1626	1.4266	0	1.4266	36.919	4.4048	-5E-04	4	0.9299	0.7574	2.6571	37.70151
25	53.6	2.43	-0.47	0.95	53.59425	4.5341	4	2.57641	126.4788	1.48984	0	1.4898	34.973	4.6637	-7E-04	4	0.9462	0.7234	2.692	35.62351
26	33.2	1.34	-0.19	1.13	33.19767	4.0364	4	2.68862	120.9554	1.55032	0	1.5503	20.413	4.2342	-4E-04	3	1	0.6825	2.8419	20.41343
27	34.3	1.55	-0.2	1.26	34.29755	4.5193	4	2.71194	122.1001	1.61137	0	1.6114	20.285	4.7421	-4E-04	3	1	0.6567	2.8762	20.28471
28	28.5	1.19	-0.63	1.45	28.49229	4.1766	4	2.74762	119.7139	1.67123	0	1.6712	16.049	4.4368	-0.002	3	1	0.6331	2.935	16.04872
29	72.5	2.46	-0.81	1.53	72.49009	3.3936	5	2.39491	127.3052	1.73488	0	1.7349	40.784	3.4768	-8E-04	4	0.9023	0.6401	2.546	42.80213
30	144.1	1.79	-1.05	1.57	144.0872	1.2423	6	1.87399	126.6543	1.79821	0	1.7982	79.128	1.258	-5E-04	6	0.6968	0.6911	1.9993	92.9324
31	39.6	1.53	-0.96	1.47	39.58825	3.8648	4	2.61996	122.355	1.85938	0	1.8594	20.291	4.0553	-0.002	3	1	0.5691	2.8318	20.29105
32	92.8	3.82	-0.77	1.39	92.79058	4.1168	4	2.38693	131.1275	1.92495	0	1.925	47.204	4.204	-6E-04	4	0.9162	0.578	2.5587	49.63161
33	117.8	3.41	-0.96	1.46	117.7883	2.895	5	2.2032	130.8785	1.99039	0	1.9904	58.179	2.9448	-6E-04	5	0.8473	0.5855	2.3706	64.07167
34	154	2.12	-0.77	1.45	153.9906	1.3767	6	1.88542	128.0544	2.05441	0	2.0544	73.956	1.3953	-4E-04	5	0.7261	0.6177	2.0443	88.69548
35	297.1	4.31	-0.67	1.4	297.0918	1.4507	6	1.71829	134.8488	2.12184	0	2.1218	139.02	1.4612	-2E-04	6	0.6542	0.6344	1.8471	176.8379
36	308.5	3.29	-0.54	1.54	308.4934	1.0665	6	1.60249	132.9647	2.18832	0	2.1883	139.97	1.0741	-1E-04	6	0.6147	0.6398	1.7352	185.1961
37	280.5	2	-0.54	1.74	280.4934	0.713	6	1.49898	129.0906	2.25287	0	2.2529	123.51	0.7188	-1E-04	6	0.5829	0.6437	1.6432	169.2761
38	424.6	3.52	-0.48	2.05	424.5941	0.829	6	1.43082	134.2382	2.31999	0	2.32	182.02	0.8336	-8E-05	6	0.5526	0.648	1.5556	258.6172
39	392.6	3.29	-0.58	1.97	392.5929	0.838	6	1.45536	133.5527	2.38676	0	2.3868	163.49	0.8431	-1E-04	6	0.5695	0.6292	1.5915	232.0501
40	435.7	4.11	-1.48	1.96	435.6819	0.9434	6	1.46931	135.4349	2.45448	0	2.4545	176.5	0.9487	-3E-04	6	0.5778	0.615	1.6049	251.7962
41	273.9	3.84	-2.33	2.52	273.8715	1.4021	6	1.72781	133.8054	2.52138	0.0312	2.4902	108.97	1.4152	-7E-04	6	0.6926	0.5528	1.9019	141.7647
42	298.2	5.2	-3.36	2.84	298.1589	1.744	6	1.78233	136.2311	2.5895	0.0624	2.5271	116.96	1.7593	-0.001	6	0.7145	0.5369	1.9549	149.9668
43	73.1	1.42	-2.2	2.69	73.07307	1.9433	5	2.22151	123.304	2.65115	0.0936	2.5576	27.535	2.0164	-0.004	4	0.931	0.4397	2.5177	29.26519
44	48.6	1.79	-6.76	2.53	48.51726	3.6894	4	2.54251	123.9994	2.71315	0.1248	2.5884	17.696	3.908	-0.013	3	1	0.4088	2.8672	17.69626
45	101.2	3.91	-5.65	2.72	101.1308	3.8663	4	2.34208	131.5078	2.7789	0.156	2.6229	37.497	3.9755	-0.006	4	0.9724	0.4136	2.6199	38.44813
46	57.5	1.6	-5.74	2.9	57.42974	2.786	5	2.40494	123.5897	2.8407	0.1872	2.6535	20.572	2.931	-0.011	4	1	0.3988	2.7381	20.57248
47	120.8	3.76	-5.66	2.9	120.7307	3.1144	5	2.22067	131.6536	2.90653	0.2184	2.6881	43.831	3.1912	-0.005	4	0.9271	0.4213	2.4915	46.91487
48	174.1	8.23	-9.43	3	173.9846	4.7303	9	2.27226	137.28	2.97517	0.2496	2.7256	62.743	4.8126	-0.005	4	0.9381	0.4116	2.5163	66.52806
49	188.3	7.07	-11.77	2.92	188.1559	3.7575	8	2.17028	137.28	3.04381	0.2808	2.763	66.997	3.8193	-0.006	4	0.9003	0.4214	2.4114	73.72361
50	51.4	1.86	-11	3.4	51.26536	3.6282	4	2.52041	124.4145	3.10601	0.312	2.794	17.237	3.8622	-0.023	3	1	0.3787	2.8729	17.23663
51	55.8	0.84	-10.88	3.67	55.66683	1.509	5	2.23944	118.7989	3.16541	0.3432	2.8222	18.603	1.6	-0.021	4	0.9795	0.3825	2.6137	18.98031
52	108.4	2.48	-10.62	3.88	108.27	2.2906	5	2.15125	128.3429	3.22958	0.3744	2.8552	36.789	2.361	-0.011	5	0.9222	0.4004	2.4572	39.74399
53	131.9	4.98	-10.43	3.91	131.7723	3.7793	8	2.26285	133.9232	3.29654	0.4056	2.8909	44.441	3.8762	-0.009	4	0.9606	0.3808	2.5551	46.23686
54	137.7	4.74	-10.43	4.02	137.5723	3.4455	8	2.21961	133.6669	3.36338	0.4368	2.9266	45.859	3.5318	-0.009	4	0.9461	0.3819	2.5122	48.44158
55	93.1	3	-9.85	4.23	92.97944	3.2265	5	2.306	129.3644	3.42806	0.468	2.9601	30.253	3.35	-0.013	4	0.9981	0.3582	2.6455	30.31346
56	305.4	7.33	-7.45	4.35	305.3088	2.4009	8	1.89231	137.28	3.4967	0.4992	2.9975	100.69	2.4287	-0.003	5	0.7973	0.4359	2.114	124.3466
57	80.8	3.16	-1.74	4.39	80.7787	3.9119	4	2.40916	129.4015	3.5614	0.5304	3.031	25.476	4.0924	-0.008	4	1	0.3491	2.7597	25.47584
58	124.7	2.76	-1.53	4.42	124.6813	2.2136	5	2.09905	129.4698	3.62614	0.5616	3.0645	39.502	2.28	-0.006	5	0.9184	0.3766	2.4207	43.08417
59	197	9.07	-1.06	4.38	196.987	4.6044	9	2.23306	137.28	3.69478	0.5928	3.102	62.313	4.6924	-0.003	4	0.9545	0.3582	2.5127	65.43947
60	60.2	1.51	-0.96	4.54	60.18825	2.5088	5	2.3588	123.2805	3.75642	0.624	3.1324	18.015	2.6758	-0.012	4	1	0.3378	2.76	18.01543
61	63.9	2.07	-1.05	4.71	63.88715	3.2401	4	2.41825	125.734	3.81928	0.6552	3.1641	18.984	3.4461	-0.012	4	1	0.3344	2.8092	18.98429
62	80.4	2.18	-1.04	4.95	80.38727	2.7119	5	2.29332	126.6732	3.88262	0.6864	3.1962	23.936	2.8495	-0.01	4	1	0.3311	2.679	23.93598
63	60.8	2.13	-1.05	5.11	60.78715	3.504	4	2.45769	125.8218	3.94553	0.7176	3.2279	17.609	3.7473	-0.014	3	1	0.3278	2.8574	17.6093
64	74	2.27	-0.86	5.26	73.98947	3.068	5	2.35694	126.7669	4.00891	0.7488	3.2601	21.466	3.2438	-0.012	4	1	0.3246	2.7511	21.46568
65	97	3.07	-0.73	5.48	96.99106	3.1652	5	2.28763	129.6362	4.07373	0.78	3.2937	28.21	3.304	-0.009	4	1	0.3213	2.6652	28.21035
66	86.3	3.35	-0.57	5.7	86.29302	3.8821	4	2.38785	129.9898	4.13873	0.8112	3.3275	24.689	4.0777	-0.01	4	1	0.318	2.7688	24.68929
67	90.4	3.03	-0.48	5.92	90.39412	3.352	5	2.32653	129.3684	4.20341	0.8424	3.361	25.644	3.5155	-0.01	4	1	0.3148	2.7141	25.64428
68	153.5	5.73	-0.53	6.27	153.4935	3.7331	8	2.2189	135.3218	4.27107	0.8736	3.3975	43.922	3.8399	-0.006	4	0.9874	0.316	2.5635	44.56983
69	582	6.94	-8.3	6.43	581.8984	1.1927	6	1.48774	137.28	4.33971	0.9048	3.4349	168.14	1.2016	-0.003	6	0.6537	0.4632	1.6818	252.8065

70	771.2	5.05	-1.44	6.37	771.1824	0.6548	7	1.20103	137.28	4.40835	0.936	3.4724	220.82	0.6586	-0.001	6	0.5352	0.5294	1.3652	383.6651
71	543	11.2	-7.27	6.55	542.911	2.063	8	1.7123	137.28	4.47699	0.9672	3.5098	153.41	2.0801	-0.003	6	0.7487	0.4075	1.9224	207.3584
72	120	3.99	-12.53	6.82	119.8466	3.3293	5	2.24512	132.0701	4.54303	0.9984	3.5446	32.529	3.4604	-0.016	4	1	0.2985	2.632	32.52912
73	64.8	1.51	-12.74	6.78	64.64406	2.3359	5	2.31496	123.4547	4.60475	1.0296	3.5752	16.793	2.515	-0.032	4	1	0.296	2.7687	16.79349
74	61.2	1.65	-13.2	7.2	61.03843	2.7032	5	2.37679	123.9635	4.66674	1.0608	3.6059	15.633	2.927	-0.036	4	1	0.2934	2.8327	15.63303
75	76.8	2.76	-13.11	7.86	76.63953	3.6013	4	2.39753	128.2829	4.73088	1.092	3.6389	19.761	3.8382	-0.028	3	1	0.2908	2.8252	19.76122
76	52.1	0.97	-13.11	8.23	51.93953	1.8676	5	2.32139	119.6827	4.79072	1.1232	3.6675	12.856	2.0573	-0.044	4	1	0.2885	2.8151	12.85578
77	195.6	9.9	-12.63	8.44	195.4454	5.0654	9	2.26992	137.28	4.85936	1.1544	3.705	51.441	5.1945	-0.011	4	1	0.2856	2.6152	51.44079
78	59.2	2.62	-12.53	9.03	59.04663	4.4372	4	2.54086	127.2659	4.92299	1.1856	3.7374	14.482	4.8408	-0.039	3	1	0.2831	2.9935	14.48166
79	54.6	1.41	-12.34	9.13	54.44896	2.5896	5	2.39998	122.5347	4.98426	1.2168	3.7675	13.129	2.8505	-0.043	3	1	0.2809	2.8872	13.12946
80	118	4.16	-12.11	9.26	117.8518	3.5299	5	2.26946	132.3345	5.05043	1.248	3.8024	29.666	3.6879	-0.019	4	1	0.2783	2.6802	29.66562

	CPT-12	In situ data										Basic output data									
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	27.6	0.05	0.26	-0.44	27.60318	0.1811	5	2.10847	96.44403	0.04822	0	0.0482	571.42	0.1815	0.0007	6	0.4411	3.9055	1.539	101.7046
2	22.6	0.48	0.19	-0.2	22.60233	2.1237	4	2.64096	112.5058	0.10447	0	0.1045	215.34	2.1335	0.0006	5	0.6701	4.7187	2.1346	100.3299
3	62.4	0.51	0.06	0.32	62.40073	0.8173	6	2.04207	115.4263	0.16219	0	0.1622	383.74	0.8194	7E-05	6	0.5118	2.6112	1.7125	153.5903
4	17.8	0.23	0.1	0.71	17.80122	1.2921	4	2.60925	106.5403	0.21546	0	0.2155	81.62	1.3079	0.0004	5	0.7038	3.0649	2.2123	50.93878
5	11.5	0.29	0.1	0.65	11.50122	2.5215	3	2.92456	107.171	0.26904	0	0.269	41.749	2.5819	0.0006	4	0.8305	3.1183	2.5429	33.10195
6	8.7	0.22	0.19	0.63	8.70233	2.5281	3	3.0267	104.4695	0.32128	0	0.3213	26.087	2.625	0.0016	4	0.8838	2.8674	2.6748	22.71208
7	15.7	0.55	-1.43	0.64	15.6825	3.5071	3	2.89844	112.6104	0.37758	0	0.3776	40.534	3.5936	-0.007	4	0.8647	2.4376	2.6171	35.25809
8	20.7	0.95	-3.15	0.69	20.66144	4.5979	3	2.87988	117.282	0.43622	0	0.4362	46.364	4.6971	-0.011	4	0.8787	2.1785	2.6464	41.64084
9	30.5	1.29	-2.77	0.71	30.4661	4.2342	4	2.73012	120.4677	0.49646	0	0.4965	60.367	4.3044	-0.007	4	0.8423	1.8916	2.5433	53.57734
10	29.1	1.09	-2.58	0.75	29.06842	3.7498	4	2.70996	119.1205	0.55602	0	0.556	51.28	3.8229	-0.007	4	0.8474	1.7251	2.5492	46.48503
11	26.5	1.11	-2.92	0.79	26.46426	4.1943	3	2.77273	119.0246	0.61553	0	0.6155	41.994	4.2942	-0.008	4	0.8837	1.6141	2.6355	39.43002
12	26.9	1.03	-2.68	0.86	26.8672	3.8337	4	2.74199	118.5142	0.67479	0	0.6748	38.816	3.9324	-0.007	4	0.8843	1.4885	2.63	36.84649
13	25.9	0.94	-2.68	0.85	25.8672	3.634	4	2.73926	117.7526	0.73366	0	0.7337	34.258	3.74	-0.008	4	0.8947	1.3877	2.6504	32.96165
14	28.4	0.9	-2.49	0.88	28.36952	3.1724	4	2.67051	117.6597	0.79249	0	0.7925	34.798	3.2636	-0.007	4	0.8799	1.2896	2.6044	33.61039
15	73.6	2.34	-2.2	0.9	73.57307	3.1805	5	2.36997	126.9754	0.85598	0	0.856	84.952	3.218	-0.002	5	0.7778	1.1793	2.3286	81.04208
16	81.9	3.04	-2.2	0.94	81.87307	3.7131	4	2.38829	129.151	0.92056	0	0.9206	87.939	3.7553	-0.002	4	0.7941	1.1169	2.3637	85.45305
17	127.4	3.97	-4.83	0.98	127.3409	3.1176	5	2.20637	132.1813	0.98665	0	0.9867	128.06	3.142	-0.003	5	0.7338	1.0527	2.1972	125.702
18	142.4	1.07	0.76	0.88	142.4093	0.7514	6	1.7318	122.8607	1.04808	0	1.0481	134.88	0.7569	0.0004	6	0.5604	1.0054	1.7345	134.313
19	110	1.24	0.48	0.84	110.0059	1.1272	6	1.9312	123.3099	1.10973	0	1.1097	98.128	1.1387	0.0003	6	0.6444	0.9698	1.9475	99.80447
20	110.6	3.63	0.4	0.79	110.6049	3.282	5	2.26249	131.1825	1.17532	0	1.1753	93.106	3.3172	0.0003	5	0.7788	0.9214	2.292	95.29481
21	193.7	6.44	-1.23	0.77	193.6849	3.325	8	2.11937	136.7438	1.2437	0	1.2437	154.73	3.3465	-5E-04	8	0.7291	0.8889	2.1528	161.6587
22	148.1	7.05	-4.27	0.65	148.0477	4.762	9	2.31407	136.7506	1.31207	0	1.3121	111.84	4.8046	-0.002	9	0.8127	0.8396	2.3637	116.434
23	49.3	2.08	-4.59	0.73	49.24382	4.2239	4	2.57963	125.1343	1.37464	0	1.3746	34.823	4.3452	-0.007	4	0.9331	0.7833	2.6722	35.4379
24	68.8	2.8	-1.99	0.49	68.77564	4.0712	4	2.46857	128.1241	1.4387	0	1.4387	46.804	4.1582	-0.002	4	0.8947	0.7596	2.5632	48.34298
25	40.4	1.22	-3.25	0.24	40.36022	3.0228	4	2.54128	120.7454	1.49907	0	1.4991	25.923	3.1394	-0.006	4	0.9389	0.721	2.6717	26.4814
26	50.6	1.71	-2.55	-0.08	50.56879	3.3815	4	2.50316	123.7659	1.56096	0	1.561	31.396	3.4892	-0.004	4	0.9286	0.697	2.6369	32.28036
27	37.9	1.11	-1.24	-0.37	37.88482	2.9299	4	2.5528	119.8996	1.62091	0	1.6209	22.373	3.0609	-0.002	4	0.9614	0.6636	2.7157	22.74396
28	40.7	1.76	-3.19	-0.23	40.66095	4.3285	4	2.64585	123.4449	1.68263	0	1.6826	23.165	4.5153	-0.006	3	1	0.6288	2.8189	23.16513
29	34.9	1.44	-2.95	-0.13	34.86389	4.1304	4	2.67988	121.6014	1.74343	0	1.7434	18.997	4.3478	-0.006	3	1	0.6069	2.8732	18.9973
30	34.9	1.54	-2.77	-0.16	34.8661	4.4169	4	2.6999	122.0928	1.80448	0	1.8045	18.322	4.658	-0.006	3	1	0.5864	2.9045	18.322
31	143.8	2.48	0	-0.11	143.8	1.7246	6	1.9771	129.0351	1.86899	0	1.869	75.94	1.7473	0	5	0.7437	0.655	2.1137	87.85962
32	65.8	2.85	0.33	-0.17	65.80404	4.331	4	2.50137	128.1459	1.93307	0	1.9331	33.041	4.4621	0.0004	4	0.9688	0.5578	2.6962	33.6694
33	80.8	2.59	-0.15	-0.27	80.79816	3.2055	5	2.34472	127.9466	1.99704	0	1.997	39.459	3.2868	-1E-04	4	0.9115	0.5605	2.5371	41.74116
34	92.4	4.1	0.29	-0.29	92.40355	4.4371	9	2.41317	131.6349	2.06286	0	2.0629	43.794	4.5384	0.0002	4	0.9417	0.5333	2.6086	45.53256
35	134	3.19	-0.67	-0.35	133.9918	2.3807	5	2.10224	130.7049	2.12821	0	2.1282	61.96	2.4192	-4E-04	5	0.82	0.5638	2.2818	70.26291
36	115.7	3.52	-0.52	-0.41	115.6936	3.0425	5	2.22472	131.0671	2.19374	0	2.1937	51.738	3.1013	-3E-04	5	0.8784	0.5271	2.4248	56.53695
37	46.3	2.13	0.19	-0.16	46.30233	4.6002	4	2.62485	125.1579	2.25632	0	2.2563	19.521	4.8359	0.0003	3	1	0.469	2.8943	19.52115
38	335.3	4.54	0.14	-0.11	335.3017	1.354	6	1.66314	135.5243	2.32408	0	2.3241	143.27	1.3635	3E-05	6	0.6479	0.6006	1.8054	189.0097
39	147.6	5.77	-0.3	0.21	147.5963	3.9093	8	2.24511	135.2772	2.39172	0	2.3917	60.711	3.9737	-2E-04	4	0.8998	0.4801	2.4569	65.87863
40	94.4	3.9	-0.19	0.15	94.39767	4.1315	4	2.38335	131.321	2.45738	0	2.4574	37.414	4.2419	-2E-04	4	0.9725	0.4407	2.6408	38.2903
41	83.3	2.9	-0.35	0.23	83.29572	3.4816	5	2.36242	128.8481	2.52181	0.0312	2.4906	32.431	3.5903	-7E-04	4	0.9723	0.435	2.636	33.20982
42	97.9	3.93	-0.57	0.34	97.89302	4.0146	4	2.36369	131.4657	2.58754	0.0624	2.5251	37.743	4.1236	-0.001	4	0.9712	0.4297	2.6289	38.69928
43	158.3	6.24	-6.55	0.59	158.2198	3.9439	8	2.23054	136.0197	2.65555	0.0936	2.562	60.721	4.0112	-0.004	4	0.9092	0.4475	2.4602	65.79671
44	63.3	1.75	-6.76	0.94	63.21726	2.7682	5	2.37308	124.4796	2.71779	0.1248	2.593	23.332	2.8926	-0.01	4	0.9981	0.4088	2.6911	23.37226
45	56.6	1.69	-6.79	1.31	56.51689	2.9903	5	2.4313	123.951	2.77977	0.156	2.6238	20.481	3.1449	-0.012	4	1	0.4033	2.7586	20.48092
46	53.7	1.48	-6.88	1.6	53.61579	2.7604	5	2.42382	122.8516	2.84119	0.1872	2.654	19.131	2.9148	-0.013	4	1	0.3987	2.7616	19.13141
47	40.3	1.07	-6.88	2	40.21579	2.6607	4	2.50571	119.7767	2.90108	0.2184	2.6827	13.909	2.8675	-0.019	3	1	0.3944	2.8684	13.90949
48	39.2	1.17	-7.03	2.26	39.11395	2.9913	4	2.54839	120.3627	2.96126	0.2496	2.7117	13.332	3.2363	-0.021	3	1	0.3902	2.9142	13.33231
49	279.4	5.56	-6.83	2.45	279.3164	1.9906	6	1.84567	136.5617	3.02954	0.2808	2.7487	100.51	2.0124	-0.003	5	0.7604	0.4839	2.048	126.3422
50	323.7	10.09	-5.07	2.27	323.6379	3.1177	8	1.97646	137.28	3.09818	0.312	2.7862	115.05	3.1478	-0.002	5	0.8094	0.4568	2.172	138.366
51	235.9	8.22	-9.21	2.3	235.7873	3.4862	8	2.08921	137.28	3.16682	0.3432	2.8236	82.384	3.5337	-0.004	5	0.8663	0.4273	2.3169	93.93502
52	54.7	1.38	-9.85	2.47	54.57944	2.5284	5	2.39216	122.3832	3.22801	0.3744	2.8536	17.995	2.6874	-0.021	4	1	0.3708	2.7615	17.99523
53	70.5	0.93	-9.85	2.79	70.37944	1.3214	5	2.12397	120.1156	3.28807	0.4056	2.8825	23.276	1.3862	-0.017	5	0.9326	0.3927	2.4809	24.90256
54	125.3	4.06	-9.7	3.36	125.1813	3.2433	5	2.22439	132.3036	3.35422	0.4368	2.9174	41.758	3.3326	-0.009	4	0.9507	0.3813	2.5253	43.90178
55	134.5	6.52	-8.38	3.57	134.3974	4.8513	9	2.34491	135.9428	3.42219	0.468	2.9542	44.335	4.978	-0.008	4	0.9976	0.3591	2.6449	44.44552
56	103.1	4.82	-6.02	3.62	103.0263	4.6784	9	2.40157	133.0841	3.48874	0.4992	2.9895	33.295	4.8424	-0.009	3	1	0.3539	2.7244	33.29532
57	141.6	6.68	-8.04	3.47	141.5016	4.7208	9	2.32229	136.2459	3.55686	0.5304	3.0265	45.58	4.8425	-0.008	4	0.9945	0.3516	2.6269	45.84225
58	235.2	10.28	-7.49	3.65	235.1083	4.3725	8	2.17348	137.28	3.6255	0.5616	3.0639	75.552	4.4409	-0.005	4	0.9217	0.3753	2.4305	82.11021
59	186.3	6.97	-7.75	4.23	186.2051	3.7432	8	2.17145	137.2264	3.69411	0.5928	3.1013	58.85	3.819	-0.006	4	0.9332	0.3666	2.4562	63.2305
60	230.1	10.79	-0.45	4.79	230.0945	4.6894	9	2.20435	137.28	3.76275	0.624	3.1388	72.109	4.7673	-0.003	9	0.941	0.3594	2.4725	76.88387
61	66.2	2.48	-4.88	5.18	66.14027	3.7496	4	2.45375	127.1408	3.82632	0.6552	3.1711	19.65	3.9799	-0.016	3	1	0.3337	2.8372	19.65043
62	67.9	2.11	-4.9	5.19	67.84002	3.1103	5	2.38734	126.0205	3.88933	0.6864	3.2029	19.966	3.2994	-0.016	4	1	0.3304	2.7803	19.96629
63	65.6	2.24	-4.78	5.29	65.54149	3.4177	4	2.4272	126.3739	3.95252	0.7176	3.2349	19.039	3.637	-0.017	3	1	0.3271	2.8229	19.03879
64	65	2.56	-4.82	5.35	64.941	3.942	4	2.47508	127.3285	4.01618	0.7488	3.2674	18.646	4.2019	-0.018	3	1	0.3238	2.8698	18.64636
65	61.1	2.08	-4.75	5.46	61.04186	3.4075	4	2.44773	125.6582	4.07901	0.78	3.299	17.267	3.6515	-0.02	3	1	0.3207	2.857	17.26663
66	108.8	4.45	-4.69	5.58	108.7426	4.0922	9	2.34141	132.6314	4.14533	0.8112	3.3341	31.372	4.2544	-0.011	4	1	0.3174	2.7042	31.37169
67	95.8	4.24	-4.29	5.73	95.74749	4.4283	9	2.40276	131.9672	4.21131	0.8424	3.3689	27.171	4.6321	-0.013	3	1	0.3141	2.7751	27.17084
68	80.9	3.76	-4.06	5.81	80.85031	4.6506	4	2.46592	130.6757	4.27665	0.8736	3.4031	22.501	4.9103	-0.015	3	1	0.3109	2.8526	22.50147
69	88.2	4.04	-4.11	5.92	88.14969	4.5831	9	2.43703	131.412	4.34236	0.9048	3.4376	24.38	4.8206	-0.014	3	1	0.3078	2.8214	24.37991

70	182.7	8.06	-3.29	6.11	182.6597	4.4126	9	2.23542	137.28	4.411	0.936	3.475	51.295	4.5218	-0.007	4	0.9941	0.3067	2.5697	51.65813
71	650.3	0	-8.43	6.51	650.1968	0	0	0	120.9	4.47145	0.9672	3.5043	184.27	0	-0.002	0	1	0.302	0	0

	CPT-13	In situ data										Basic output data								
Depth (ft)	qc (tsf)	fs (tsf)	u (psi)	Other	qt (tsf)	Rf(%)	SBT	Ic SBT	ã (pcf)	ó,v (tsf)	u0 (tsf)	ó',vo (tsf)	Qt1	Fr (%)	Bq	SBTn	n	Cn	Ic	Qtn
1	31.6	0.96	-3.32	-0.24	31.55936	3.0419	4	2.62342	118.3918	0.0592	0	0.0592	532.13	3.0476	-0.008	8	0.6462	6.4447	2.0767	191.8616
2	6	0.03	2.63	-0.15	6.03219	0.4973	1	2.86467	88.99704	0.10369	0	0.1037	57.173	0.506	0.0319	5	0.6982	5.0621	2.2189	28.36277
3	30.3	0.44	-0.46	-0.37	30.29437	1.4524	5	2.44193	112.5836	0.15999	0	0.16	188.36	1.4601	-0.001	5	0.6349	3.3184	2.0372	94.50512
4	17.6	0.17	0.33	-0.03	17.60404	0.9657	5	2.55133	104.3013	0.21214	0	0.2121	81.984	0.9775	0.0014	5	0.6807	2.9859	2.1517	49.07791
5	12.4	0.19	0.31	0.02	12.40379	1.5318	4	2.78195	104.2612	0.26427	0	0.2643	45.937	1.5651	0.0018	5	0.7764	2.936	2.403	33.68435
6	11.1	0.23	-1.01	0	11.08764	2.0744	4	2.89189	105.3856	0.31696	0	0.317	33.981	2.1354	-0.007	4	0.8357	2.7383	2.5497	27.87376
7	8.1	0.25	-1.56	0	8.08091	3.0937	3	3.1014	105.2241	0.36957	0	0.3696	20.866	3.242	-0.015	4	0.9287	2.6563	2.786	19.35837
8	12.1	0.32	-2.18	-0.02	12.07332	2.6505	3	2.91919	108.0097	0.42358	0	0.4236	27.503	2.7468	-0.013	4	0.8826	2.2435	2.6584	24.7012
9	12	0.54	-2.19	0.06	11.97319	4.5101	3	3.05797	111.818	0.47949	0	0.4795	23.971	4.6982	-0.014	3	0.952	2.1245	2.8316	23.07741
10	19.4	0.91	-2.08	0.06	19.37454	4.6969	3	2.90708	116.8104	0.53789	0	0.5379	35.019	4.831	-0.008	3	0.9146	1.8567	2.726	33.0535
11	8.3	0.22	0.11	0.1	8.30135	2.6502	3	3.05499	104.3544	0.59007	0	0.5901	13.068	2.853	0.001	3	0.9803	1.7727	2.8932	12.91905
12	20.9	0.9	1.25	0	20.9153	4.3031	3	2.85711	116.9162	0.64853	0	0.6485	31.25	4.4408	0.0044	4	0.9212	1.5698	2.7304	30.06819
13	22.7	1.11	1.49	-0.05	22.71824	4.8859	3	2.86632	118.6524	0.70785	0	0.7079	31.095	5.0431	0.0049	3	0.9374	1.4577	2.7658	30.32166
14	27.8	1.11	1.63	-0.03	27.81995	3.9899	4	2.7421	119.1465	0.76743	0	0.7674	35.251	4.1031	0.0043	4	0.9024	1.3362	2.6665	34.16247
15	22.1	0.72	1.83	-0.02	22.1224	3.2546	4	2.76093	115.4203	0.82514	0	0.8251	25.811	3.3807	0.0062	4	0.9206	1.2573	2.7075	25.30615
16	50.1	1.54	2.12	0.12	50.12595	3.0723	4	2.477	122.9783	0.88663	0	0.8866	55.536	3.1276	0.0031	4	0.8226	1.1566	2.4426	53.82073
17	83.8	3.67	-0.55	0.2	83.79327	4.3798	4	2.43599	130.5856	0.95192	0	0.9519	87.026	4.4302	-5E-04	9	0.8166	1.0902	2.419	85.35426
18	117.2	4.03	-0.65	0.29	117.192	3.4388	5	2.26217	132.0885	1.01796	0	1.018	114.12	3.4689	-4E-04	5	0.759	1.0298	2.2595	113.0651
19	122.8	4.74	1.05	0.27	122.8129	3.8595	8	2.28875	133.3901	1.08466	0	1.0847	112.23	3.8939	0.0006	8	0.7773	0.9809	2.2993	112.8484
20	90.1	3.71	0.53	0.33	90.10649	4.1174	4	2.39515	130.8421	1.15008	0	1.1501	77.348	4.1706	0.0004	4	0.8273	0.9334	2.4224	78.46965
21	90.5	3.59	0.29	0.43	90.50355	3.9667	4	2.38154	130.6122	1.21538	0	1.2154	73.465	4.0207	0.0002	4	0.8304	0.8913	2.4224	75.21202
22	110.3	3.91	-2.19	0.64	110.2732	3.5457	5	2.28918	131.7189	1.28124	0	1.2812	85.067	3.5874	-0.001	5	0.8019	0.8578	2.3392	88.35458
23	146.2	6.55	-1.83	0.38	146.1776	4.4809	9	2.29564	136.1814	1.34933	0	1.3493	107.33	4.5226	-9E-04	9	0.8099	0.8213	2.3519	112.4096
24	69.1	4	-1.83	0.05	69.0776	5.7906	9	2.5828	130.7446	1.41471	0	1.4147	47.828	5.9117	-0.002	3	0.9352	0.7622	2.6726	48.73708
25	57.6	2.78	-1.8	-0.13	57.57797	4.8282	4	2.57529	127.6382	1.47853	0	1.4785	37.943	4.9555	-0.002	4	0.9431	0.7294	2.6855	38.67186
26	38.8	1.68	-1.51	-0.26	38.78152	4.332	4	2.66078	122.9891	1.54002	0	1.54	24.182	4.5111	-0.003	3	0.9914	0.6893	2.8037	24.26094
27	50.6	2.04	-0.28	-0.34	50.59657	4.0319	4	2.55696	125.0584	1.60255	0	1.6026	30.573	4.1638	-4E-04	4	0.9546	0.6728	2.7	31.15485
28	26.2	1.13	-0.27	-0.44	26.1967	4.3135	3	2.78413	119.1305	1.66211	0	1.6621	14.761	4.6057	-8E-04	3	1	0.6366	2.9734	14.76106
29	27.8	1.17	-0.27	-0.56	27.7967	4.2091	4	2.75785	119.5296	1.72188	0	1.7219	15.143	4.4871	-8E-04	3	1	0.6145	2.9576	15.14323
30	24.2	1.02	-0.22	-0.61	24.19731	4.2154	3	2.80334	118.1875	1.78097	0	1.781	12.587	4.5503	-7E-04	3	1	0.5941	3.024	12.58656
31	32.9	1.49	-0.08	-0.7	32.89902	4.529	4	2.72567	121.7097	1.84183	0	1.8418	16.862	4.7976	-2E-04	3	1	0.5745	2.9403	16.86215
32	102	3.82	-0.17	-0.73	101.9979	3.7452	5	2.32907	131.3582	1.90751	0	1.9075	52.472	3.8166	-1E-04	4	0.8901	0.5918	2.4922	55.98128
33	93	3.14	-0.17	-0.71	92.99792	3.3764	5	2.32076	129.6986	1.97236	0	1.9724	46.151	3.4496	-1E-04	4	0.8962	0.5723	2.5	49.23131
34	30.9	1.43	0.5	-0.79	30.90612	4.6269	3	2.75178	121.2566	2.03299	0	2.033	14.202	4.9527	0.0013	3	1	0.5205	3.0063	14.20234
35	45	1.82	0.69	-0.81	45.00845	4.0437	4	2.5937	123.9379	2.09495	0	2.095	20.484	4.2411	0.0012	3	1	0.5051	2.8412	20.48422
36	63.2	3.01	0.75	-0.77	63.20918	4.762	4	2.54369	128.4474	2.15918	0	2.1592	28.275	4.9304	0.0009	3	1	0.4901	2.781	28.27465
37	238.6	2.8	1.17	-0.75	238.6143	1.1734	6	1.70588	131.1582	2.22476	0	2.2248	106.25	1.1845	0.0004	6	0.6636	0.6107	1.8589	136.433
38	261.1	2.72	1.17	-0.85	261.1143	1.0417	6	1.64117	131.1659	2.29034	0	2.2903	113.01	1.0509	0.0003	6	0.6426	0.6088	1.7955	148.9281
39	154.4	2.01	1.07	-0.87	154.4131	1.3017	6	1.86713	127.6713	2.35418	0	2.3542	64.591	1.3219	0.0005	5	0.749	0.5494	2.0669	78.95191
40	86	4.36	1.36	-0.52	86.01665	5.0688	9	2.47764	131.91	2.42013	0	2.4201	34.542	5.2155	0.0012	3	1	0.4372	2.7358	34.54215
41	96.5	4.62	1.5	-0.13	96.51836	4.7867	9	2.42693	132.6148	2.48644	0.0312	2.4552	38.299	4.9132	0.0008	4	0.9883	0.4352	2.6828	38.67899
42	85.9	3.99	1.36	0.3	85.91665	4.644	9	2.44855	131.2583	2.55207	0.0624	2.4897	33.484	4.7862	0.0004	4	1	0.425	2.7191	33.48423
43	77.5	2.99	1.17	0.71	77.51432	3.8574	4	2.41644	128.8962	2.61652	0.0936	2.5229	29.687	3.9921	-1E-04	4	0.9991	0.4197	2.7028	29.71067
44	200.7	7.51	-1.05	0.99	200.6872	3.7421	8	2.15318	137.28	2.68516	0.1248	2.5604	77.334	3.7929	-0.001	4	0.8714	0.463	2.3631	86.63881
45	87.4	3.39	0.31	1.07	87.40379	3.8786	4	2.38392	130.1078	2.75021	0.156	2.5942	32.632	4.0046	-0.002	4	0.9913	0.4111	2.6713	32.88753
46	45.4	1.44	0.88	1.11	45.41077	3.1711	4	2.51763	122.2461	2.81133	0.1872	2.6241	16.234	3.3803	-0.003	3	1	0.4032	2.8574	16.23373
47	49.3	1.76	0.88	1.24	49.31077	3.5692	4	2.5274	123.9153	2.87329	0.2184	2.6549	17.491	3.79	-0.003	3	1	0.3986	2.8628	17.4913
48	40.7	1.74	0.79	1.34	40.70967	4.2742	4	2.64164	123.3642	2.93497	0.2496	2.6854	14.067	4.6063	-0.005	3	1	0.394	2.9896	14.06684
49	33.8	1.65	1.14	1.38	33.81395	4.8796	3	2.7395	122.5229	2.99623	0.2808	2.7154	11.349	5.3541	-0.006	3	1	0.3897	3.1032	11.3491
50	164.4	6.04	0.59	1.43	164.4072	3.6738	8	2.19579	135.8749	3.06417	0.312	2.7522	58.624	3.7436	-0.002	4	0.9136	0.4176	2.4478	63.67363
51	437	4.88	0.61	1.45	437.0075	1.1167	6	1.52874	136.6988	3.13252	0.3432	2.7893	155.55	1.1248	-7E-04	6	0.6281	0.544	1.6951	223.0683
52	411.2	7.09	0.69	1.63	411.2085	1.7242	6	1.70202	137.28	3.20116	0.3744	2.8268	144.34	1.7377	-8E-04	6	0.6997	0.5028	1.8788	193.8839
53	279.2	7.66	0.12	1.7	279.2015	2.7435	8	1.96204	137.28	3.2698	0.4056	2.8642	96.338	2.7761	-0.001	5	0.8155	0.4439	2.1783	115.771
54	62.2	3.11	-5.67	1.8	62.1306	5.0056	4	2.56485	128.6446	3.33412	0.4368	2.8973	20.293	5.2894	-0.014	3	1	0.3652	2.9076	20.29338
55	52.4	1.2	-6.1	1.77	52.32534	2.2933	5	2.37727	121.2577	3.39475	0.468	2.9268	16.718	2.4525	-0.019	4	1	0.3615	2.7639	16.7184
56	75.8	2.3	-6.19	1.68	75.72423	3.0373	5	2.34684	126.9195	3.45821	0.4992	2.959	24.422	3.1827	-0.013	4	1	0.3576	2.7025	24.42236
57	66.8	2.97	-6.29	1.7	66.72301	4.4512	4	2.50619	128.4815	3.52245	0.5304	2.9921	21.123	4.6993	-0.016	3	1	0.3536	2.8604	21.12282
58	59	2.1	-6.38	1.79	58.92191	3.564	4	2.47241	125.642	3.58527	0.5616	3.0237	18.301	3.795	-0.018	3	1	0.3499	2.8479	18.30113
59	79.3	3.4	-6.38	1.82	79.22191	4.2917	4	2.44509	129.8896	3.65022	0.5928	3.0574	24.717	4.499	-0.014	3	1	0.3461	2.7969	24.71749
60	156.7	9.53	-6.38	1.92	156.6219	6.0847	9	2.38875	137.28	3.71886	0.624	3.0949	49.406	6.2327	-0.007	3	1	0.3419	2.6859	49.40552
61	92	3.05	-6.19	1.88	91.92423	3.318	5	2.31838	129.4575	3.78359	0.6552	3.1284	28.174	3.4604	-0.012	4	1	0.3382	2.6787	28.17448
62	129.9	5.48	-6.1	1.8	129.8253	4.2211	9	2.30504	134.587	3.85088	0.6864	3.1645	39.809	4.3501	-0.009	4	1	0.3344	2.6365	39.8089
63	61.3	2.74	-6.19	1.67	61.22423	4.4754	4	2.53297	127.6819	3.91472	0.7176	3.1971	17.925	4.7811	-0.02	3	1	0.331	2.9191	17.92535
64	60.1	1.89	-6	1.59	60.02656	3.1486	4	2.42842	124.9164	3.97718	0.7488	3.2284	17.361	3.372	-0.021	3	1	0.3278	2.8337	17.36146
65	56.9	2.42	-6	1.58	56.82656	4.2586	4	2.53915	126.5914	4.04047	0.78	3.2605	16.19	4.5845	-0.023	3	1	0.3245	2.9411	16.18969
66	42.9	2.06	-6	1.59	42.82656	4.8101	4	2.66238	124.7231	4.10284	0.8112	3.2916	11.764	5.3197	-0.032	3	1	0.3215	3.0893	11.76428
67	55.3	2.36	-5.71	1.76	55.23011	4.273	4	2.54872	126.3382	4.16601	0.8424	3.3236	15.364	4.6216	-0.025	3	1	0.3184	2.9609	15.36407
68	86.7	5.45	-5.62	1.86	86.63121	6.291	9	2.54932	133.5601	4.23279	0.8736	3.3592	24.529	6.6142	-0.016	3	1	0.315	2.914	24.52929
69	71.5	3.52	-5.62	1.94	71.43121	4.9278	4	2.51991	129.8909	4.29773	0.9048	3.3929	19.786	5.2433	-0.02	3	1	0.3119	2.9132	19.78628

70	71.6	3.77	-5.14	2.01	71.53709	5.27	4	2.5417	130.3966	4.36293	0.936	3.4269	19.602	5.6123	-0.019	3	1	0.3088	2.936	19.60185
71	61.8	3.11	-5.14	1.96	61.73709	5.0375	4	2.56875	128.6291	4.42724	0.9672	3.46	16.563	5.4266	-0.023	3	1	0.3058	2.981	16.56333
72	64.4	3.38	-5.05	1.99	64.33819	5.2535	4	2.57063	129.3389	4.49191	0.9984	3.4935	17.131	5.6478	-0.023	3	1	0.3029	2.9814	17.13069
73	114.3	6.91	-4.97	2.01	114.2392	6.0487	9	2.4639	135.9716	4.5599	1.0296	3.5303	31.068	6.3002	-0.013	3	1	0.2997	2.8265	31.06798
74	396.4	14.96	-7.15	2.19	396.3125	3.7748	8	2.00812	137.28	4.62854	1.0608	3.5677	109.78	3.8194	-0.004	8	0.8804	0.343	2.2614	126.9651
75	322.2	15.46	-8.18	2.52	322.0999	4.7998	9	2.14194	137.28	4.69718	1.092	3.6052	88.041	4.8708	-0.005	9	0.9448	0.3141	2.4242	94.21074
76	106.5	6.01	-9.34	2.38	106.3857	5.6493	9	2.4582	134.7768	4.76457	1.1232	3.6414	27.907	5.9141	-0.018	3	1	0.2906	2.84	27.9074
77	41.3	1.09	-9.73	2.64	41.1809	2.6469	4	2.49647	119.9701	4.82455	1.1544	3.6702	9.906	2.9981	-0.051	3	1	0.2883	3.0001	9.90595
78	64.6	1.56	-9.82	3	64.4798	2.4194	5	2.32625	123.6868	4.8864	1.1856	3.7008	16.103	2.6177	-0.032	4	1	0.2859	2.7936	16.10286
79	76.4	2.49	-9.73	3.23	76.2809	3.2643	5	2.36747	127.5182	4.95015	1.2168	3.7334	19.106	3.4908	-0.027	4	1	0.2834	2.8105	19.10634
80	114.7	3.85	-9.51	3.51	114.5836	3.36	5	2.26055	131.6992	5.016	1.248	3.768	29.078	3.5138	-0.018	4	1	0.2808	2.6728	29.07841

1749 & 1751 Malcolm Ave
Los Angeles, CA

CPT Shear Wave Measurements

CPT-2	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
	20.10	19.10	19.74	22.79	866.33	
	40.22	39.22	39.54	39.80	993.40	1163.66
	60.00	59.00	59.21	50.62	1169.73	1818.30
	80.08	79.08	79.24	63.45	1248.82	1560.91

CPT-7						
	20.07	19.07	19.71	29.49	668.52	
	40.03	39.03	39.35	65.56	600.20	544.34
	60.02	59.02	59.23	76.70	772.25	1784.78
	71.34	70.34	70.52	85.17	827.96	1332.48

Shear Wave Source Offset = 5 ft

S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

This software is licensed to: Kehoe Testing and Engineering

Presented below is a list of formulas used for the estimation of various soil properties. The formulas are presented in SI unit system and assume that all components are expressed in the same units.

:: Unit Weight, g (kN/m³) ::

$$g = g_w \cdot \left(0.27 \cdot \log(R_f) + 0.36 \cdot \log(\frac{q_t}{p_a}) + 1.236\right)$$

where g_w = water unit weight

:: Permeability, k (m/s) ::

$I_c < 3.27$ and $I_c > 1.00$ then $k = 10^{0.952-3.04 \cdot I_c}$

$I_c \leq 4.00$ and $I_c > 3.27$ then $k = 10^{-4.52-1.37 \cdot I_c}$

:: N$_{SPT}$ (blows per 30 cm) ::

$$N_{60} = \left(\frac{q_c}{P_a}\right) \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

$$N_{1(60)} = Q_{tn} \cdot \frac{1}{10^{1.1268-0.2817 \cdot I_c}}$$

:: Young's Modulus, Es (MPa) ::

$$(q_t - \sigma_v) \cdot 0.015 \cdot 10^{0.55 \cdot I_c + 1.68}$$

(applicable only to $I_c < I_{c\_cutoff}$)

:: Relative Density, Dr (%) ::

$$100 \cdot \sqrt{\frac{Q_{tn}}{k_{DR}}}$$

(applicable only to SBT$_n$: 5, 6, 7 and 8 or $I_c < I_{c\_cutoff}$)

:: State Parameter, ψ ::

$$\psi = 0.56 - 0.33 \cdot \log(Q_{tn,cs})$$

:: Peak drained friction angle, φ (°) ::

$$\varphi = 17.60 + 11 \cdot \log(Q_{tn})$$

(applicable only to SBT$_n$: 5, 6, 7 and 8)

:: 1-D constrained modulus, M (MPa) ::

If $I_c > 2.20$

$\alpha = 14$ for $Q_{tn} > 14$

$\alpha = Q_{tn}$ for $Q_{tn} \leq 14$

$M_{CPT} = \alpha \cdot (q_t - \sigma_v)$

If $I_c \leq 2.20$

$M_{CPT} = (q_t - \sigma_v) \cdot 0.0188 \cdot 10^{0.55 I_c + 1.68}$

:: Small strain shear Modulus, Go (MPa) ::

$$G_0 = (q_t - \sigma_v) \cdot 0.0188 \cdot 10^{0.55 I_c + 1.68}$$

:: Shear Wave Velocity, Vs (m/s) ::

$$V_s = \left(\frac{G_0}{\rho}\right)^{0.50}$$

:: Undrained peak shear strength, Su (kPa) ::

$N_{kt} = 10.50 + 7 \cdot \log(F_r)$ or user defined

$$S_u = \frac{(q_t - \sigma_v)}{N_{kt}}$$

(applicable only to SBT$_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

:: Remolded undrained shear strength, Su(rem) (kPa) ::

$S_{u(rem)} = f_s$ (applicable only to SBT$_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

:: Overconsolidation Ratio, OCR ::

$$k_{OCR} = \left[\frac{Q_{tn}^{0.20}}{0.25 \cdot (10.50 + 7 \cdot \log(F_r))}\right]^{1.25}$$ or user defined

$OCR = k_{OCR} \cdot Q_{tn}$

(applicable only to SBT$_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

:: In situ Stress Ratio, Ko ::

$$K_0 = (1 - \sin\varphi') \cdot OCR^{\sin\varphi'}$$

(applicable only to SBT$_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

:: Soil Sensitivity, S$_t$ ::

$$S_t = \frac{N_S}{F_r}$$

(applicable only to SBT$_n$: 1, 2, 3, 4 and 9 or $I_c > I_{c\_cutoff}$)

:: Effective Stress Friction Angle, φ' (°) ::

$$\varphi' = 29.5° \cdot B_q^{0.121} \cdot (0.256 + 0.336 \cdot B_q + \log Q_t)$$

(applicable for $0.10 < B_q < 1.00$)

References

• Robertson, P.K., Cabal K.L., Guide to Cone Penetration Testing for Geotechnical Engineering, Gregg Drilling & Testing, Inc., 5th Edition, November 2012

• Robertson, P.K., Interpretation of Cone Penetration Tests - a unified approach., Can. Geotech. J. 46(11): 1337–1355 (2009)

APPENDIX II
LABORATORY TESTING PROCEDURES

Moisture Density

The moisture-density information provides a summary of soil consistency for each stratum and can also provide a correlation between soils found on this site and other nearby sites. The tests were performed using ASTM D 2216-04 Laboratory Determination of water content Test Method. The dry unit weight and field moisture content were determined for each undisturbed sample, and the results are shown on log of exploratory borings.

Shear Tests

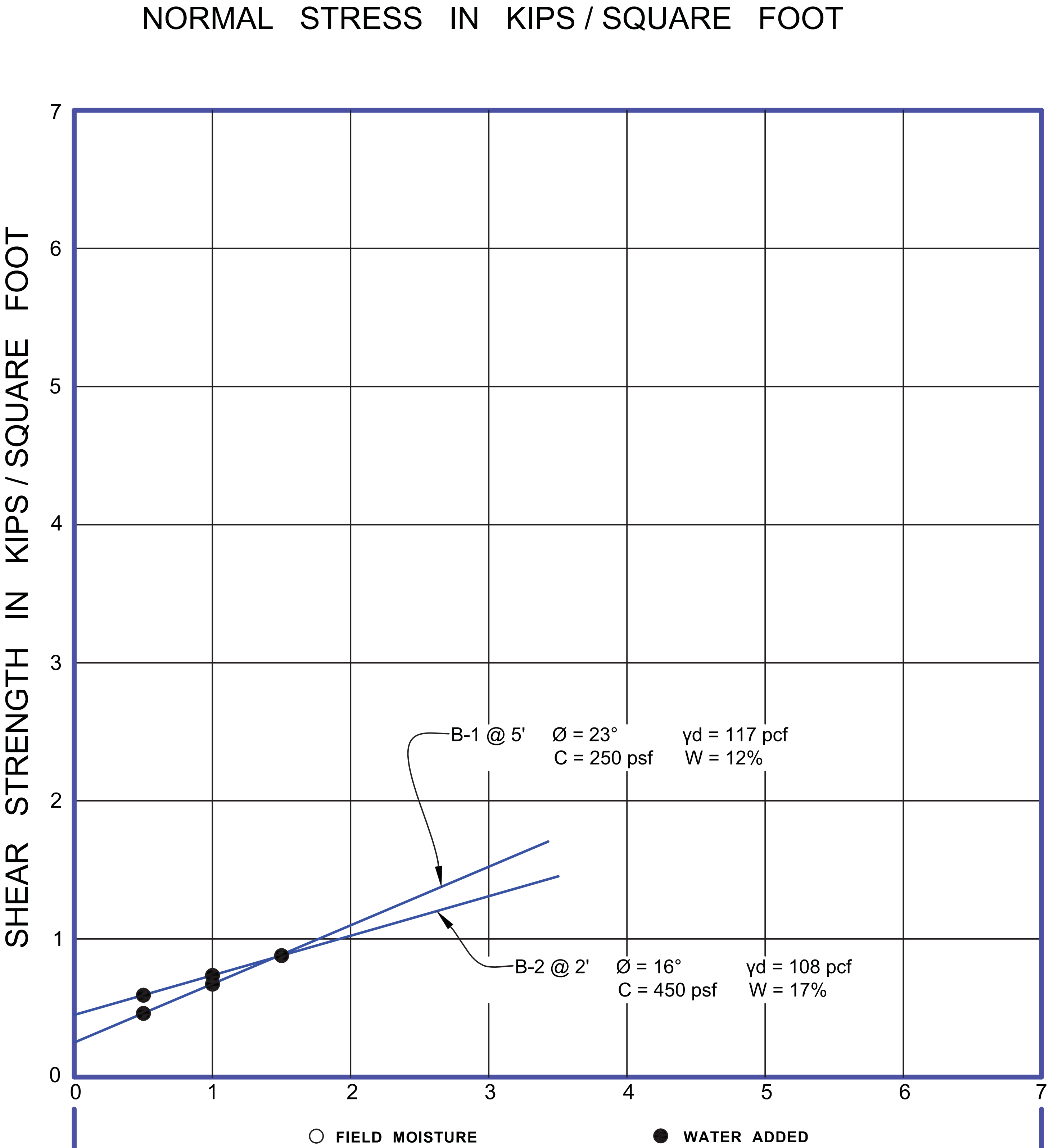
Shear tests were made with a direct shear machine at a constant rate of strain. The machine is designed to test the materials without completely removing the samples from the brass rings. The rate of shear was determined through determination of the rate of consolidation of the foundation bearing materials. Considering that such soils are fine grained in nature with a t90 value of less than 27 seconds, the rate of shearing was selected as 0.005 inches per minute.

A range of normal stresses was applied vertically, and the shear strength was progressively determined at each load in order to determine the internal angle of friction and the cohesion. The tests were performed using ASTM D 3080-04 Laboratory Direct Shear Test Method. The Ultimate shear strength results of direct shear tests are presented on Figure No. II-1 within this Appendix.

Consolidation

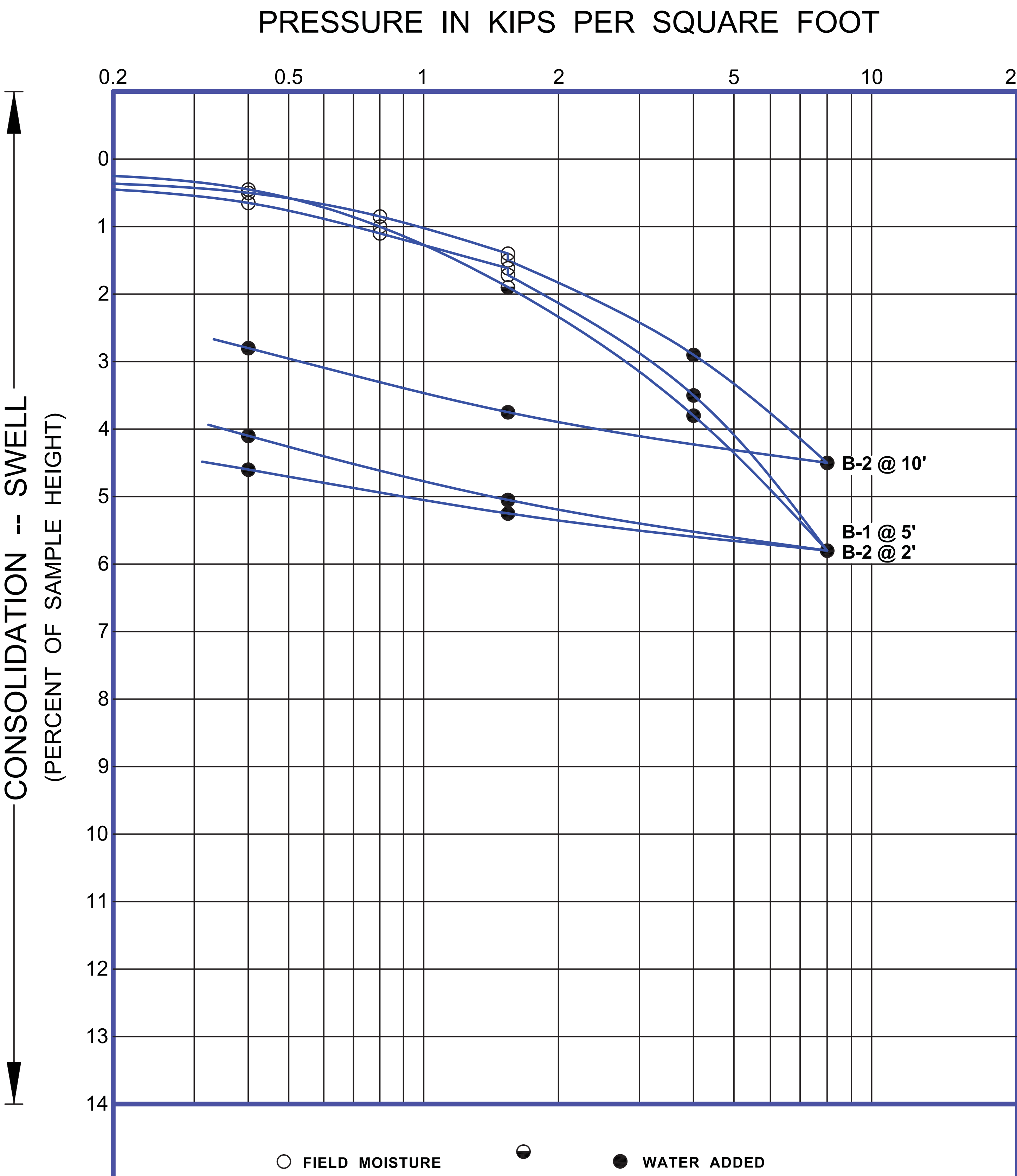
The apparatus used for the consolidation tests is designed to receive the undisturbed brass ring of soil as it comes from the field. Loads were applied to the test specimen in several increments, and the resulting deformations were recorded at time intervals. Porous stones were placed in contact with the top and bottom of the specimen to permit the ready addition or release of water. ASTM D 2435-04 Laboratory Consolidation Test Method.

Undisturbed specimens were tested at the field and added water conditions. The test results are shown on Figure No. II-2 within this Appendix.



DIRECT SHEAR TESTS

JOB NAME :	Proposed Multifamily Residential Building Project 1749 & 1751 Malcolm Avenue & 1772 Glendon Avenue Los Angeles, CA 90024	JOB No. 15-363-02
Applied Earth Sciences	GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS www.aessoil.com (818) 552-6000	FIGURE No. II - 1



SWELL - CONSOLIDATION TESTS

JOB NAME :	Proposed Multifamily Residential Building Project 1749 & 1751 Malcolm Avenue & 1772 Glendon Avenue Los Angeles, CA 90024	JOB No. 15-363-02
Applied Earth Sciences	GEOTECHNICAL . GEOLOGY . ENVIRONMENTAL ENGINEERING CONSULTANTS www.aessoil.com (818) 552-6000	FIGURE No. II - 2

APPENDIX III

SELECTED PHOTOGRAPHS TAKEN DURING FIELD EXPLORATION AND OFFICE DETAILED STUDY

Photo 1- Boring 3 drilling, April 24, 2015, 1749 Malcolm Avenue

Photo 2: Shant Minas, Engineering Geologist, Logging Core Samples from B-3. Note Large Tree and surrounding earth mound which complicated drilling in the area north of B-3.

Photo 3: CPT testing in street, May 12, 2015. View is to south along Malcolm Avenue.

Photo 4: CPT testing, May 12, 2015. In this photo, CPT-11 is being advanced while location for CPT-13 is being hand augered upper five feet for utilities.

Photo 5: Detailed Core Sample Logging in Office, May 19, 2015, Steve Miller, senior geologist alongside Shant Minas.

Appendix IV – Miscellaneous Attachments

Geomorphic Terrace Map (Miles Kenney)

Mactec Geophysical Anomaly Map

Kenney Right vs. Left Lateral Model, Fault Map, 2014

Street Closure, Encroachment and Excavation Permits

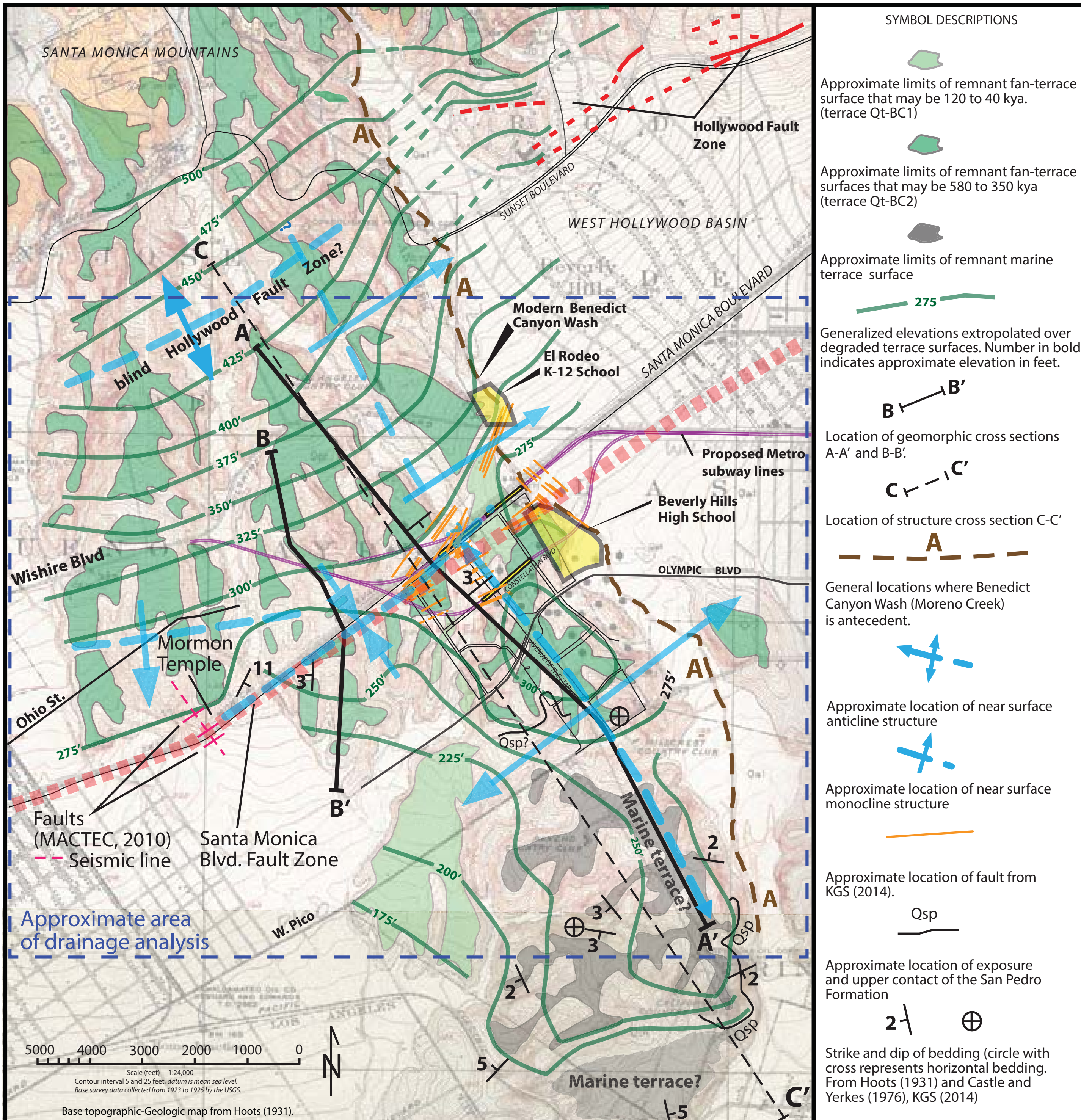
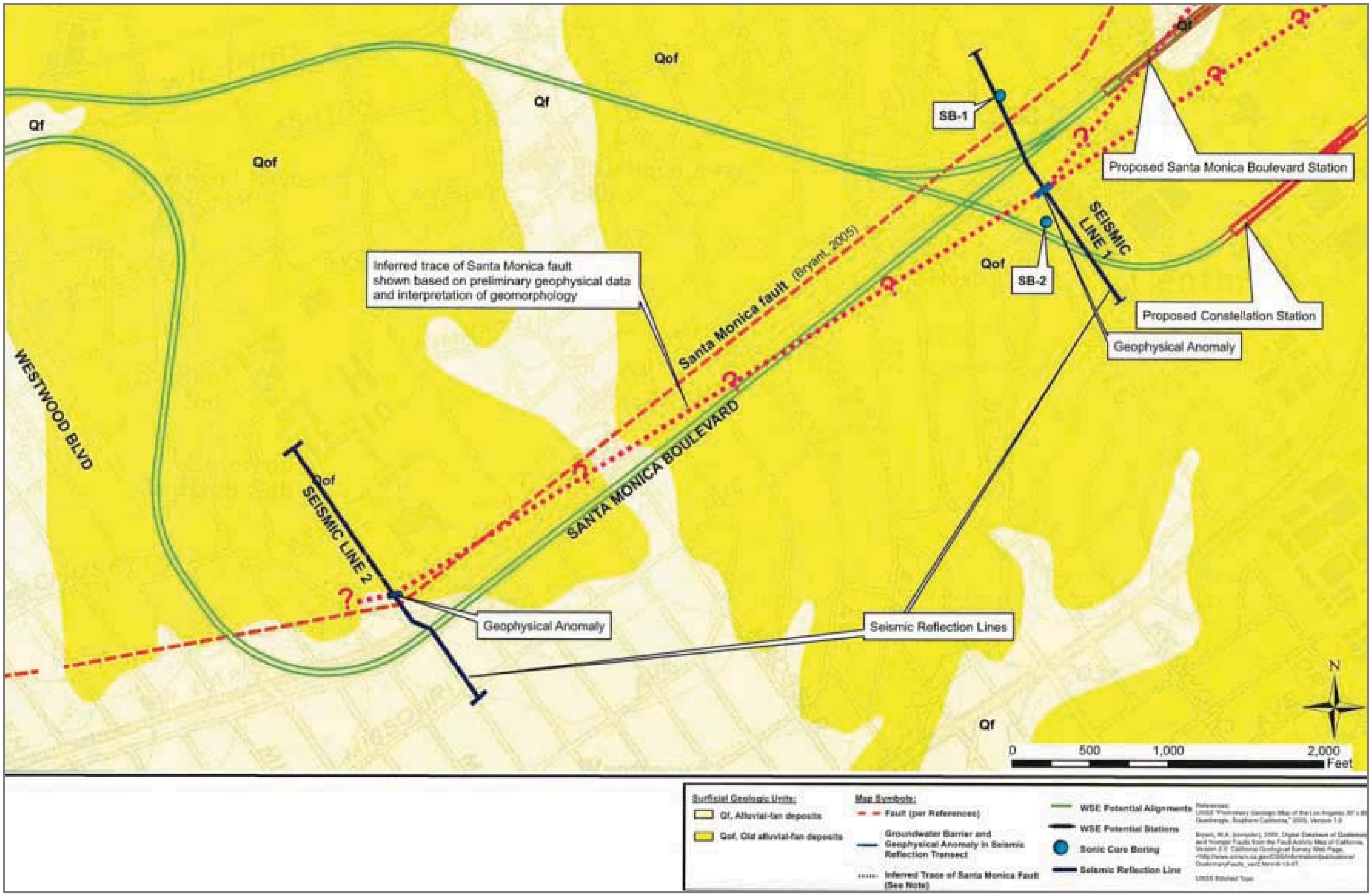

SANTA MONICA MOUNTAINS
Hollywood Fault Zone
SUNSET BOULEVARD
WEST HOLLYWOOD BASIN
SANTA MONICA BOULEVARD
Modern Benedict Canyon Wash
El Rodeo K-12 School
Proposed Metro subway lines
Beverly Hills High School
OLYMPIC BLVD
blind Hollywood Fault Zone?
Wishire Blvd
Mormon Temple
Ohio St.
Faults (MACTEC, 2010)
Seismic line
Santa Monica Blvd. Fault Zone
Approximate area of drainage analysis
W. Pico
Marine terrace?
Qsp?
Qsp
500′
475′
450′
425′
400′
375′
350′
325′
300′
275′
250′
225′
200′
175′
A
A′
B
B′
C
C′
5000 4000 3000 2000 1000 0
Scale (feet) - 1:24,000
Contour interval 5 and 25 feet, datum is mean sea level.
Base survey data collected from 1923 to 1925 by the USGS.
N
Base topographic-Geologic map from Hoots (1931).
SYMBOL DESCRIPTIONS
Approximate limits of remnant fan-terrace surface that may be 120 to 40 kya. (terrace Qt-BC1)
Approximate limits of remnant fan-terrace surfaces that may be 580 to 350 kya (terrace Qt-BC2)
Approximate limits of remnant marine terrace surface
275
Generalized elevations extropolated over degraded terrace surfaces. Number in bold indicates approximate elevation in feet.
B B′
Location of geomorphic cross sections A-A′ and B-B′.
C C′
Location of structure cross section C-C′
A
General locations where Benedict Canyon Wash (Moreno Creek) is antecedent.
Approximate location of near surface anticline structure
Approximate location of near surface monocline structure
Approximate location of fault from KGS (2014).
Qsp
Approximate location of exposure and upper contact of the San Pedro Formation
2
Strike and dip of bedding (circle with cross represents horizontal bedding. From Hoots (1931) and Castle and Yerkes (1976), KGS (2014).

Figure 7: Fault Studies during Draft EIS/EIR



City of Los Angeles
Dept. of Public Works
Bureau of Engineering
78-3.652 (R9-89)

APPLICATION / PERMIT FOR EXCAVATION
IN OR ADJACENT TO PUBLIC STREETS
UNDER CHAPTER 6, ARTICLE 2, LOS ANGELES MUNICIPAL CODE

THIS PERMIT IS NOT VALID UNLESS REGISTER VALIDATED OR RECEIPT SHOWN

JOB ADDRESS **1751 Malcolm Ave**			
PROPERTY OWNER/CONTRACTOR/AGENT FOR **Harkham Family Enterprises, LP (Dan Harkham)**			
ADDRESS **857 S San Pedro St #300**			
CITY **Los Angeles**			
STATE	**CA**	ZIP CODE	**90014**
TELEPHONE	**310-553-6900**		
Purpose of Excavation **Soilboring**			

WORK ORDER NO.	LIAB. INS. C.A. NO.	INSURANCE EXPIRES
	78807	2015-06-19 00:00:00.0
"A" PERMIT NO.	SURETY BOND C.A. NO.	MISC. RECEIPT NO.
WAIVER REC. NO.	MISC. CASH BOND NO.	

RECEIPT NO.

This permit is for the CPT-boring at six locations on Malcolm Ave. (CPT-1, CPT-2, CPT-3, CPT-8, CPT-9, CPT-10) Call for pre inspection before any work is done. Traffic Control per watch manual and back fill per Green Book standards

	QTY	RATE	SUBTOTAL
E-permit Excavation	1	$425.00	$425.00
A-Permit Basic Fee	0	$265.00	$0.00
Revocable Permit	0	$0.00	$0.00
E-Permit Special Eng Fee	0.00	$145.00	$0.00
Special Insp Reg Rate / Hr (4 hrs min.)	8	$95.00	$760.00
Tie-Back (Less than 20 ft. below street surface)	0	$605.00	$0.00
Tie Back (20 ft. or more below street surface)	0	$605.00	$0.00
Left De-Tensioned Anc Rods/Ea	0	$2,040.00	$0.00
Street Damage Restoratn-SDRF	0	$0.00	$0.00
Slurry Seal Damage Restrtn Fee-SSDRF	0 sq. ft.		
SDRF/SSDRF Eng Admin	0	$18.00	$0.00
2% SURCHARGE			$23.70
7% SURCHARGE			$82.95
TOTAL			$1,291.65

BY **Oscar Gutierrez** DATE **04/21/2015**

BUREAU OF ENGINEERING

NOTICE TO PERMITTEE

PERMIT MUST BE ON JOB AT ALL TIMES.
THIS PERMIT EXPIRES 6 MONTHS FROM ISSUANCE UNLESS WORK HAS COMMENCED. (LAMC 62.02)
KEEP SIDEWALKS AND GUTTERS CLEAR.

INSPECTION IS REQUIRED

I hereby agree to observe all requirements of the Municipal Code of the City of Los Angeles, all amendments thereto, and any special requirements made part of this permit.

Call Bureau of Contract Administration for inspection prior to commencing work: (213) 485-5080.

X

PRINT NAME

Harkham Family Enterprises, LP (Dan Harkham)

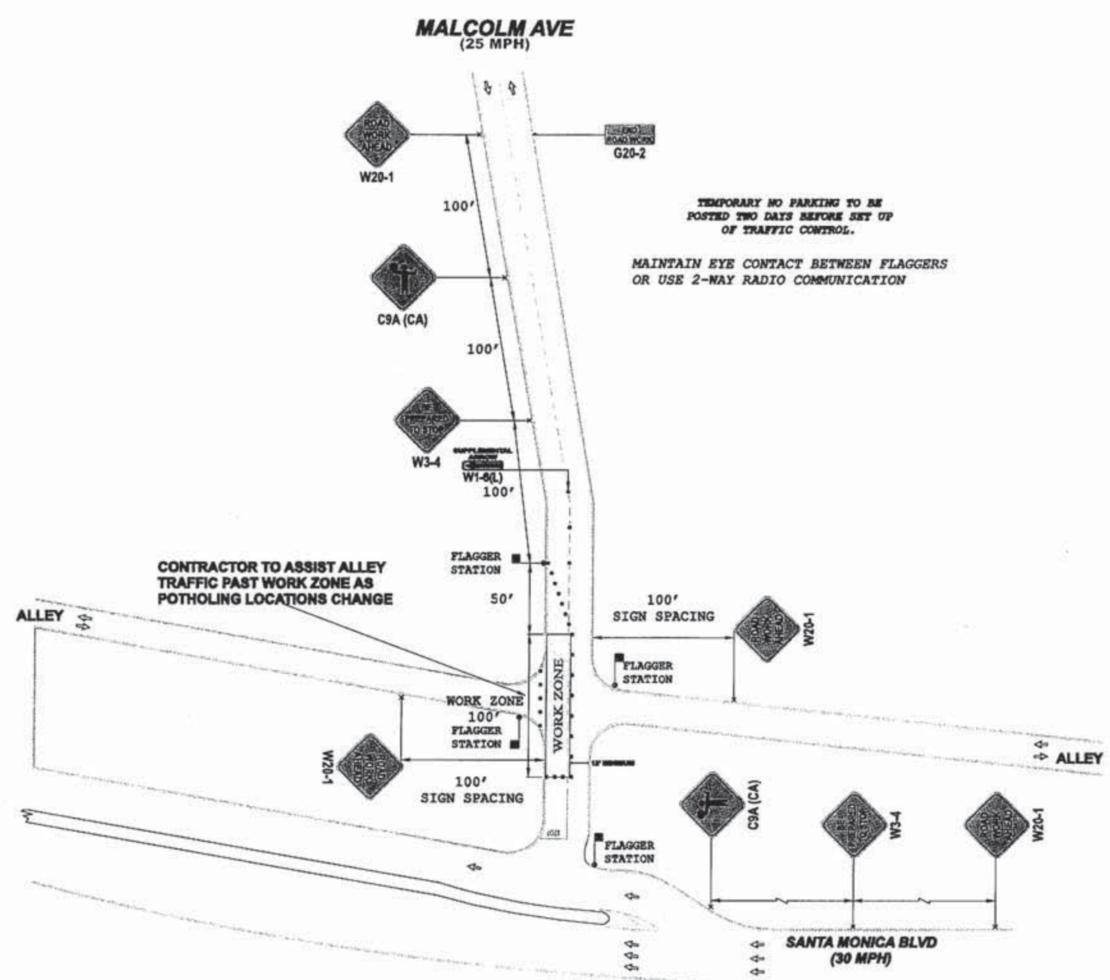
STREETS AFFECTED

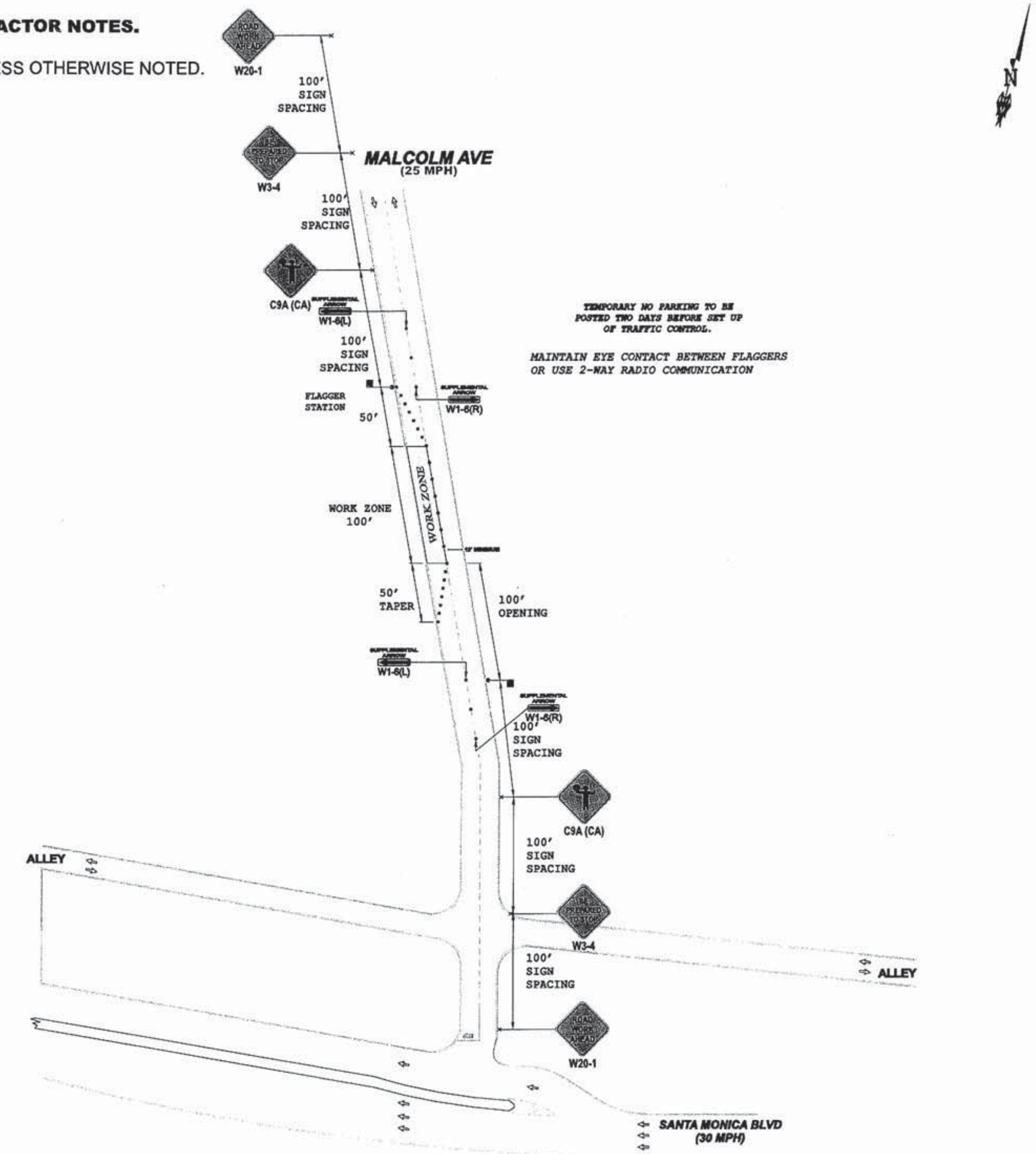
JOB ADDRESS
1751 Malcolm Ave

SPECIAL DEPOSIT PERMIT NO.
E-1585-0023

SEE PAGE ONE FOR CONTRACTOR NOTES.

ALL CONE SPACING SHALL BE 25' UNLESS OTHERWISE NOTED.





DIGALERT
1-800-227-2600

CITY OF LOS ANGELES

TEMPORARY TRAFFIC CONTROL PLAN

PROJECT NAME: 1751 MALCOLM AVENUE			
PRIME CONTRACTOR: SINANIAN			
PHONE: (818) 679-3404	DATE: 4-16-2015	TPRTS LICENCE # 787313 C31/D42	BRANCH INLAND EMPIRE
	NOTES:		ORIGINAL

REVIEW BY CITY STAFF

OFFICE	INITIAL	DATE
ENGINEERING DIVISION MANAGER		
LAND DEVELOPMENT		
PLANNING		
TRANSPORTATION		
PARKS AND COMMUNITY SERVICES		
SPECIAL DISTRICTS		
STORM WATER MANAGEMENT PRGM		

NO.	DESCRIPTION OF REVISION	DATE	CITY APPROVED

CITY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS

RECOMMENDED BY:
ENGINEER, TRAFFIC DIVISION — DATE
APPROVED BY:
TRAFFIC DIVISION — DATE
PERMIT ENGINEER OPERATIONS SUPPORT DIVISION — DATE

SEAL

TPR TRAFFIC SOLUTIONS
Toll free: 866-537-1260

TPR TRAFFIC SOLUTIONS
10763 POPLAR AVE
FONTANA, CA 92337
t: (855) 326-5953 f: (909) 350-8950
Calif. Contractors Lic.
787313 C31 / D42

APPROVED BY:
TRAFFIC ENGINEER
DATE:
RCE NO.

DESIGNED CP	NOT TO SCALE	RECOMMENDED
DRAWN CP		SHEET 2 OF 2
CHECKED		DRAWING NO. 15 — 038