

**GEOTECHNICAL INVESTIGATION
ESTUARY PARK
ATHLETIC FIELD COMPLEX RENOVATIONS
SINGLETON AVENUE AND MOSLEY AVENUE
ALAMEDA, CALIFORNIA**

for

**Mr. Corbin Schneider
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by

**Cleary Consultants, Inc.
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May 2015

May 4, 2015
Project No. 1369.1
Ser. 4715

Mr. Corbin Schneider
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2455 The Alameda, Suite 200
Santa Clara, CA 95050

**RE: GEOTECHNICAL AND GEOLOGIC HAZARDS INVESTIGATION
ESTUARY PARK ATHLETIC FIELD COMPLEX RENOVATIONS
SINGLETON AVENUE AND MOSLEY AVENUE
ALAMEDA, CALIFORNIA**

Dear Mr. Schneider:

As authorized, we have performed a geotechnical and geologic hazards investigation for the athletic field complex renovation project at Estuary Park in Alameda, California. The accompanying report presents the results of our field investigation, laboratory testing and engineering analyses. The site and subsurface conditions are discussed and findings and recommendations for the soil and foundation engineering aspects of the project design and the evaluation of potential geologic hazards are presented. The recommendations presented in this report are contingent upon our review of the grading and foundation plans for the proposed new construction and observation/testing of the earthwork and foundation installation phases of the project.

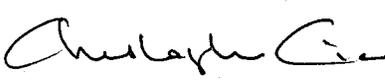
We refer you to the text of the report for detailed recommendations. If you have any questions concerning our findings, please call.

Yours very truly,

CLEARY CONSULTANTS, INC.


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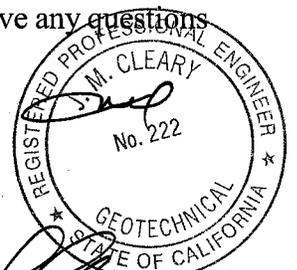


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INTRODUCTION

This report presents the results of our geotechnical investigation for the athletic field complex renovation project at Estuary Park in Alameda, California. The approximate location of the site is shown on the Site Vicinity Map, Drawing 1. The purpose of this investigation was to explore the soil conditions in the planned new construction areas and develop recommendations for the soil and foundation engineering aspects of the project design. We have also performed a geologic and seismic hazards assessment for the project as part of the geotechnical investigation.

As indicated on the site plan provided by Verde Design dated April 28, 2015, a new modular concession building, two modular restroom buildings, synthetic turf soccer and baseball fields, chain link fence dugouts, bleachers, a backstop, a trash enclosure, playground, mounded turf (natural grass) play area and a dog park will be constructed. The existing parking lot located near the center of the project site and the basketball courts near the east side of the site will be reconstructed. The project will also include the installation of concrete and AC walkways, fencing, benches, pathway lighting, tall field lighting (60 feet high) and underground utilities.

SCOPE

As outlined in our proposal agreement dated December 5, 2014, the scope of our services for this investigation has included:

A. Geotechnical Investigation

1. A site reconnaissance by our staff and review of relevant published and unpublished geologic literature and maps.
2. A subsurface investigation including the drilling and sampling of 10 borings in the general area of the planned Athletic Fields Complex improvements, and two cone penetrometer soundings (CPT's) in the vicinity of the planned concession and restroom buildings.
3. Laboratory testing of samples obtained from the borings.
4. Engineering analysis of the field and laboratory data.
5. Preparation of this geotechnical investigation and geologic and seismic hazards assessment report for use in the project design and construction. The report includes findings and recommendations for the following:
 - a) Geologic and seismic setting of the site and surrounding area, including research and review of available geologic/seismic reports and maps.
 - b) 2013 CBC seismic design criteria.
 - c) Site preparation, fill placement and grading, including chemical-treatment soil stabilization and aggregate base sections for new synthetic turf fields.

- d) New modular Concession/Restroom Buildings, dugouts, bleacher, seatwall, trash enclosure, backstop, light post, fencing, basketball post, landscape retaining wall foundation type(s), and applicable soil and foundation engineering design criteria.
- e) Estimated foundation settlements.
- f) Support of interior and exterior concrete slabs-on-grade (including subgrade/pad preparation).
- g) Treatment of expansive soils, as required.
- h) Backfill and compaction of utility trenches.
- i) Lateral earth pressures and equivalent fluid pressures for landscape retaining walls, and recommendations for retaining wall backdrainage.
- j) Flexible pavement sections.
- k) Any other unusual design or construction conditions encountered in the investigation.

B. Geologic and Seismic Hazards Assessment

The geologic and seismic hazards assessment portion of our report for the project consists of the following:

1. Discussion of geologic and seismic conditions containing data on an assessment of the nature of the site and potential earthquake damage including:
 - a. Regional geology and seismic conditions and historical information on the seismicity of the local and regional area.
 - b. Location of known active and potentially active faults near the site, as well as nearby inactive faults
2. Maximum considered earthquake ground motion for the site in accordance with the California Building Code, 2013 Edition, requirements.
3. Potential site impacts related to faulting, liquefaction, lateral spreading, seismic settlement and differential compaction, landsliding, flooding, and dam failure inundation with recommended mitigation measures, where appropriate.

This report has been prepared for the specific use of the City of Alameda Recreation and Parks and its consultants in accordance with generally accepted geotechnical engineering principles and practices. No other warranty, either expressed or implied, is made. In the event that any substantial changes in the nature or location of the project are planned, the conclusions and recommendations of this report shall not be considered valid unless such changes are reviewed and the conclusions of this report modified or verified in writing. Any use or reliance of this report or the information herein by a third party shall be at such party's sole risk.

It should also be recognized that changes in the site conditions may occur with the passage of time due to environmental processes and/or acts of man, and that changes in building codes, the state of practice or new information may require modifications in the recommendations

presented herein. Accordingly, neither the client, nor any other party should rely on the information or conclusions contained in this report after three years from its date of issuance without the express written consent of Cleary Consultants, Inc.

METHOD OF INVESTIGATION

The subsurface investigation was performed on February 18, 2015 under the guidance of our staff geologist, Jennifer Hedvall, using truck-mounted hollow stem auger drilling equipment. A total of 10 borings were drilled in the project area; three borings were drilled within the existing grass baseball field, five borings were drilled within the vicinity of the existing soccer field and planned Concession/Restroom Building, one boring was drilled in the vicinity of the planned Restroom Building (east), and one boring was drilled in the vicinity of the planned new pathway and existing basketball courts. The borings were drilled to a maximum depth of 15.0 feet at the locations shown on Drawings 4 Site Plan-West and Drawing 5 Site Plan-East.

Two cone penetrometer soundings (CPT's) were also performed by Gregg Drilling on February 20, 2015 to a maximum depth of 45 feet in the vicinity of the planned new Concession and Restroom Buildings as shown on Drawings 4 and 5. The location of the CPT-1 and CPT-2 were also performed adjacent to companion soil borings EB-5 and EB-9 since the upper five feet of the CPT holes require hand angering (no sampling) before the test. Soil sampling was performed in CPT-1 at depths of 20, 28 and 40 feet, and in CPT-2 at depths of six, 24 and 42 feet for soil classification purposes in our lab. The results of the cone penetrometer soundings are included in Appendix A of this report.

A key describing the soil classification system and soil consistency terms used in this report is presented on Drawing 6 and the soil sampling procedures are described in Drawing 7. The logs of the borings are presented on Drawings 10 through 19.

The borings were located in the field by pacing, taping and interpolation of the features shown on the site plan provided us. These locations should be considered accurate only to the degree implied by the methods used.

Samples of the soil materials from the borings were returned to our laboratory for classification and testing. The results of moisture content, dry density, percent finer than No. 4 and No. 200 sieves, plasticity index and free swell testing are shown on the boring logs. The laboratory test procedures followed during this investigation are summarized on Drawings 8 and 9. Drawing 20 summarize the results of the plasticity index testing.

As a basis for chemical stabilization recommendations for the synthetic turf fields, bulk samples of the near-surface soils were obtained for R-Value testing (California Test Method 301-F). Representative bulk samples collected from the upper one and one-half feet of the borings were tested in both their untreated condition and with the addition of five percent by dry weight of a mixture of 50 percent Quicklime and 50 percent Portland cement. Drawings 21 and 22 present the results of the R-Value testing. Drawing 23 presents the results of soil corrosivity testing performed on composite samples of the surficial soils collected from the borings.

A list of references consulted during the investigation is included at the end of the text.

SITE CONDITIONS

A. Surface

The relatively level, eight acre Estuary Park Athletic Field Complex is located on the north side of Mosely Avenue on Alameda Island. The park includes an existing grass baseball field, bleachers and backstop, soccer field, open grass area, asphalt-paved pathways, asphalt

basketball courts and a parking lot. The site was previously used by the U.S. Navy but has been dormant and unused for many years.

The north side of the park is bordered by large warehouse buildings, docks of the U.S. Coast Guard, and the Oakland/Alameda Estuary channel. The south side of the site is bordered by Mosely Avenue with a vacant Navy Housing subdivision beyond to the south. The west side of the park is bordered by a dirt boat trailer lot, and a retention pond borders the east side of the site. A chainlink fence surrounds the north, east and west sides of the site.

Vegetation at the site consists of several medium to large trees, which generally border the playfields along the site perimeter, and grass turf within the existing playfields. The asphalt-paved pathways throughout the site were significantly weathered, distressed, buckled and uneven with the edges misaligned likely due to settlement or displacement of the underlying soils. Evidence of an old fissure, which crosses the AC walk, can be traced for about 15 feet on either side of the walkway.

The site is approximately 12 feet above mean sea level, with the nearest northwest side of the park (baseball field) approximately 130 feet from the Oakland/Alameda Estuary water's edge.

B. Subsurface

EB-1 through EB-10, drilled in the vicinity of the planned new Athletic Field Complex improvements, encountered approximately three and one-half to six feet of predominantly loose to medium dense clayey sand fill over zero to three feet of loose silty sand. These loose granular soils were further underlain by soft silty clay (Bay Mud) to a depth of approximately 38 to 42 feet over dense sand and stiff soil to a depth of 45 feet based on the CPT results. A layer of orange plastic was observed in a number of the borings at depths of three to four feet.

The near-surface fill soils encountered in the borings are considered to have a low to moderate expansion potential based on their plasticity characteristics (plasticity indices of 11 to 13 percent) and the free swell test data (free swells of 30 to 50 percent).

The attached boring logs and related information depict subsurface conditions only at the specific locations shown on Drawings 4 and 5 and on the particular dates designated on the logs. Soil conditions at other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in a change of subsurface conditions at these locations due to environmental changes.

C. Groundwater

Groundwater was measured in the borings during drilling at depths of seven to nine feet. The borings were only open for a short period of time and this may not have been sufficiently long to establish the stabilized water table conditions. It should be noted that fluctuations of localized perched groundwater and the regional groundwater level can occur due to such factors as variations in rainfall, temperature, runoff, irrigation, and other factors not evident at the time our measurements were made and reported herein.

Maximum groundwater level in the site vicinity is shown to be approximately five feet below the ground surface based on the depth to groundwater contours provided on Seismic Hazard Zone Report 081 "Depth to Historically High Groundwater, Oakland West Quadrangle." A conservative groundwater depth of five feet was used for the analysis of liquefaction potential and seismically induced settlement at the site.

GEOLOGY AND SEISMICITY

The site is situated in Alameda on the south shore of the Oakland Inner Harbor. Regional geologic mapping by Dorothy H. Radbruch (1957 and 1959) indicates that the site vicinity is underlain by Quaternary age artificial fill and to have been a former tidal flat area.

The San Francisco Bay Area is recognized by geologists and seismologists as one of the most active seismic regions in the United States. The three major fault zones which pass through the Bay Area in a northwest direction have produced approximately a dozen earthquakes per century strong enough to cause structural damage. The faults causing these earthquakes are part of the San Andreas fault system, a major rift in the earth's crust that extends for at least 450 miles along the California Coast and includes the San Andreas, Hayward and Calaveras faults. The site is located approximately 8.1 miles southeast of the San Andreas fault and approximately 4.8 miles west of the Hayward fault and 15.2 miles northwest of the Calaveras fault, respectively.

Since the early 1800's, major earthquakes have been recorded along the San Andreas, Hayward and Calaveras fault zones (Toppozoda et al, 2000). In 1861, an earthquake having a Richter magnitude of approximately 6.5 was reported on the Calaveras fault. The presumed epicenter of this earthquake was located approximately 19 miles southeast of the site. In 1984, an earthquake having a Richter magnitude of approximately 6.1 was reported on the Calaveras fault near Mt. Hamilton. The epicenter of this earthquake was located approximately 47 miles southeast of the site.

In 1868, an earthquake having a Richter magnitude of approximately 7.0 was recorded along the Hayward fault. This earthquake opened fissures at random locations along the fault, from San Pablo to Mission San Jose. The presumed epicenter of the 1868 earthquake is located approximately 12 miles southeast of the site. The San Francisco Earthquake of 1906 had a Richter magnitude of approximately 8.3 and the epicenter of this earthquake (Toppozoda et

al, 2000) was located approximately 13 miles southwest of the site; also, the San Andreas fault produced earthquakes having approximate magnitudes of 7.4 and 6.6 in 1838 and 1865, the presumed epicenters of which are located about 35 miles southeast and 46 miles southeast of the site.

An earthquake with Richter magnitude 5.4 experienced on the Concord fault in 1955 had its epicenter approximately 18 miles northeast of the site. Another damaging earthquake with Richter magnitude 5.3 occurred in 1957 on the San Andreas fault in Daly City, causing approximately one million dollars in damage. The epicenter of this earthquake was about 13 miles southwest of the site. Two earthquakes in 1980, along traces of the Greenville fault, had their epicenters approximately 28 miles northeast of the site. These 1980 earthquakes had Richter magnitudes of 5.5 and 5.8. In addition, numerous earthquakes of magnitudes 4.0 or greater have been recorded throughout the Bay Area along the San Andreas, Hayward and Calaveras faults. On October 17, 1989, the Loma Prieta earthquake, which had its epicenter 56 miles southeast of the site and a Moment Magnitude of 6.9, produced damage at widespread locations throughout the Bay Area. The subject property is within an area which experienced liquefaction-induced damage during the earthquake, including structural damage and fissures or lateral spreading (Seed et. al., 1998).

On August 24, 2014, a Magnitude 6.0 earthquake occurred in the vicinity of the West Napa fault near American Canyon in Napa County; this earthquake, which had its epicenter approximately 30 miles northwest of the site, caused extensive damage in the City of Napa and south Napa County.

The distances between the site and the capable segments of the above faults, as well as other significant faults within a radius of 60 miles from the site, was determined using the USGS Earthquake Hazards Program 2008 USGS National Seismic Hazard Maps – Fault Parameters, as presented below in Table 1:

TABLE 1 - Summary of Significant Earthquake Faults Capable of Generating Strong Ground Shaking at the New Athletic Field Project at Estuary Park in Alameda ^{(1), (2)}

Earthquake Generating Fault	Approximate Distance and Direction to Generating Fault (miles)	Maximum Earthquake (Moment Magnitude)
Hayward-Rodgers Creek (RC+HN+HS)	4.8 E	7.3
N. San Andreas (SAO+SAN+SAP+SAS)	13.3 NW	8.1
Mount Diablo Thurst	14.8 SE	6.7
Calaveras (CN+CC+CS)	15.2 SE	7.0
San Gregorio Connected	17.5 SW	7.5
Green Valley Connected	17.9 NE	6.8
Monta Vista-Shannon	24.4 SW	6.5
Greenville Connected	25.6 SE	7.0
West Napa	26.0 NE	6.7
Great Valley 5, Pittsburg Kirby Hills	28.7 NE	6.7
Point Reyes	31.8 NW	6.9
Hunting Creek-Berryessa	46.0 NE	7.1
Zayante-Vergales	51.3 SW	7.0
Maacama-Gerberville	58.6 NE	7.4
Monterey Bay-Tularcitos	60.6 SW	7.3

⁽¹⁾ USGS Earthquake Hazards Program 2008 USGS National Seismic Hazard Maps – Fault Parameters, ran April 27, 2015

⁽²⁾ Site Latitude: 37.7896°N; Site Longitude: 122.2868°W

The historical seismicity of the greater San Francisco Bay area and surrounding regions is presented on Drawing 3, Regional Earthquake Epicenter Map.

Similar to most of the San Francisco Bay Area, it is reasonable to assume that the new construction will be subjected to a moderate to large earthquake from one of the above-mentioned faults during its lifetime. During such an earthquake, very strong ground shaking is likely to occur at the site.

GEOLOGIC AND SEISMIC HAZARDS EVALUATION

A. Fault Offset Hazard

Based on our site reconnaissance, field exploration and review of existing geologic information, we conclude that there are no known active or potentially active faults crossing the site. Also, the site is not located within an Alquist-Priolo Earthquake Fault Zone as defined by the State of California (Revised Official Map, January 1982). Therefore, the hazard resulting from surface rupture or fault offset is considered low.

B. Ground Shaking Hazards

1. Strong Ground Shaking

Very strong ground shaking is likely to occur during the lifetime of the planned new Athletic Field Complex improvements as a result of movement along one or more of the regional active faults discussed above. The improvements (i.e. concession/restroom, dugouts) will need to be designed and constructed in accordance with current standards of earthquake-resistant construction. Ground shaking during an earthquake could also cause furnishings within structures which are not rigidly attached to undergo movement with respect to the structure. Design measures that minimize such potential movement and also minimize the adverse effects of such movement where they cannot be prevented should be utilized.

2. Soil Liquefaction

Liquefaction is a phenomenon in which saturated, essentially cohesionless soils lose strength during strong seismic shaking and may experience horizontal and vertical movements. Soils that are generally most susceptible to liquefaction are clean, loose,

saturated, uniformly graded, fine-grained sands and silts that lie within roughly 50 feet of the ground surface.

The soils encountered in the exploratory borings generally consisted of up to six feet of loose to medium dense clayey sand and silty sand overlying soft silty clay (Bay Mud) to 38 to 42 feet in turn overlying dense sand and very stiff clay to the maximum depth explored of 45 feet.

CPT-1 (Concession/Restroom Building) and CPT-2 (Restroom Building-East) were analyzed for liquefaction-induced settlement using the LiquefyPro computer program (Version 5.0) and a factor of safety (FOS) of 1.3 per CGS Special Publication 117A. The assumed high groundwater depth used in the analysis was five feet.

LiquefyPro evaluates liquefaction potential and calculates the settlement of saturated and unsaturated deposits due to seismic loads using SPT blowcount, total unit weight, fines content, peak horizontal acceleration and earthquake moment magnitude data. The program is based on the most recent publications of the NCEER Workshop and SP117 Implementation.

The Athletic Field Complex is mapped within the boundary of an area of regional liquefaction potential (State of California Seismic Hazard Zones Map, Oakland West Quadrangle, 2003).

Based on the results of our analysis, the theoretical liquefaction-induced settlement is on the order two and one-half inches, using the calculated peak ground acceleration ($PGA_M = 0.515$) for the site as specified in Item 20 of CGS Note 48 (2013), and the Tokimatsu and Seed calculation method with magnitude scaling correction. However, as discussed subsequently in the report, ground lurching and lateral spreading are more significant design concerns for the planned site improvements.

3. Soil Densification

The recognized procedures for evaluation of seismically-induced settlement in dry sandy soils (Tokimatsu and Seed, 1987; Pradel, 1998) are considered most applicable to non-cohesive loose clean sands with less than 5 percent fines (Day, 2002). The upper clayey sand and silty sand layers encountered in EB-5 and EB-9 (Companion borings to CPT-1 and CPT-2) were also conservatively analyzed for seismically-induced settlement using the LiquefyPro computer program. The analysis indicates the theoretical seismically-induced settlement is on the order of one-quarter inch at the site.

Based on the above information, we conclude that the likelihood that the new structures and other improvements will be damaged by earthquake-induced soil densification is low.

The results and supporting data for the liquefaction and dry settlement analysis are included in Appendix B of this report.

4. Other Seismic Hazards

We have also considered the possibility of other seismically induced hazards that could potentially impact the planned Athletic Field Complex improvements. Because of the generally low relative densities associated with the subsurface soils, shallow depth to groundwater and presence of a free face (Oakland/Alameda Estuary) within 150 feet of the nearest structure (north baseball dugout), there is a moderate potential for post liquefaction lateral spreading to occur at the site.

The subsurface information obtained from CPT-1/EB-5 was used to perform a lateral movement/displacement analysis using the NovoLiq Computer Program (Version 3.2.2014.910). The assumed high groundwater depth used in the analysis was five feet. NovoLiq evaluates post-liquefaction lateral displacements in the vicinity of a “free face” using calculation methods presented by Zhang, Robertson and Brachman (2004), and Barlett and Youd (1992).

Based on the results of our analysis, the theoretical post-liquefaction lateral displacement at the Athletic Field Complex site is on the order of nine to 47 inches, using the calculated peak ground acceleration ($PGA_M = 0.515$). As a result, the planned new structures will need to be designed to tolerate movements of this magnitude; as subsequently discussed this should include the provision of mat slab foundations beneath the concession and restroom buildings.

Ground cracking and soil lurching may be caused by any of the phenomena discussed above. Since there is a moderate potential for liquefaction-induced settlement and lateral spreading of the soils underlying the playfields/dugouts sites, it is also considered possible that local ground cracking or lurching associated with strong seismic ground shaking could occur. Following the 1989 Loma Prieta earthquake, structural damage and fissures or lateral spreading was observed in the site vicinity (Seed, 1998) and evidence of at least one former fissure was observed on the property.

Due to the relatively level topography of the site, landsliding is not considered to be a hazard to the proposed improvements.

C. Flooding

FEMA Flood Insurance Mapping (2009) indicates the project site is within Flood Hazard Zone D, described as areas in which flood hazards are undetermined, but possible. A detention basin (designated as Zone A) is located along the east side of the site, and along the west side of the site Flood Hazard Zone X, described as areas determined to be outside the 0.2% annual chance floodplain.

The site is within the area subject to tsunami inundation, as shown on the 2009, State of California County of Alameda Tsunami Inundation Maps Index for Emergency Planning.

CONCLUSIONS AND RECOMMENDATIONS

From a geotechnical engineering standpoint, we conclude that the proposed Estuary Park Athletic Fields Complex Improvements can be constructed as proposed provided the recommendations of this report are incorporated into the design and construction of the project.

The existing fill soils encountered within the upper three to six feet in the proposed Concession/Restroom Building, dugout structure, synthetic turf playfield and other site improvement areas are loose and of variable strength and consistency, and are considered unsuitable for support of the planned improvements, including the associated construction vehicle traffic loads, in their present condition. The relatively shallow underlying soft Bay Mud also has low shear strength and can exhibit long term settlement under new building loads or additional engineered fill placed during site grading. We estimate approximately nine inches of settlement is possible due to consolidation of the Bay Mud soils for a three foot thickness of berm fill.

Based on the above, we recommend that after the Concession Building/Restroom and dugout sites are cut to grade, and prior to placing any fill, the soils on the bottom be removed to a depth of 24 inches and stockpiled, the overexcavated bottom scarified to a depth of eight inches and recompacted, and the stockpiled material be replaced in thin lifts as properly engineered fill. The actual extent of the required overexcavation of loose soil should be determined by our representative in the field during the site grading phase of work. The Concession Building/Restroom structures can then be supported on a mat slab foundation bearing on properly engineered fill. The lighter, chainlink fence dugout structures can be supported on spread footing foundations bearing in properly engineered fill.

Loose fill soil anticipated in the bottom of the spread footing foundations for other planned improvements such as bleachers, seatwalls, low landscape retaining walls and the trash enclosure should be densified by overexcavation of 12 to 18 inches, with the material replaced as properly compacted fill.

The baseball field backstop, pathway light posts, fences and new basketball posts can also be supported on footings bearing on densified soil as described above. The footings will likely require a larger footprint dimension to resist overturning; non-displacement drilled pier foundations are not feasible for these types of improvements, on which they are typically supported, due to the thickness of the underlying soft Bay Mud (depth 38 feet).

The synthetic turf field subgrade at the baseball and soccer fields should be stabilized by chemical treatment to a depth of 18 inches order to support heavy wheel loads during construction. Flatwork/pavement subgrade areas can also be stabilized by chemical treatment to a depth of 12 inches, to reduce the required new pavement sections, if excessive deflection is observed during construction or if work is to be performed in the wet season, as described further in this report.

Tall field light poles (60+ feet high) can be supported on groups of Drilled Displacement Piles (Augercast/DDP) with a common pile cap that extend below the Bay Mud layer and

obtain skin friction support in the underlying dense sand/stiff clay layers encountered at depths of 38 to 42 feet. The installation of Drilled Displacement Piles will generate a very small volume of soil cuttings (potentially contaminated at the site) relative to cast-in-place drilled piers. Alternatively, driven concrete piles can also be used to support the tall field light poles.

The surficial soils at the site have a low to moderate expansion potential. Therefore, new exterior concrete flatwork should be supported on a cushion of aggregate base material to minimize surface movements due to moisture fluctuations.

Whenever possible, light compaction/construction equipment should be used on the site due to the weak underlying Bay Mud soils below the existing fill layer. Additional new fill thicknesses should also be minimized to reduce surcharging these soils and mitigate long term settlement.

The recommendations presented in the remainder of the report are contingent on our review of the foundation, synthetic turf, vehicular pavement and other site improvement plans for the project, and our observation of the earthwork, foundation, synthetic turf and pavement installation phases of the construction.

A. Earthwork

1. Site Preparation

Existing vegetation, pavements, foundations, underground utilities and any other obstructions encountered within the new improvement areas should be removed to their full depth and extent and hauled from the site. All grass turf and organic topsoil should be stripped from the surface to expose inorganic soil. The stripping thickness is estimated to be four to six inches. Holes resulting from the removal of utilities,

shrubs, concrete curbs and topsoil should be backfilled as required with suitable material and compacted to the requirements for engineered fill as given below.

Any holes resulting from the removal of underground obstructions (such as old tree stumps and abandoned foundations or utilities) that extend below the planned finished grade should be cleared of loose soil and debris, then backfilled with suitable material compacted to the requirements discussed below for engineered fill (see **Section A-5, Fill Placement and Compaction**).

2. Overexcavation and Recomposition of Existing Fill Soils

After the site has been cleared and stripped of surface vegetation and organic laden topsoil, and the Concession/Restroom Building and dugout improvement areas have been cut to grade, the existing loose soils should be removed to a depth of 24 inches, stockpiled and replaced as properly engineered fill.

The exposed soil at the bottom of the fill reworking areas should be ripped to a depth of eight inches, moisture conditioned to two percent above optimum moisture content and compacted to at least 90 percent relative compaction as determined by ASTM Test Designation D1557 before placing new fill. Compaction should be performed using suitably sized compaction equipment such as a self-propelled sheepsfoot compactor. Chemical stabilization or placement of stabilizing fabric (Mirafi 600X or equivalent) and a 12-inch layer of Class 2 aggregate baserock (or suitable import material), as discussed below, may be required to stabilize the bottom of the overexcavation if excessive pumping or instability is observed, prior to bringing up the fill removal area with the on-site stockpiled material. After the exposed subgrade soils are recomacted, the fill removal areas can then be brought up in thin lifts with the excavated soils placed and compacted to the requirements given in Section A-5 for engineered fill.

3. **Moisture Conditioning and Recompaction of Surface Soils Outside Building and Playfield Areas**

Surface soils exposed in new construction areas outside of Concession/restroom Building and dugout improvement areas should be properly moisture conditioned and recompacted prior to placing any required fill. This work should consist of ripping the upper 12 inches, thoroughly moisture conditioning the soils to one to two percent above optimum moisture, and compacting them to at least 90 percent relative compaction as determined by ASTM Test Designation D1557. Compaction should be performed using heavy compaction equipment such as a self-propelled sheepsfoot compactor.

In order to achieve satisfactory compaction in the subgrade and fill soils, it may be necessary to adjust the soil moisture content at the time of compaction. This may require that water be added and thoroughly mixed into any soils which are too dry or that repeated frequent scarification and aeration be performed in any soils which are too wet.

4. **Chemical Stabilization of Subgrade Soils**

We anticipate that the upper soils at the site, due to their loose consistency, could become unstable under equipment wheel loads during the required overexcavation and engineered fill replacement phase of the work, particularly if the work is performed during the wet season. Hence, as an alternative to additional overexcavation (deeper than 24 inches) and placement of stabilizing fabric and baserock in this event, the bottom of any unstable overexcavated areas can be stabilized by chemical treatment. The overexcavated/stockpiled materials and the upper 12 inches of the synthetic turf subgrade can also be stabilized by chemical treatment if instability is observed due to high moisture in the on-site soils, or to

facilitate construction during the wet season when aeration/drying out of the stockpiled soils and subgrade is not practical.

The overexcavated areas, on-site soils and subgrade in new construction areas can be chemically treated with the addition of 2.5 percent Hi-Cal Quicklime and 2.5 percent Portland cement (5% total) by dry weight.

Laboratory testing performed on samples of the near-surface soils obtained R-Values of 27 for untreated soils and 81 for soils treated with a five (5) percent mixture of 50 percent Quicklime and 50 percent high alkaline Portland cement.

The performance of chemically stabilized soils is highly dependent upon uniform mixing of the chemical admixture into the soil and proper curing of the treated soil. Hence, this work should be performed by a specialty subcontractor using appropriately sized spreading and mixing equipment which will result in a uniform five percent lime-cement soil mixture throughout the upper 12 to 18 inches of the overexcavated bottom areas, the on-site stockpiled soil for fill material, or upper 12-inch section of the subgrade.

After satisfactory soil mixing has been achieved and the moisture content has been brought to optimum moisture for compaction, the treated soil should be recompacted to at least 90 percent relative compaction. Compaction should be performed using lighter compaction equipment such as a "pad drum" roller capable of obtaining the required compaction. Field density tests should be performed in the chemically treated soil during the mixing and compaction process as a means of evaluating the contractor's compactive effort and compliance with the recommended minimum relative compaction.

The surface of the chemically treated soils should be kept moist for a minimum of four days after treatment and compaction is performed. Heavy vehicular loading

should not be allowed on the treated subgrade surfaces during the four day curing period.

5. Fill Placement and Compaction

Fill required to raise grades in the areas of new construction should be predominantly granular with a plasticity index of twelve or less. The fill material should have an organic content of less than three percent and should not contain rocks or lumps greater than three inches in greatest dimension and with not more than 15 percent larger than 2.5 inches.

Engineered fill should be compacted to at least 90 percent relative compaction as determined by ASTM Test Designation D1557. Fill material should be spread and compacted in lifts not exceeding eight inches in uncompacted thickness.

In order to achieve satisfactory compaction in the subgrade and fill materials, it may be necessary to adjust the soil moisture content at the time of soil compaction. This may require that water be added and thoroughly mixed into any soils which are too dry or that scarification and aeration be performed in any soils which are too wet.

6. Utility Trench Backfilling

The presently available subsurface information indicates that utility trenches can be excavated with conventional backhoe equipment. Trenches deeper than five feet should be properly braced or sloped in accordance with the current requirements of CAL-OSHA or the local governmental agency, whichever is more stringent. Trenches deeper than five feet may also encounter groundwater. Trenches deeper than three feet at the site may encounter Bay Mud, which is unsuitable for reuse as trench backfill and is generally less stable than granular soil.

Utility trenches should be backfilled with engineered fill placed in lifts not exceeding eight inches in uncompacted thickness, except thicker lifts may be used with the approval of the soil engineer provided satisfactory compaction is achieved. If on-site soil is used, the material should be compacted to at least 85 percent relative compaction by mechanical means only. Imported sand can also be used for backfilling trenches provided it is compacted to at least 90 percent relative compaction. In bleacher, slab, and pavement areas, the trench backfill should be compacted to at least 90 percent relative compaction for on-site soils, and 95 percent where imported clean sand backfill is used. In addition, the upper six inches of all trench backfill materials under vehicular pavement areas should be compacted to at least 95 percent relative compaction.

Water jetting to achieve the required level of backfill compaction should not be permitted.

7. Surface Drainage

Positive surface gradients of at least two percent on landscaped surfaces and one percent on paved surfaces should be maintained away from the new structures, playfields, curbs, sidewalks and any other improvement areas so that water does not collect in their vicinity.

The playfield drainage system should be designed to prevent standing water from ponding either in the subgrade/baserock surface of the field or in the bottoms of subsurface/French drains. Such conditions could result in moisture intrusion beneath the field and uneven moisture content and/or expansion conditions beneath the synthetic turf and concrete slab-on-grade improvements at the site.

8. Construction Observation

Grading should be observed and tested by our representative for conformance with the project plans/specifications and our recommendations. This work includes site preparation, recompaction of the subgrade, selection of satisfactory fill materials, and fill compaction. Sufficient notification prior to commencement of earthwork is essential to make certain that our staff will be available to carry out the required observation and testing.

B. Concession/Restroom Building Foundations

In order to support the anticipated Concession/Restroom Building loads and minimize the effects of possible seismically-induced ground cracking or lurching at the site, the proposed modular buildings should be supported on a minimum 10-inch thick mat slab foundation with 16-inch downturned edges that bear in properly engineered fill, as described above. Mat slab foundations bearing on engineered fill can be designed using an allowable bearing pressure of 750 psf DL+LL and 1125psf all loads including seismic. Alternatively, the slab can be designed using a modulus of vertical subgrade reaction of 100 pci. The actual slab thickness and reinforcing steel should be determined by the structural engineer based on loading requirements.

Lateral loads may be resisted by friction between the mat slab foundation bottom and the supporting baserock pad. A friction coefficient of 0.30 is considered applicable.

Settlements under the lightly loaded modular buildings are expected to be within tolerable limits for the proposed construction.

C. Dugout Structure Foundations

The new dugout structure foundations should consist of conventional continuous and isolated spread footings which bear on properly engineered fill. Spread footings should be founded at least 18 inches below lowest adjacent finished grade. Continuous footings should have a minimum width of 18 inches and isolated footings should be at least 24 inches square. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1.5:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench.

At the above depths, footings can be designed for an allowable bearing pressure of 750 psf DL+LL and 1125 psf all loads including seismic. All continuous footings should be provided with adequate top and bottom reinforcement (as specified by the structural engineer) to provide structural continuity and to permit spanning of local irregularities.

Lateral loads may be resisted by friction between the footing bottoms and the soil subgrade. A friction coefficient of 0.30 is considered applicable. As an alternative, a passive resistance equal to an equivalent fluid weighing 300 pounds per cubic foot can be used for footings poured neat. The passive pressures may be assumed to start 12 inches below the lowest adjacent finished grade. Post-construction settlements of the spread footing foundations under proposed loads are expected to be within tolerable limits.

D. Bleacher/Seatwall/Trash Enclosure Foundations

The new bleacher, seatwall and trash enclosure foundations should consist of conventional continuous and isolated spread footings bearing on properly engineered fill following overexcavation of the footing bottoms. Loose soil anticipated in the footing bottoms should be removed and replaced as engineered fill compacted to at least 90 percent relative compaction as determined by field density testing. Seatwall footings should be

overexcavated a minimum of 12 inches; bleacher and trash enclosure footings should be overexcavated at least 18 inches.

Bleacher, seatwall and trash enclosure spread footings should be founded at least 12 inches below lowest adjacent finished grade. Continuous footings should have a minimum width of 18 inches and isolated footings should be at least 24 inches square. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1.5:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench.

At the above depths, footings can be designed for an allowable bearing pressure of 750 psf DL+LL and 1125 psf all loads including seismic. All continuous footings should be provided with adequate top and bottom reinforcement (as specified by the structural engineer) to provide structural continuity and to permit spanning of local irregularities.

Lateral loads may be resisted by friction between the footing bottoms and the soil subgrade. A friction coefficient of 0.30 is considered applicable. Post-construction settlements of the spread footing foundations under proposed loads are expected to be within tolerable limits.

E. Backstop/Light Post/Fence/Basketball Post Foundations

The backstop, pathway light posts, fencing and basketball post foundations should consist of conventional continuous and isolated (widened) spread footings bearing on properly engineered fill following overexcavation of the footing bottoms. Widened footings will likely be required to resist overturning forces which are typically resisted by drilled pier foundations which are not feasible at the site. Loose soil anticipated in the footing bottoms should be removed and replaced as engineered fill compacted to at least 90 percent relative compaction as determined by field density testing. Lightpost and fence footings should be overexcavated a minimum of 12 inches; backstop and basketball post footings should be overexcavated at least 18 inches.

Backstop, pathway light posts, fencing and basketball post foundations spread footings should be founded at least 18 inches below lowest adjacent finished grade. Continuous footings should have a minimum width of 24 inches and isolated footings should be at least 36 inches square. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1.5:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench.

At the above depths, footings can be designed for an allowable bearing pressure of 500 psf DL+LL and 750 psf all loads including seismic. All continuous footings should be provided with adequate top and bottom reinforcement (as specified by the structural engineer) to provide structural continuity and to permit spanning of local irregularities.

Lateral loads may be resisted by friction between the footing bottoms and the soil subgrade. A friction coefficient of 0.30 is considered applicable. Post-construction settlements of the spread footing foundations under proposed loads are expected to be within tolerable limits.

F. Tall Field Lighting Foundations

Tall field light poles (60+ feet high) can be supported on groups of Drilled Displacement Piles (Augercast/DDP) with a common pile cap that extend below the Bay Mud layer and obtain skin friction support in the underlying dense sand/stiff clay layers encountered at depths of 38 to 42 feet.

The installation of Drilled Displacement Piles is typically performed by a specialty contractor who typically also performs the design; however, minimum pile depths of 50 feet with cohesion values of 200 psf (Bay Mud-five feet to 38 feet deep) and 600 psf (dense sand/stiff clay-greater than 38 feet deep) can be assumed for preliminary design. Alternatively, driven concrete piles can be used for support of the tall field light posts. Piles in groups should be

spaced at least three diameters center to center. Longer or shorter piles may also be required as determined by the soil engineer during construction.

G. Landscape Retaining Wall Foundations

After the site has been properly prepared and graded, new landscape retaining walls up to four feet in height can be supported on spread footings bearing in properly engineered fill. Loose soil anticipated in the footing bottoms should be removed and replaced as engineered fill compacted to at least 90 percent relative compaction as determined by field density testing. Retaining wall footings should be overexcavated a minimum of 18 inches.

Footings should be founded at least 18 inches below lowest adjacent finished grade and embedded at least 18 inches into the supporting subgrade soil. Continuous footings should have a minimum width of 18 inches and isolated footings should be at least 24 inches square. Footings located adjacent to utility trenches should have their bearing surfaces below an imaginary 1.5:1 (horizontal to vertical) plane projected upward from the edge of the bottom of the trench. Care should be taken to keep the footings moist by spraying lightly prior to the concrete pour.

At the above depths, footings can be designed for an allowable bearing pressure of 500 psf due to dead plus live loads and a 50 percent increase for total design loads (750 psf) including wind and seismic. All continuous footings should be provided with at least two number four reinforcement bars top and bottom, to provide structural continuity and to permit spanning of local irregularities.

Lateral loads may be resisted by friction between the foundation bottoms and the supporting subgrade. A friction coefficient of 0.30 is considered applicable.

We recommend that unrestrained walls with level or gently sloping backfill conditions be designed to resist an equivalent fluid pressure of 45 pcf and that restrained walls be designed to resist an equivalent fluid pressure of 45 pcf plus an additional uniform lateral pressure of eight H psf where H = height of backfill above wall foundation in feet. Wherever walls will be subjected to surcharge loads, they should be designed for an additional lateral pressure equal to one-third or one-half the anticipated surcharge load depending on whether the wall is unrestrained or restrained, respectively. A seismic component of lateral earth pressure of $8 H^2$ pounds per lineal foot of wall acting 0.6 H up from the bottom of the wall can be used for retaining wall design.

The preceding pressures assume that sufficient drainage is provided behind the retaining walls to prevent the build-up of hydrostatic pressures from surface or subsurface water infiltration. Adequate drainage may be provided by means of clean, 3/4 inch drain rock material enclosed in a filter fabric, such as Mirafi 140, and a four-inch diameter perforated pipe (Schedule 40 or stronger) placed at the base of the wall. The perforated pipe should be tied into a closed pipe and carried to a suitable drainage system.

Backfill material placed behind retaining walls should be non-expansive and compacted to at least 90 percent relative compaction using lightweight compaction equipment. An 18-inch cap of impervious native clay soil should be placed over the top of the retaining wall backfill to minimize surface water infiltration.

H. Seismic Design Parameters

Seismic design values for the project were determined using the USGS Seismic Design Maps Web Tool Application with the 2008 USGS Hazard Data and the 2010 ASCE 7 (with July 2013 errata), and the subsurface information obtained from the exploratory borings which was used for determining the site classification. A site-specific seismic hazard analysis is not

required (per CBC 2013 Section 1616A.1.3), as the site is assigned to Seismic Design Category D (per CBC 2013 Section 1613A.3.5, $S_1 < 0.75$).

Using the site Latitude (37.7896 °N) and Longitude (122.2868 °W) and the site classification as input, the computer application provides Seismic Hazard Curve information, Site Coefficients and Uniform Hazard Response Spectra for both "short" (0.2 seconds) and long period (1-second) durations as detailed in the 2013 CBC.

Based on the results of our investigation, the tables provided in Section 1613.5.2 of the 2013 CBC, and our analysis using the USGS Earthquake Ground Motion Parameter Java Application, the following seismic design parameters can be used in lateral force analyses at this site:

Site Class E – Soft Clay Soil Profile with Standard Penetration Test Values of less than 15 blows/foot

USGS Website Values:

Site Coefficient $F_a = 0.9$

Site Coefficient $F_v = 2.4$

Mapped Spectral Acceleration Values; $S_s = 1.508$, $S_1 = 0.600$

Spectral Response Accelerations; $SM_s = 1.357$, $SM_1 = 1.440$

Design Spectral Response Accelerations; $SD_s = 0.905$, $SD_1 = 0.960$

I. Synthetic Turf Fields

After the baseball field and soccer field areas have been cut to grade, the subgrade condition should be checked by our representative. The synthetic turf subgrade section should be chemically treated as discussed in **Section A.4. Chemical Stabilization of Subgrade Soils** to a minimum depth of 18 inches in order to support heavy wheel loads, mitigate pumping and facilitate construction of the playfield drainage layer.

The compacted playfield subgrade should be overlain with a filter fabric (such as Mirafi 140N) prior to the placement of the aggregate drainage section. The purpose of the fabric is to protect the aggregate material from contamination by the underlying subgrade.

We recommend the new synthetic turf playfields be underlain by a minimum six inch thick drainage section consisting of Class 2 Permeable Material (CALTRANS Spec) designed to meet the minimum compaction, gradation, permeability and stability requirements of the synthetic turf manufacturer. The permeable material should be placed in thin lifts in a manner to prevent segregation and should be compacted to between 90 and 95 percent relative compaction based on the synthetic turf manufacturers requirements.

The drainage section, compaction and material requirements, and subdrain/perimeter drain systems are generally proprietary and should be determined by the synthetic turf manufacturer.

J. Slabs-on-Grade

Slab-on-grade construction will be used for exterior flatwork (dugouts, sidewalks, curbs). The exterior concrete flatwork areas should be underlain by six inches (minimum) of Class 2 aggregate baserock placed on the prepared subgrade soil.

Reinforcement of slabs should be provided in accordance with their anticipated use and loading, but as a minimum, slabs should be reinforced with No. 3 bars at 18 inches on center, both ways, or No. 4 bars at 24 inches on center, both ways. Concrete slabs should be articulated with a maximum joint spacing of ten feet in both directions.

Prior to final construction of slabs, the subgrade surface should be proofrolled to provide a smooth, firm non-yielding surface. The Class 2 aggregate baserock should be compacted to at least 90 percent relative compaction.

The moisture content of the compacted subgrade should be maintained at approximately optimum moisture prior to placing the baserock or crushed rock materials.

K. Flexible Pavements

The near-surface clayey sand soil (fill) at the site has an R-Value of 27 based on the laboratory test results. Utilizing an R-Value of 27 and Traffic Indices of 4.5 and 6.0 for automobile parking/driveways and fire truck traffic lanes, respectively, and Procedure 301-F of the California Department of Transportation, we have developed the following minimum flexible pavement sections for use on this project:

TABLE 2 - Recommended Flexible Pavement Sections

Traffic Condition	Asphaltic Concrete (inches)	Class 2 Aggregate Base (inches)	Chemical Subgrade Treatment (inches)	Total Thickness (inches)
Auto Parking (T.I. = 4.5)				
Untreated	2.5	6.0	--	8.5
Chemically Treated	2.5	3.0	12.0	17.5
Fire Truck Lane, Driveways (T.I. = 6.0)				
Untreated	4.0	12.0	--	16.0
Chemically Treated	3.0	6.0	12.0	21.0

The upper six inches of subgrade and the Class 2 aggregate baserock section should be compacted to at least 95 percent relative compaction. Any fill required below the upper six inches of subgrade should be compacted to at least 90 percent.

The subgrade should be statically rolled with a heavy, smooth drum roller to provide a smooth firm surface. Any unstable or pumping subgrade areas should be chemically treated as described above in this report to a minimum depth of 12 inches, or subexcavated, plugged with baserock and overlain with a stabilizing fabric such as Mirafi 600X. Fabric installation should be performed in accordance with the manufacturer's recommendations. The method and extent of any required stabilization work should be evaluated by our representative.

Class 2 aggregate base should have an R-Value of at least 78 and conform to the requirements of Section 26, State of California "CALTRANS" Standard Specifications, latest edition. The aggregate base material should be placed in thin lifts in a manner to prevent segregation, and should be uniformly moisture conditioned and compacted to at least 95 percent relative compaction to provide a smooth, unyielding surface.

The asphaltic concrete should conform to and be placed in accordance with the requirements of Section 39 in the State of California CALTRANS Standard Specifications, latest edition.

New AC hardscape and AC pathway areas should consist of a minimum of two and one-half inches of asphalt concrete over six inches of Class 2 aggregate baserock. The upper six inches of soil subgrade should be compacted to at least 90 percent relative compaction. Any fill required below the upper six inches of subgrade should be compacted to at least 90 percent.

L. Soil Corrosivity

Laboratory resistivity, pH, chloride and sulfate testing was performed on a composite soil samples of the near surface soils obtained from the borings during our geotechnical investigation for this project. The testing was performed by Cooper Testing Laboratory for the purpose of evaluating the soils' corrosion potential for use in the design of underground utilities and embedded concrete on this project.

In summary, the test results indicated a minimum resistivity of 1,795 Ohm-Cm, a PH of 7.7, a chloride content of 32 ppm, and water soluble sulfate content of 93 ppm. Soils with chloride contents of less than 500 ppm and sulfate contents of less than 1500 ppm are considered to be of "low" Corrosivity. However, based on the resistivity testing, the soils are considered "moderately corrosive."

Table 3 below shows the general correlation between resistivity and corrosion potential.

**Table 3 - Correlation Between Resistivity
and Corrosion Potential (c)**

Soil Resistivity (ohm-cm)	Soil Classification
Below 500	Very Corrosive
500 to 1,000	Corrosive
1,000 to 2,000	Moderately Corrosive
2,000 to 10,000	Mildly Corrosive
Above 10,000	Progressively Less Corrosive

(c) National Association of Corrosion Engineers.

This condition could result in a reduction of the life span of buried steel piping and culverts for this project. Thicker gauge pipelines would have greater life spans. For example, the life spans for 18, 16 and 14 gauge steel culverts with a soil resistivity of 1,795 ohm-cm and a pH of 7.7 are estimated to be roughly 32, 41 and 51 years, respectively (California Division of Highways, 1993).

For the purposes of design of concrete in contact with the soil, there are no restrictions on types of cementitious materials to be used, based on the resistivity testing and sulfate testing.

PLAN REVIEW AND CONSTRUCTION OBSERVATION

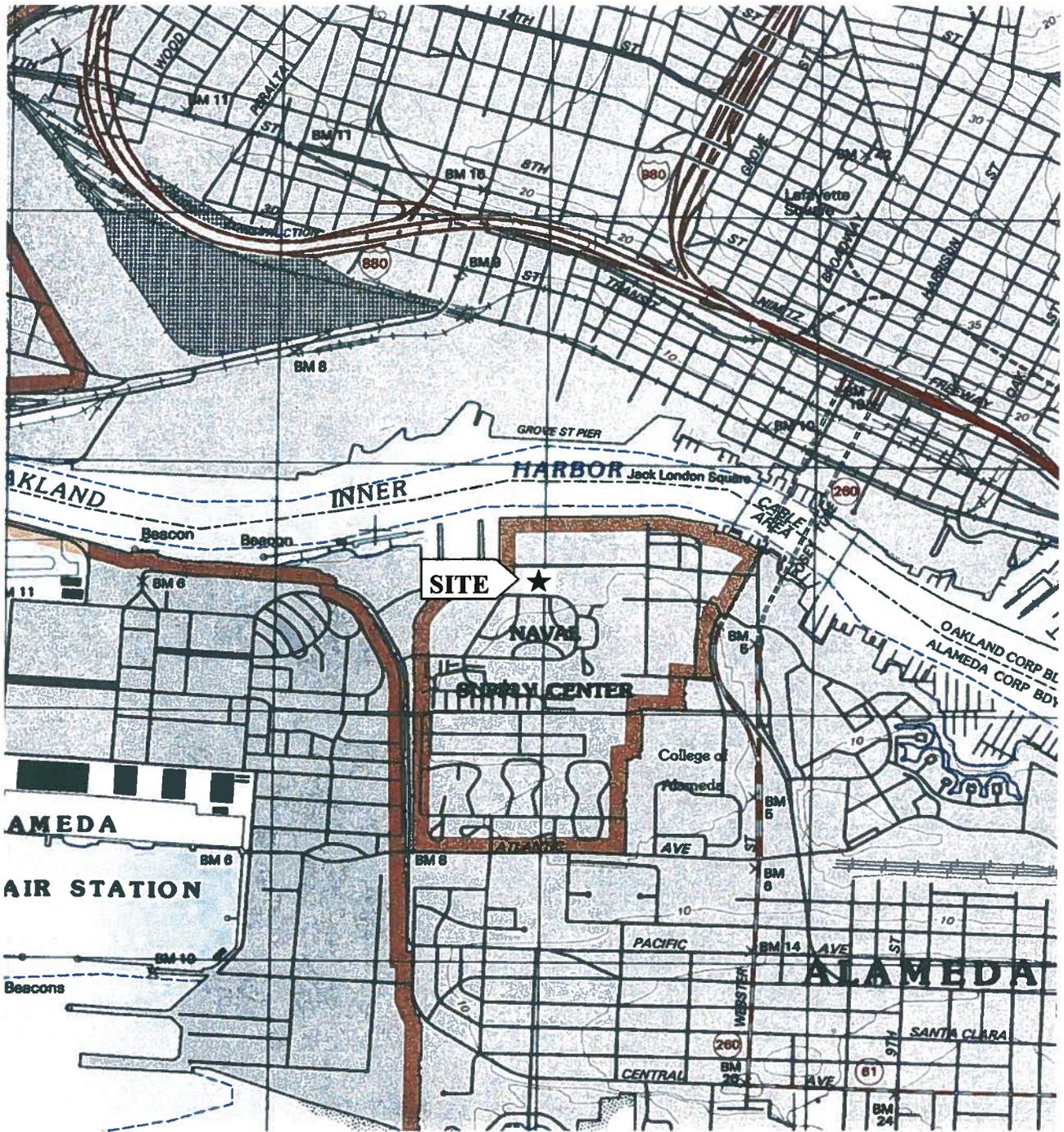
We should be provided the opportunity to review the foundation and grading plans and the specifications for the project when they are available. We should also be retained to provide soil engineering observation and testing services during the grading and foundation installation phases of the project. This will provide the opportunity for correlation of the soil conditions found in our investigation with those actually encountered in the field, and thus permit any necessary modifications in our recommendations resulting from changes in anticipated conditions.

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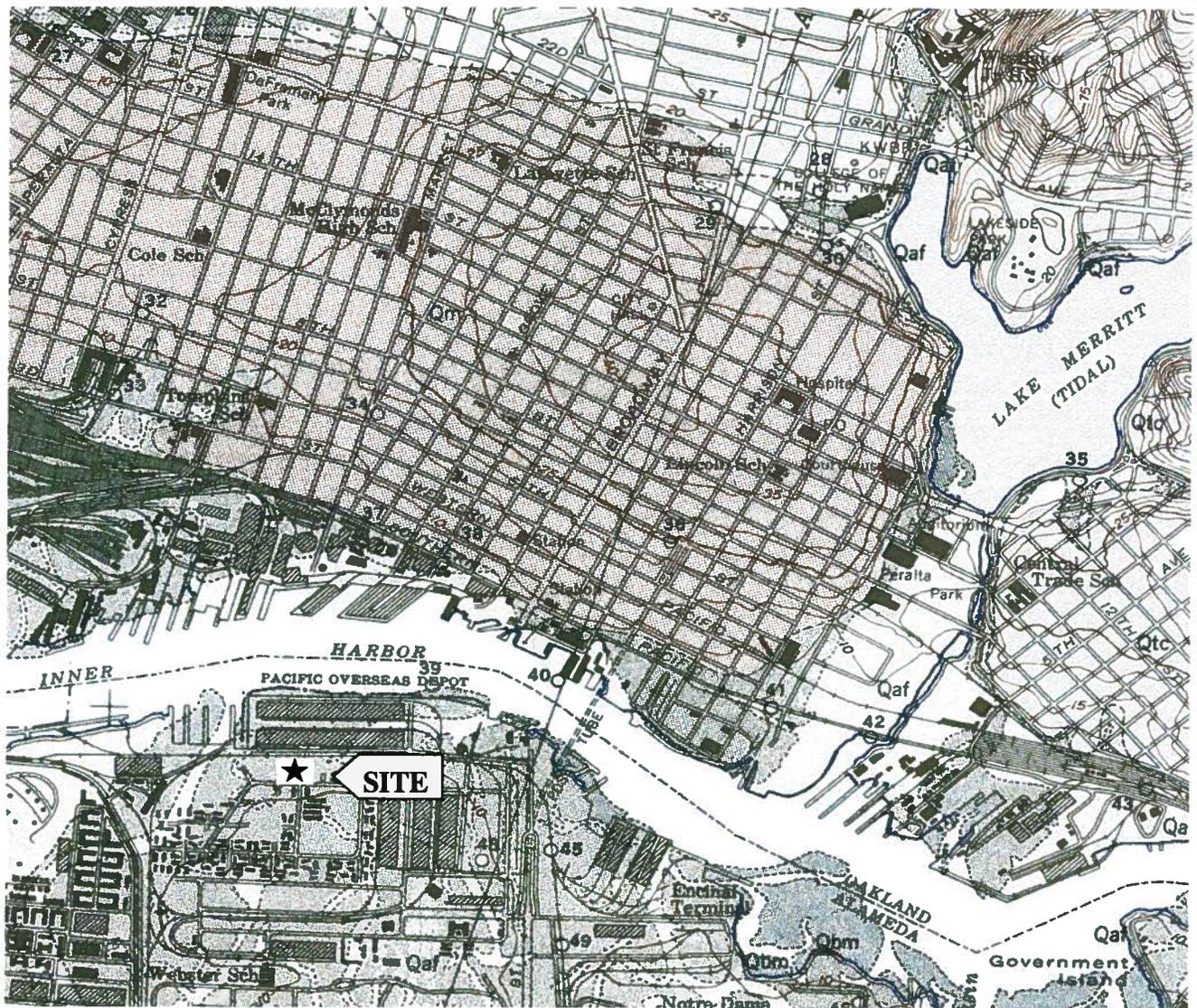
BASE: U.S. Geological Survey, Oakland West 7.5' Quadrangle, Alameda, California

SITE VICINITY MAP

CEC
CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

ATHLETIC FIELD COMPLEX RENOVATIONS
 Estuary Park
 Alameda, California

APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 2000'	1369.1	May 2015	1



EXPLANATION

- | | |
|----------------------|--------------------------------|
| Qaf | Artificial Fill |
| Qbm | Bay Mud |
| Qm | Pleistocene Merritt Sand |
| Qtc | Pleistocene Temescal Formation |
| Areas of Tidal Flats | |



BASE: Areal and Engineering Geology of the Oakland West Quadrangle, by Dorothy H. Radbruch, Map I-239

LOCAL GEOLOGIC MAP

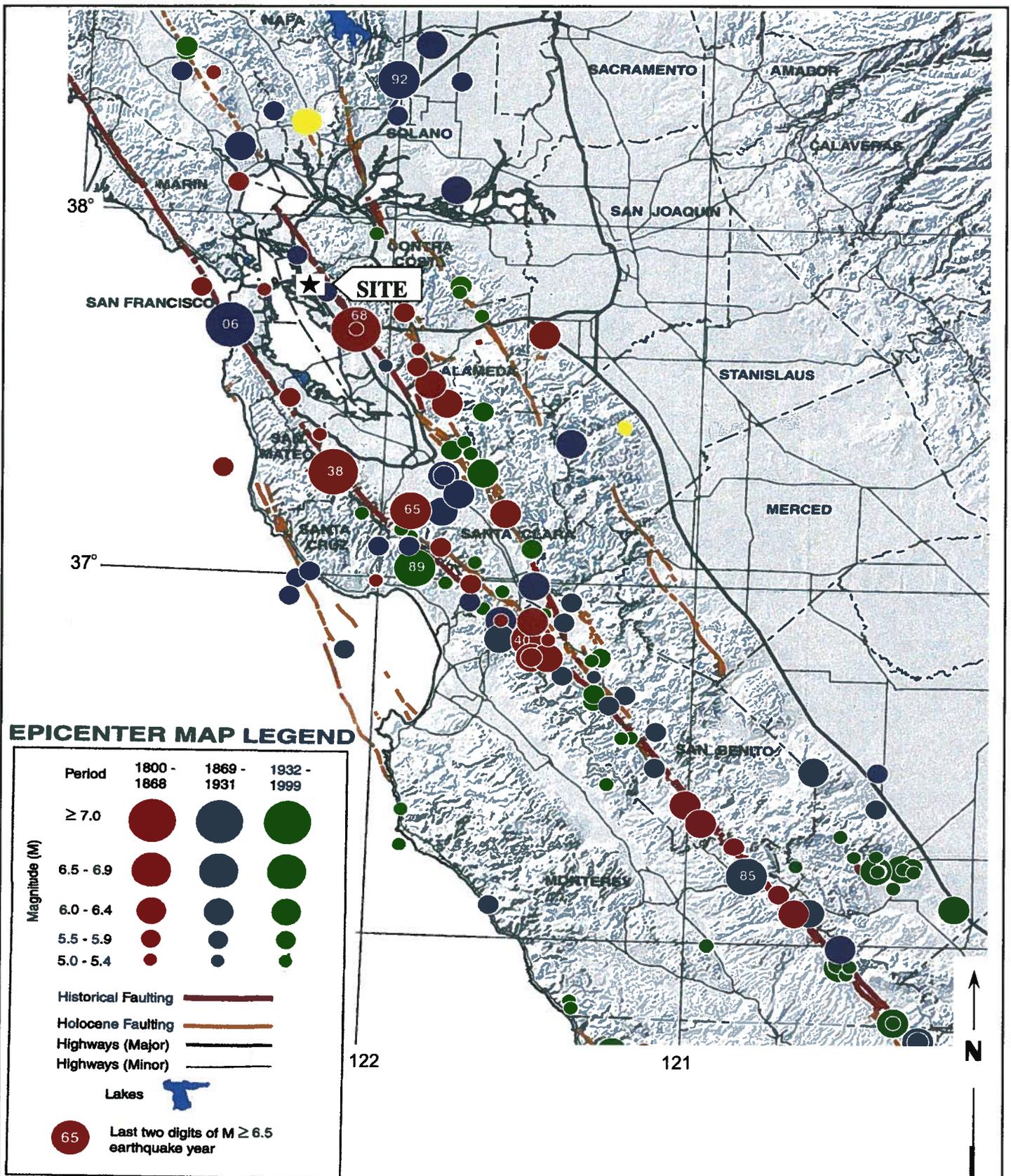


CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

ATHLETIC FIELD COMPLEX RENOVATIONS

Estuary Park
Alameda, California

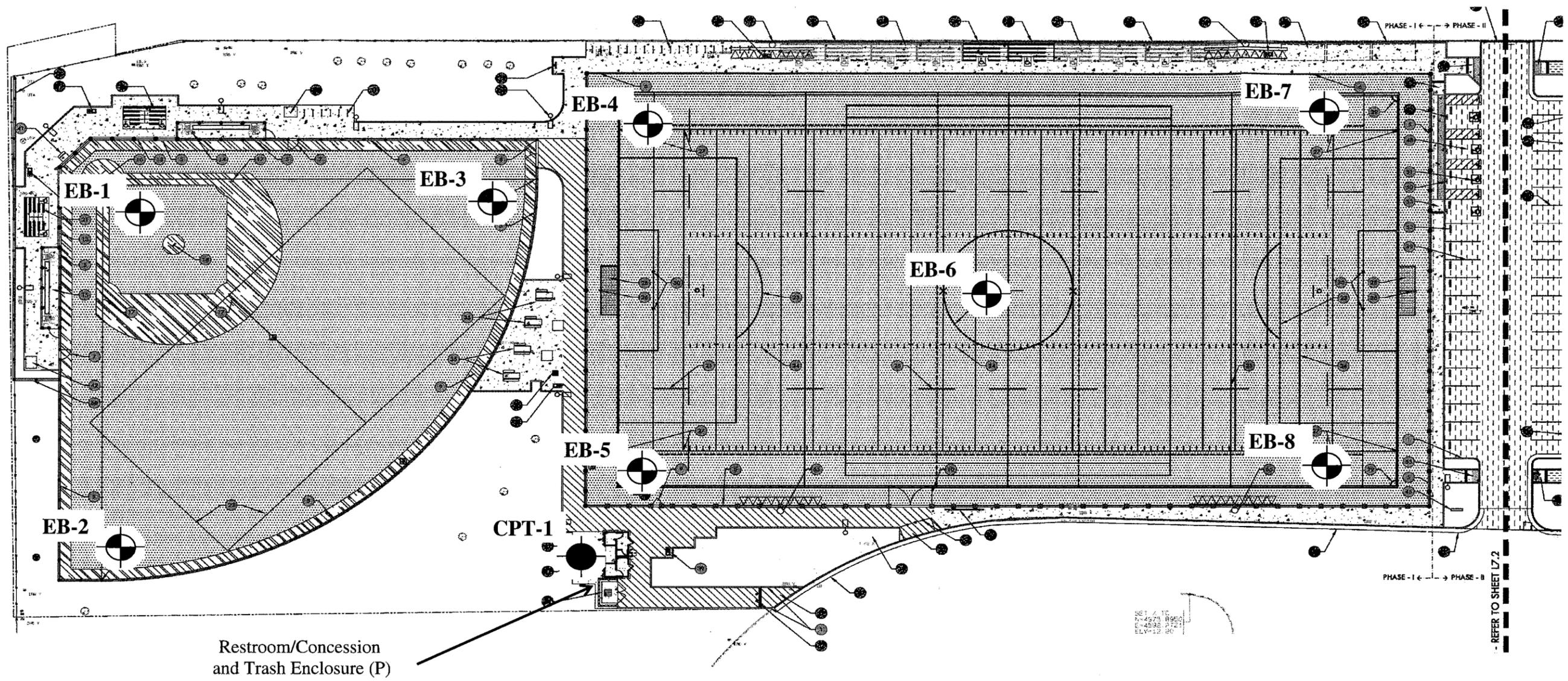
APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 2000'	1369.1	May 2015	2



BASE: CDMG Map Sheet 49; Topozada et al, 2000. Magnitude 5.0 and Greater Earthquakes Plotted Through 1999; Subsequent Earthquakes through August 2014 plotted in yellow.

REGIONAL EARTHQUAKE EPICENTER MAP

 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>		ATHLETIC FIELD COMPLEX RENOVATIONS Estuary Park Alameda, California		
APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 25 miles ±	1369.1	May 2015	3



Restroom/Concession
and Trash Enclosure (P)

SET 4 15
C-4578 B950
C-4588 9721
FLV-13 96

PHASE - I ← → PHASE - II
- REFER TO SHEET 17.2

EXPLANATION

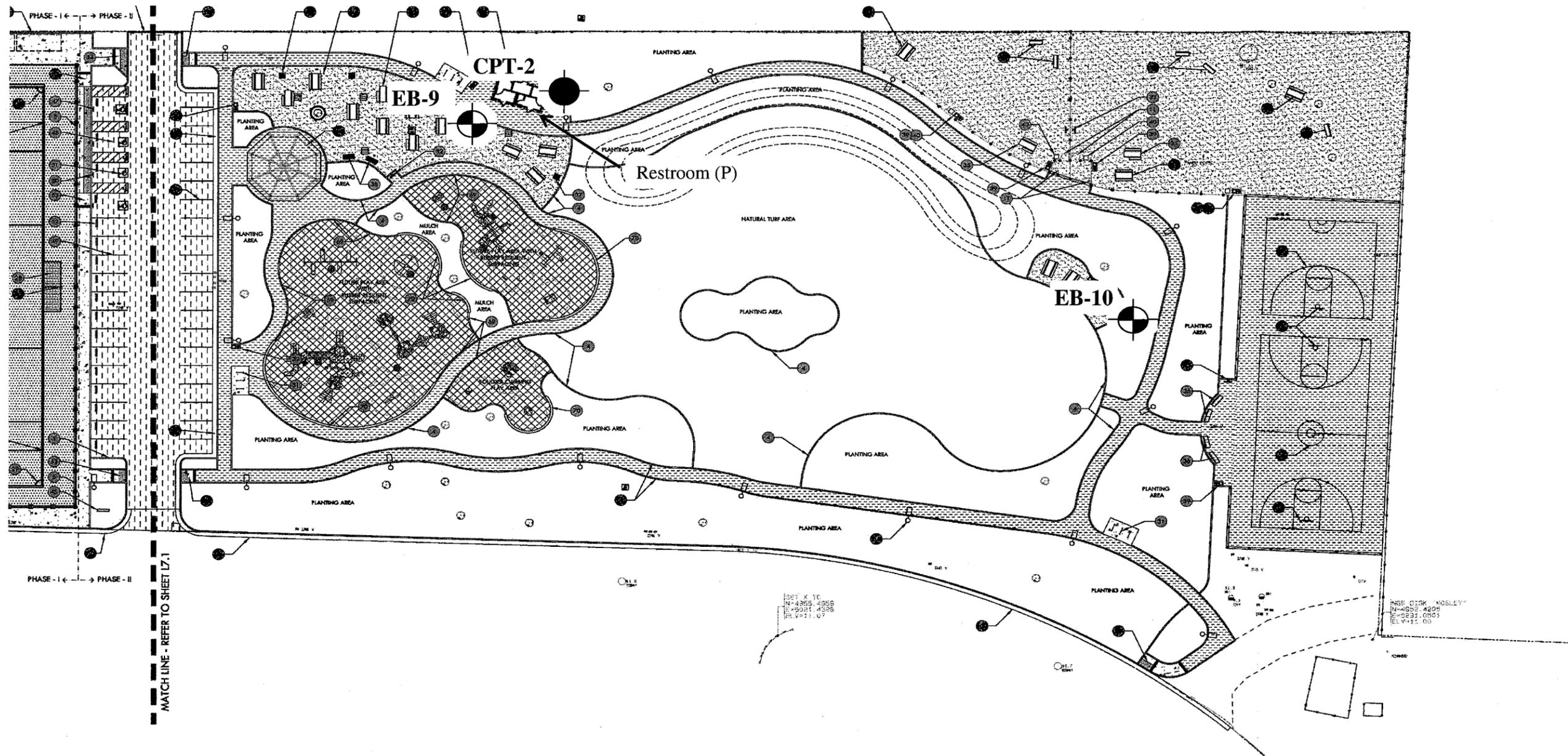
EB-1  Approximate Location of Exploratory Boring

CPT-1  Approximate Location of Exploratory CPT Boring



BASE: Site Plan prepared by Verde Design, email received April 28, 2015

SITE PLAN - WEST				
 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>		ATHLETIC FIELD COMPLEX RENOVATIONS		
		Estuary Park Alameda, California		
APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 50' ±	1369.1	May 2015	4



EXPLANATION

- EB-9  Approximate Location of Exploratory Boring
- CPT-2  Approximate Location of Exploratory CPT Boring



BASE: Site Plan prepared by Verde Design, email received April 28, 2015

SITE PLAN - EAST				
 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>		ATHLETIC FIELD COMPLEX RENOVATIONS		
		Estuary Park Alameda, California		
APPROVED BY	SCALE	PROJECT NO.	DATE	DRAWING NO.
GF	1" = 50' ±	1369.1	May 2015	5

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISION
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% 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	SM	Silty sands, sand-silt mixtures, non-plastic fines
			SC	Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	
		CL	Inorganic clays 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 IS GREATER THAN 50%	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	
		CH	Inorganic 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

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D-2487)

U.S. STANDARD SERIES SIEVE

CLEAR SQUARE SIEVE OPENINGS

200

40

10

4

3/4"

3"

12"

SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

GRAIN SIZES

SANDS AND GRAVELS	BLOWS/FOOT ↕	SILTS AND CLAYS	STRENGTH ☆	BLOWS/FOOT ↕
VERY LOOSE	0 - 4	VERY SOFT	0 - 1/4	0 - 2
LOOSE	4 - 10	SOFT	1/4 - 1/2	2 - 4
MEDIUM DENSE	10 - 30	FIRM	1/2 - 1	4 - 8
DENSE	30 - 50	STIFF	1 - 2	8 - 16
VERY DENSE	OVER 50	VERY STIFF	2 - 4	16 - 32
		HARD	OVER 4	OVER 32

RELATIVE DENSITY

CONSISTENCY

↕ Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split barrel (ASTM D-1586).

☆ Unconfined compressive strength in tons/sq.ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.



CLEARY CONSULTANTS, INC.
Geotechnical Engineers and Geologists

KEY TO EXPLORATORY BORING LOGS

ATHLETIC FIELD COMPLEX RENOVATIONS

Estuary Park
Alameda, California

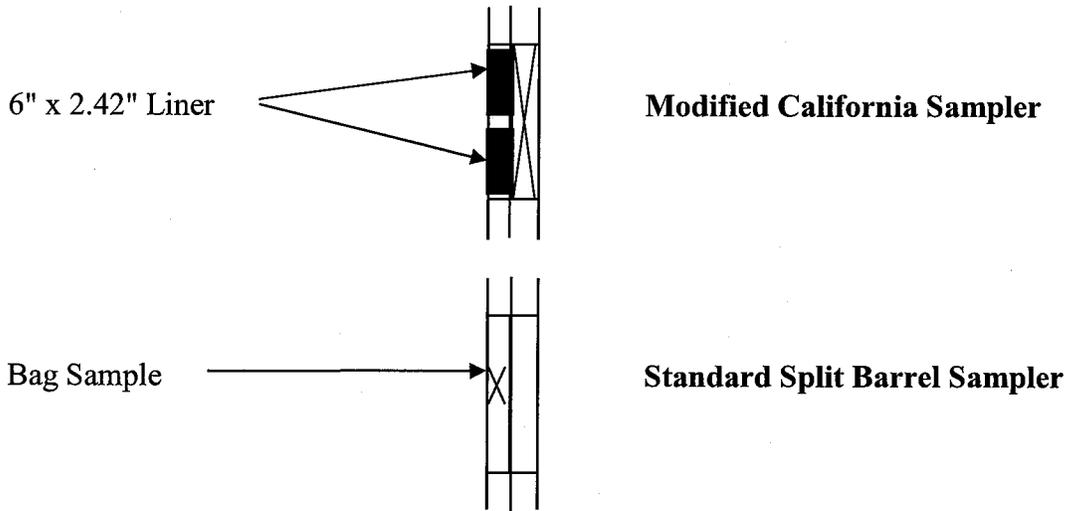
PROJECT NO.	DATE	DRAWING NO.
1369.1	May 2015	6

FIELD SAMPLING PROCEDURES

The soils encountered in the borings were continuously logged in the field by our representative and described in accordance with the Unified Soil Classification System (ASTM D-2487).

Representative soil samples were obtained from the borings at selected depths appropriate to the soil investigation. All samples were returned to our laboratory for classification and testing.

In accordance with the ASTM D1586 procedure, the standard penetration resistance was obtained by dropping a 140 pound hammer through a 30-inch free fall. The 2-inch O.D. Standard split barrel sampler was driven 18 inches or to practical refusal and the number of blows were recorded for each 6-inch penetration interval. The blows per foot recorded on the boring logs represent the accumulated number of blows, or N-value, required to drive the penetration sampler the final 12 inches. In addition, 3.0 inch O.D. x 2.42 inch I.D. drive samples were obtained using a Modified California Sampler and 140 pound hammer. Blow counts for the Modified California Sampler were converted to standard penetration resistance by multiplying by 0.6. The sample type is shown on the boring logs in accordance with the designation below.



Where obtained, the shear strength of the soil samples using either Torvane (TV) or Pocket Penetrometer (PP) devices is shown on the boring logs in the far right hand column.

 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>	SUMMARY OF FIELD SAMPLING PROCEDURES		
	ATHLETIC FIELD COMPLEX RENOVATIONS		
	Estuary Park Alameda, California		
	PROJECT NO.	DATE	DRAWING NO.
1369.1	May 2015	7	

LABORATORY TESTING PROCEDURES

The laboratory testing program was directed toward a quantitative and qualitative evaluation of the physical and mechanical properties of the soils underlying the site.

The natural water content was determined on 80 samples of the materials recovered from the borings in accordance with the ASTM D2216 Test Procedure. These water contents are recorded on the boring logs at the appropriate sample depths.

Dry density determinations were performed on 52 samples to measure the unit weight of the subsurface soils in accordance with the ASTM D2937 Test Procedure. The results of these tests are shown on the boring logs at the appropriate sample depths.

Atterberg Limit determinations were performed on 23 samples of the subsurface soils in accordance with the ASTM D4318 Test Procedure to determine the ranges of water contents over which the materials exhibited plasticity. The Atterberg Limits are used to classify the soil in accordance with the Unified Soil Classification System and to evaluate the soil's expansion potential. The results of these tests are presented on Drawing 20 and on the boring logs at the appropriate sample depths.

The percent soil fraction passing the #200 sieve and #4 sieves was determined on 25 samples of the subsurface soils in accordance with the ASTM D1140 Test Procedure to aid in the classification of the soils. The results of these tests are shown on the boring logs at the appropriate sample depths.

Free swell tests were performed on 10 samples of the soil materials to evaluate the swelling potential of the soil. The free swell tests were performed by slowly pouring 10 ml of air dried soil passing the No. 40 sieve into a 100 ml graduated cylinder filled with approximately 90 ml of distilled water. The suspension was stirred repeatedly to ensure thorough wetting of the soil specimen. The graduated cylinder was then filled with distilled water to the 100 ml mark and allowed to settle until equilibrium was reached (approximately 24 hours). The free swell volume of the soil was then noted. The percent free swell was calculated by subtracting the initial soil volume from the free swell volume, dividing the difference by the initial volume, and multiplying the result by 100 percent. The results of these tests are presented on the boring logs.

Two R-Value tests were performed by Cooper Testing Laboratory on representative samples of the subgrade soil; two untreated, and two treated with five percent by dry weight of a mixture of 50 percent Quicklime and 50 percent Portland cement to provide data for the field design. The tests were performed in accordance with California Test Method 301-F and indicated R-Values of 27 (untreated) and 81 (treated) at an exudation pressure of 300 pounds per square inch. The results of the tests are presented on Drawings 21 to 22.

DRAWING NO. 8

LABORATORY TESTING PROCEDURES CONTINUED

Corrosion testing was performed on a composite sample of the surficial soil materials from the upper one and one-half feet of the exploratory borings. Testing included resistivity, pH, chloride and sulfate testing performed in accordance with ASTM G57, ASTM G51, Caltrans 422(modified) and Caltrans 417(modified), respectively. The results of these tests are presented on Drawing 23 and are discussed in Section L. Soil Corrosivity.

DRAWING NO. 9

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	JH
DEPTH TO GROUNDWATER	7.0'	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	2/18/2015

DESCRIPTION AND CLASSIFICATION						DEPTH	SAMPLER	PENETRATION	RESISTANCE	WATER	DRY DENSITY	SHEAR
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	(feet)		(BLOWS/FT)	CONTENT (%)	(PCF)	STRENGTH			(KSF)
Grass Lawn CLAYEY SAND, moist, fine to medium grained sand, subangular to subrounded gravel up to 1/4" diameter, occasional iron staining @1.5': Liquid Limit = 30% Plasticity Index = 13% Finer than #4 = 78% Finer than #200 = 26% Free Swell = 40% @3.0': orange plastic @4.5': Finer than #4 = 99% Finer than #200 = 50% ↑ Fill	Brown to Yellowish Brown	Medium Dense Loose	SC	1 2 3 4 5		10 8 7	12 15 34 47 34	81 103	PP=2.75			
SILTY CLAY, very moist, fine grained sand (Bay Mud) @6.0': Finer than #4 = 100% Finer than #200 = 86% @9.0': odorous @9.5': shell fragments, fine to medium grained sand Liquid Limit = 63% Plasticity Index = 41% Finer than #4 = 99% Finer than #200 = 84% Free Swell = 85% @14.5': Finer than #4 = 100% Finer than #200 = 56%	Gray	Very Soft	CH	6 7 8 9 10 11 12 13 14 15		2 1 2	74 83 76	51 54				
Bottom of Boring = 15.0'				16 17 18 19 20								

* Drilled with a B40 Truck Mounted Rig
 Water level as encountered during drilling
 PP = Pocket Penetrometer

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>	LOG OF EXPLORATORY BORING NO. 1 ATHLETIC FIELD COMPLEX RENOVATIONS Estuary Park Alameda, California			
	APPROVED BY	SCALE	PROJECT NO.	DATE
GF	---	1369.1	May 2015	10

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	JH
DEPTH TO GROUNDWATER	Not Enc.	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	2/18/2015

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
SILTY CLAY, moist, fine grained sand, iron staining (Bay Mud) @4.5': Finer than #4 = 95% Finer than #200 = 63%	Brown to Dark Gray	Soft Firm	CH	4 5 6		3 3 7	31 31 24	79	
Bottom of Boring = 6.5'				7 8 9 10 11 12 13 14 15 16 17 18 19 20					

* Drilled with a B40 Truck Mounted Rig

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>	LOG OF EXPLORATORY BORING NO. 2 ATHLETIC FIELD COMPLEX RENOVATIONS Estuary Park Alameda, California			
	APPROVED BY GF	SCALE ---	PROJECT NO. 1369.1	DATE May 2015

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	JH
DEPTH TO GROUNDWATER	7.0'	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	2/18/2015

DESCRIPTION AND CLASSIFICATION				DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
Grass Lawn CLAYEY SAND, moist, fine to medium grained sand, fine subangular to subrounded gravel up to 1/4" diameter, occasional iron staining @1.5': Liquid Limit = 27% Plasticity Index = 11% Finer than #4 = 82% Finer than #200 = 28% Free Swell = 40%	Brown	Loose	SC	1		6	13	108	
		----- Medium Dense		2			13	111	
		----- Loose		3	X	11	40		
				4					
↑ Fill SILTY SAND, wet, firm to medium grained sand @6.0': peat, iron staining, odorous Finer than #4 = 100% Finer than #200 = 41%	Brown to Yellowish Brown	Loose	SM	5		6	29	86	
				6	X	7	31		
				7					
SILTY CLAY, very moist, fine grained sand, odorous, greasy (Bay Mud)	Dark Gray to Black	Very Soft	CH	8					
				9					
				10		1	101	41	
				11			94	47	
		----- Dark Gray		12					
				13					
				14					
				15	X	2	86		
				16					
				17					
				18					
				19					
				20					

* Drilled with a B40 Truck Mounted Rig
 Water level as measured 0.25 hours after drilling

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>		LOG OF EXPLORATORY BORING NO. 4 ATHLETIC FIELD COMPLEX RENOVATIONS Estuary Park Alameda, California		
		APPROVED BY	SCALE	PROJECT NO.
GF	---	1369.1	May 2015	13

EQUIPMENT		8" Diameter Hollow Stem Auger*		ELEVATION		---		LOGGED BY		JH		
DEPTH TO GROUNDWATER		7.0'		DEPTH TO BEDROCK		Not Enc.		DATE DRILLED		2/18/2015		
DESCRIPTION AND CLASSIFICATION												
DESCRIPTION AND REMARKS				COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
Grass Lawn CLAYEY SAND, moist, fine to medium grained sand, fine subangular to subrounded gravel				Brown	Loose	SC	1					
							2		4	14	100	
↑ Fill SILTY SAND, moist, fine grained sand @4.0': orange plastic, sand lense @4.5': Liquid Limit = Non-Plastic Plasticity Index = Non-Plastic Finer than #4 = 100% Finer than #200 = 11% Free Swell = 20% ↑ Fill				Brown to Gray	Loose	SM	3	X	12	13		
							4			19	93	
							5		8	16	99	
↑ Fill SILTY CLAY, very moist, fine grained sand, iron staining (Bay Mud)				Gray	Soft	CH	6	X	2	80		
							7					
				Olive Brown	Firm		8					
							9					
							10		5	26	94	
							11			25	94	
							12					
				Gray to Black	Soft		13					
							14					
@14.5': occasional organics, odorous							15	X	2	105		
Bottom of Boring = 15.0'							16					
							17					
							18					
							19					
							20					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

 CLEARY CONSULTANTS, INC. Geotechnical Engineers and Geologists		LOG OF EXPLORATORY BORING NO. 5 ATHLETIC FIELD COMPLEX RENOVATIONS Estuary Park Alameda, California		
		APPROVED BY GF	SCALE ---	PROJECT NO. 1369.1

EQUIPMENT 8" Diameter Hollow Stem Auger* ELEVATION --- LOGGED BY JH
 DEPTH TO GROUNDWATER Not Enc. DEPTH TO BEDROCK Not Enc. DATE DRILLED 2/18/2015

DESCRIPTION AND CLASSIFICATION

DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
Grass Lawn CLAYEY SAND, moist, fine to medium grained sand, fine subangular to subrounded gravel @1.5': Liquid Limit = 27% Plasticity Index = 11% Finer than #4 = 88% Finer than #200 = 33% Free Swell = 30% @3.0': plastic debris	Light Yellowish Brown to Brown	Loose	SC	1 2		6	54	53	109
--- ↑ Fill --- SAND, wet, fine grained sand @4.5': Finer than #4 = 100% Finer than #200 = 14%	Brown	Loose	SM	3 4 5 6		6 4 5	14 19 21 32		94 90
Bottom of Boring = 6.5'				7 8 9 10 11 12 13 14 15 16 17 18 19 20					

* Drilled with a B40 Truck Mounted Rig

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>	LOG OF EXPLORATORY BORING NO. 6 ATHLETIC FIELD COMPLEX RENOVATIONS Estuary Park Alameda, California			
	APPROVED BY GF	SCALE ---	PROJECT NO. 1369.1	DATE May 2015

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	JH
DEPTH TO GROUNDWATER	8.0'	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	2/18/2015

DESCRIPTION AND CLASSIFICATION				DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE						
Grass Lawn CLAYEY SAND, moist, fine to medium grained sand, subangular to subrounded gravel up to 1/4" diameter, occasional iron staining @1.5': Finer than #4 = 80% Finer than #200 = 27% Free Swell = 30% @3.0': orange plastic	Light Yellowish Brown to Brown	Loose	SC	1		5	12	110	
				2			13	105	
----- ↑ Fill ----- SILTY CLAY, moist, fine grained sand, occasional fine subangular gravel	Light Yellowish Brown	Stiff	CL	3	X	5	13		
SILTY SAND, moist, fine grained sand @4.5': Finer than #4 = 100% Finer than #200 = 9%	Light Yellowish Brown	Loose	SM	4		9	10	99	
				5			16	91	
				6	X	5	21		
				7					
SILTY CLAY, moist, fine grained sand (Bay Mud)	Dark Gray to Black	Soft	CH	8			▼		
				9		2	105	44	
				10			74	55	
				11					
				12					
				13					
				14					
				15	X	2	79		
Bottom of Boring = 15.0'				16					
				17					
				18					
				19					
* Drilled with a B40 Truck Mounted Rig ▼ Water level as measured 0.25 hours after drilling				20					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>	LOG OF EXPLORATORY BORING NO. 7 ATHLETIC FIELD COMPLEX RENOVATIONS Estuary Park Alameda, California			
	APPROVED BY GF	SCALE ---	PROJECT NO. 1369.1	DATE May 2015

EQUIPMENT	8" Diameter Hollow Stem Auger*	ELEVATION	---	LOGGED BY	JH
DEPTH TO GROUNDWATER	9.0'	DEPTH TO BEDROCK	Not Enc.	DATE DRILLED	2/18/2015

DESCRIPTION AND CLASSIFICATION				DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)	
DESCRIPTION AND REMARKS	COLOR	CONSIST.	SOIL TYPE							
CLAYEY SAND, moist, fine to medium grained sand, subangular to subrounded gravel up to 1/4" diameter @1.5': Liquid Limit = 29% Plasticity Index = 13% Finer than #4 = 80% Finer than #200 = 28% Free Swell = 50% @3.0': orange plastic	Light Yellowish Brown	Loose	SC	1		7	12	104		
	---			2			14	104		
		Gray			3	X	7	15		
					4		20	28	75	
↑ Fill SILTY SAND, moist, fine grained sand	Brown	Loose	SM	5	6			99		
				6	X	5	20			
				7						
SILTY CLAY, wet, fine grained sand (Bay Mud)	Gray	Soft	CH	8						
				9		4	43	68		
				10			73	55		
				11						
SILTY SAND, moist, fine grained sand @14.5': Finer than #4 = 100% Finer than #200 = 7%	Gray	Medium Dense	SM	12						
				13						
				14						
				15	X	17	25			
Bottom of Boring = 15.0'				16						
				17						
				18						
				19						
				20						

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>		LOG OF EXPLORATORY BORING NO. 9 ATHLETIC FIELD COMPLEX RENOVATIONS Estuary Park Alameda, California		
		APPROVED BY GF	SCALE ---	PROJECT NO. 1369.1

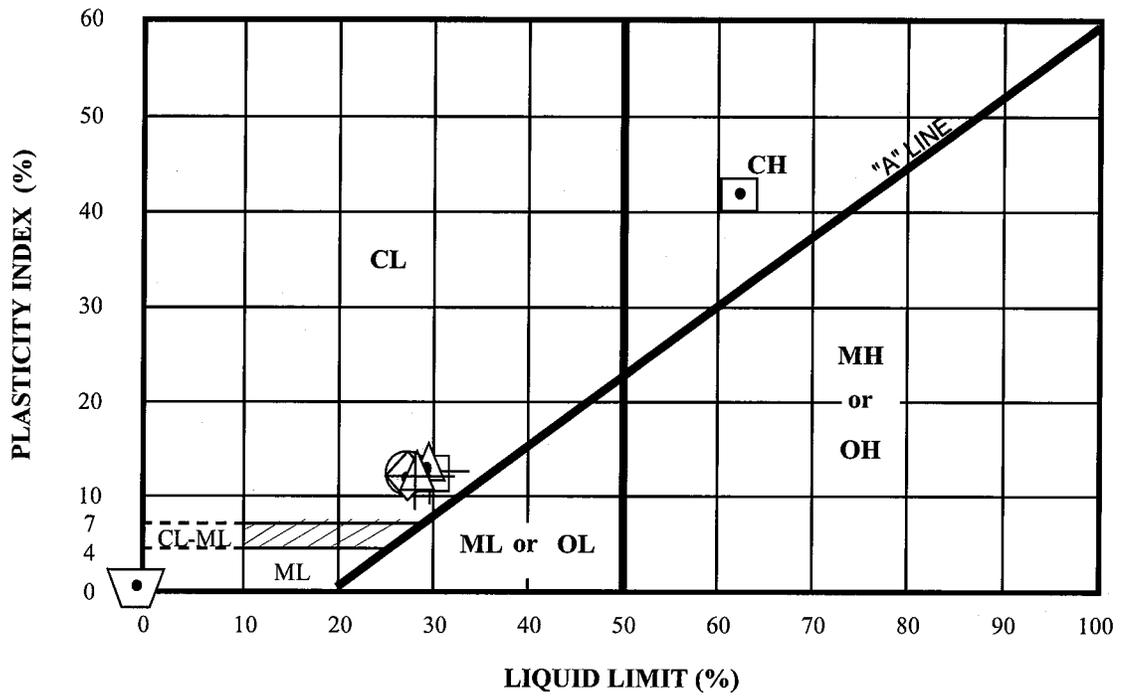
* Drilled with a B40 Truck Mounted Rig
 ▽ Water level as measured 0.25 hours after drilling

EQUIPMENT		8" Diameter Hollow Stem Auger*		ELEVATION		---		LOGGED BY		JH		
DEPTH TO GROUNDWATER		Not Enc.		DEPTH TO BEDROCK		Not Enc.		DATE DRILLED		2/18/2015		
DESCRIPTION AND CLASSIFICATION												
DESCRIPTION AND REMARKS				COLOR	CONSIST.	SOIL TYPE	DEPTH (feet)	SAMPLER	PENETRATION RESISTANCE (BLOWS/FT)	WATER CONTENT (%)	DRY DENSITY (PCF)	SHEAR STRENGTH (KSF)
Grass Lawn				Light Olive Brown to Brown	Loose	SC	1	[SAMPLER LOG]	6	14	107	
CLAYEY SAND, moist, fine to medium grained sand, subangular to subrounded gravel up to 1/4" diameter, occasional iron staining												
@1.5': Finer than #4 = 80% Finer than #200 = 28% Free Swell = 40%												
↑ Fill												
SILTY SAND, moist, fine grained sand, silty clay fragments, iron staining												
SILTY CLAY, moist, fine grained sand (Bay Mud)												
Bottom of Boring = 6.5'				Yellowish Brown	Loose	SM	4	5	13			
				Dark Grayish Brown to Grayish	Soft	CH	5	6	23	57	96	63
							6	X	3	57		
							7					
							8					
							9					
							10					
							11					
							12					
							13					
							14					
							15					
							16					
							17					
							18					
							19					
							20					

* Drilled with a B40 Truck Mounted Rig

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITION MAY BE GRADUAL

 CLEARY CONSULTANTS, INC. <i>Geotechnical Engineers and Geologists</i>		LOG OF EXPLORATORY BORING NO. 10 ATHLETIC FIELD COMPLEX RENOVATIONS Estuary Park Alameda, California			
		APPROVED BY	SCALE	PROJECT NO.	DATE
GF		---	1369.1	May 2015	19



KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %	PASSING NO. 200 SIEVE %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
	1	1.5	15	30	13	26	-0.2	SC*
	1	9.5	76	63	41	84	1.3	CH
	4	1.5	13	27	11	28	-0.3	SC*
	5	4.5	16	0	0	11	---	SM*
	6	1.5	13	27	11	33	-0.3	SC*
	8	1.5	12	28	12	28	-0.3	SC*
	9	1.5	14	29	13	28	-0.2	SC*

*Classified as coarse-grained soil since less than 50% passes #200 sieve

 **CLEARY CONSULTANTS, INC.**
Geotechnical Engineers and Geologists

PLASTICITY CHART

ATHLETIC FIELD COMPLEX RENOVATIONS
Estuary Park
Alameda, California

PROJECT NO.

1369.1

DATE

May 2015

DRAWING NO.

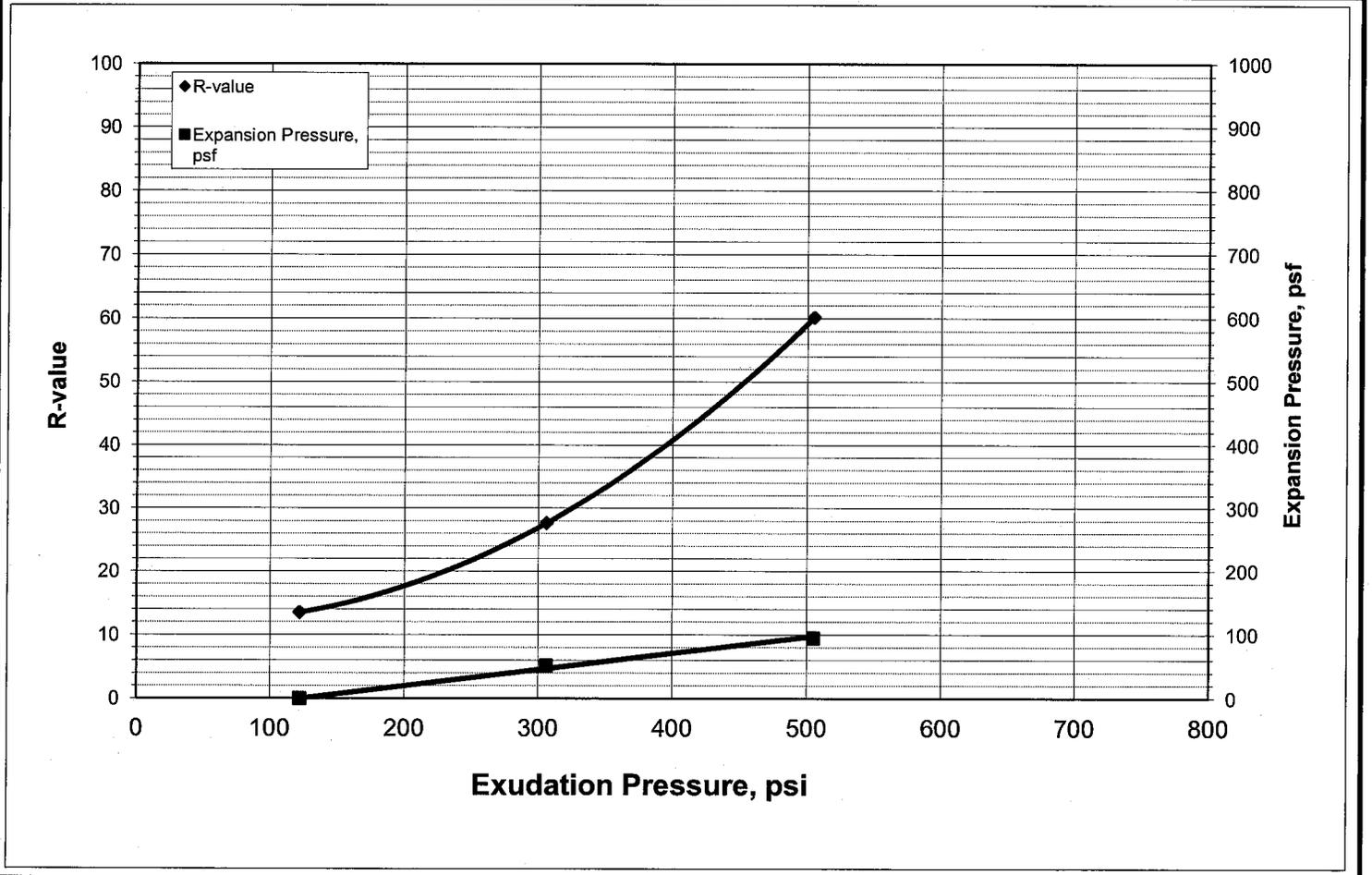
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R-value Test Report (Caltrans 301)

Job No.: 018-772	Date: 03/05/15	Initial Moisture, <u>9.1%</u>
Client: Cleary Consultants	Tested MD	R-value by Stabilometer 27
Project: Estuary Park Athletic Field Complex - 1369.1	Reduced RU	
Sample EB-1 to EB-10 @ 0.5-1.5'	Checked DC	Expansion Pressure 40 psf
Soil Type: Olive Clayey SAND (Silty)		

Specimen Number	A	B	C	D	Remarks:
Exudation Pressure, psi	306	122	505		
Prepared Weight, grams	1200	1200	1200		
Final Water Added, grams/cc	54	82	40		
Weight of Soil & Mold, grams	3201	3099	3137		
Weight of Mold, grams	2098	2065	2099		
Height After Compaction, in.	2.55	2.45	2.47		
Moisture Content, %	14.1	16.6	12.8		
Dry Density, pcf	114.8	109.6	112.8		
Expansion Pressure, psf	51.6	0.0	94.6		
Stabilometer @ 1000					
Stabilometer @ 2000	97	124	45		
Turns Displacement	4.25	4.55	4.1		
R-value	28	13	60		

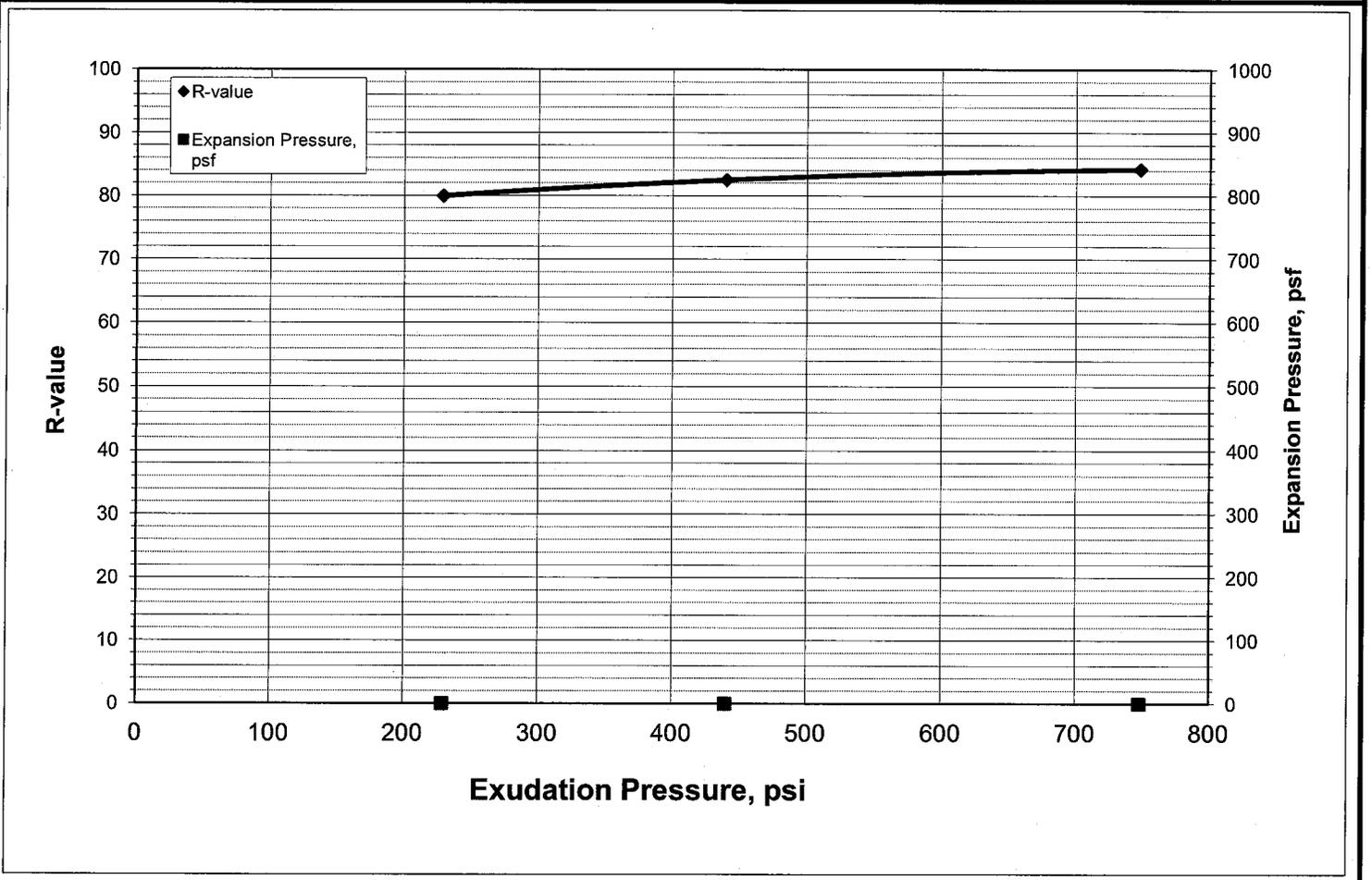




R-value Test Report (Caltrans 301)

Job No.:	018-772	Date:	03/11/15	Initial Moisture,	15.7%
Client:	Cleary Consultants	Tested	MD	R-value by Stabilometer	81
Project:	Estuary Park Athletic Field Complex - 1369.1	Reduced	RU	Expansion Pressure	0 psf
Sample	EB-1 to EB-10 @ 0.5-1.5'	Checked	DC		
Soil Type: Olive Clayey SAND (Silty) (+2.5% HCQ, +2.5% Cement)					

Specimen Number	A	B	C	D	Remarks:
Exudation Pressure, psi	229	748	440		
Prepared Weight, grams	1200	1200	1200		
Final Water Added, grams/cc	16	5	10		
Weight of Soil & Mold, grams	3027	3023	3054		
Weight of Mold, grams	2077	2064	2099		
Height After Compaction, in.	2.32	2.4	2.35		
Moisture Content, %	17.2	16.1	16.6		
Dry Density, pcf	105.8	104.2	105.5		
Expansion Pressure, psf	0.0	0.0	0.0		
Stabilometer @ 1000					
Stabilometer @ 2000	21	17	19.3		
Turns Displacement	3.65	3.7	3.5		
R-value	80	84	82		



APPENDIX A

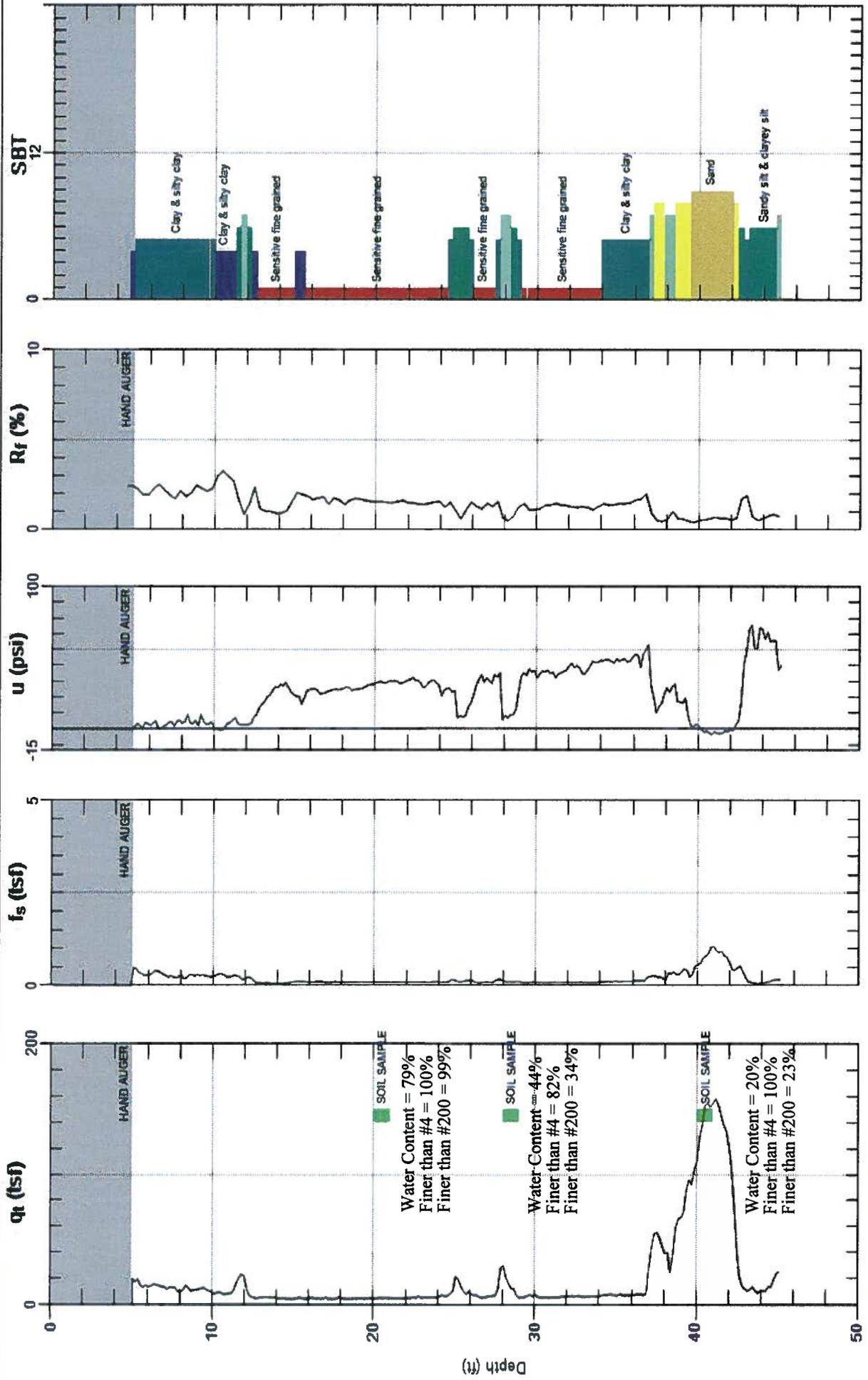
**Estuary Park Athletic Complex Renovation, Alameda,
CPT-1 and CPT-2 Soundings,
Performed February 20, 2015**



CLEARY CONSULTANTS

Site: ESTUARY PARK
Sounding: CPT-1

Engineer: G.FOSTER
Date: 2/20/2015 08:01



Max. Depth: 45.112 (ft)
Avg. Interval: 0.328 (ft)

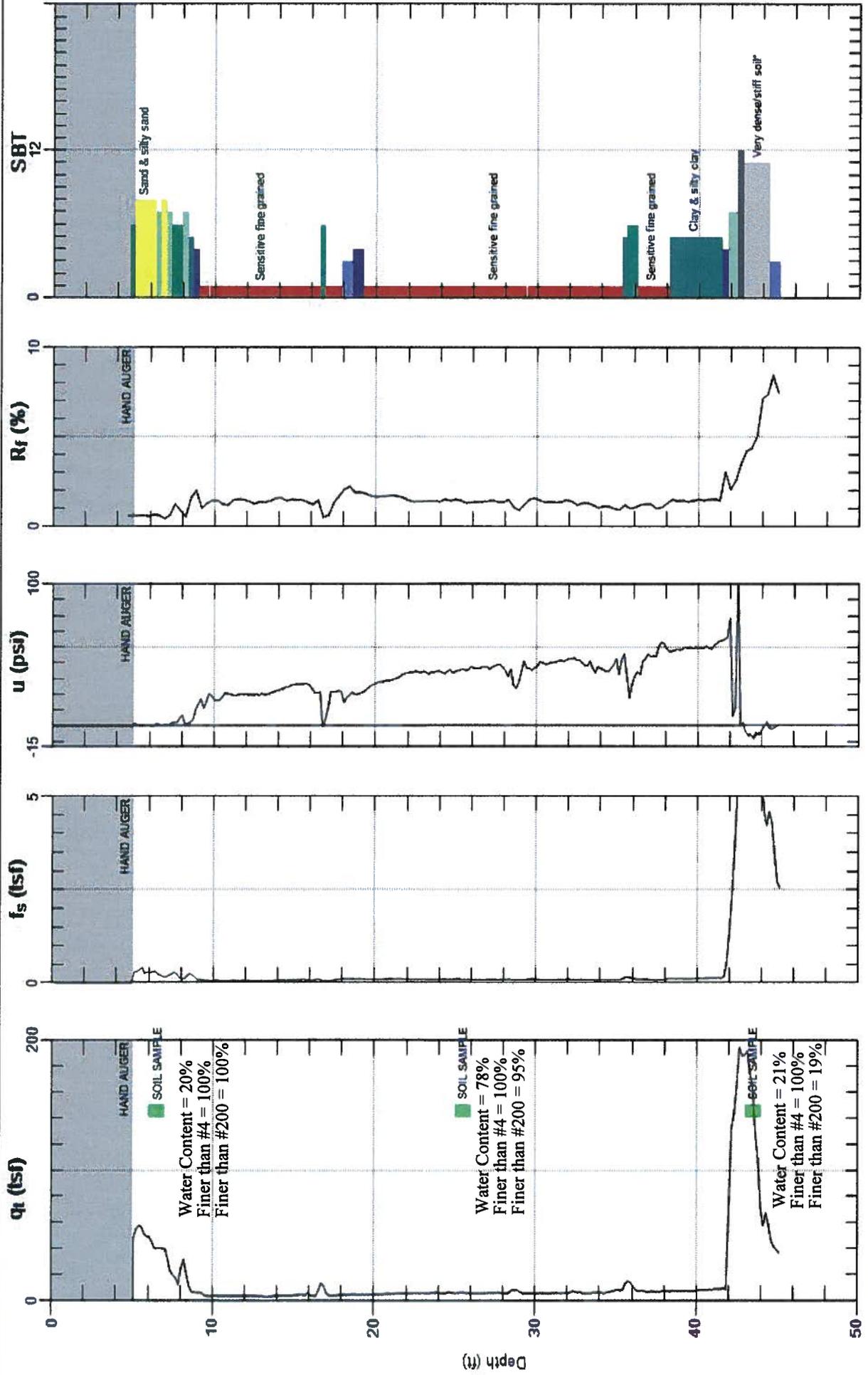
SBT: Soil Behavior Type (Robertson 1990)



CLEARY CONSULTANTS

Site: ESTUARY PARK
Sounding: CPT-2

Engineer: G.FOSTER
Date: 2/20/2015 10:25



Max Depth: 45.112 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

APPENDIX B

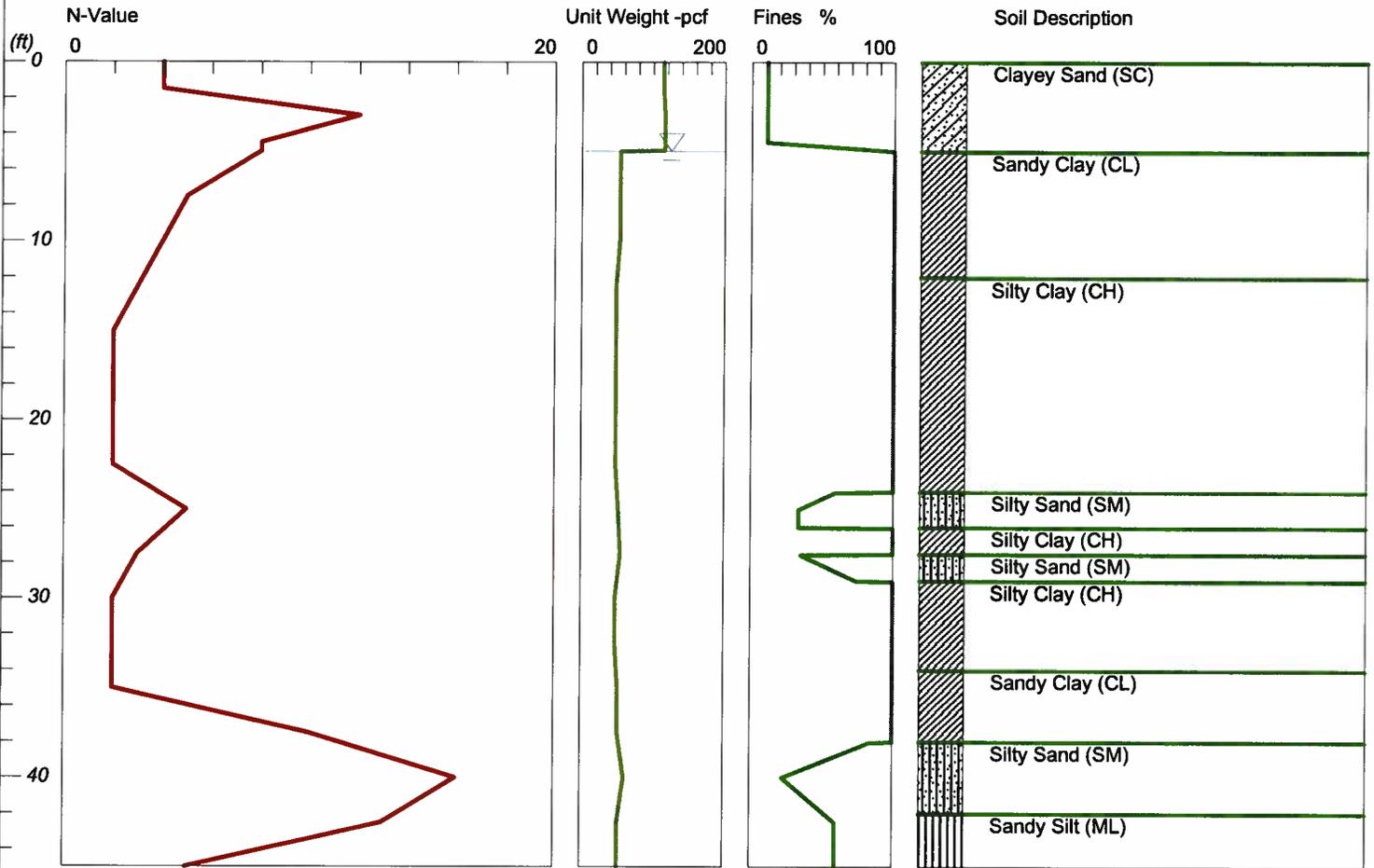
**Estuary Park Athletic Complex Renovation, Alameda,
Liquefaction and Dry Settlement Analyses and Calculations,
CPT-1 and CPT-2,
Performed February 20, 2015**

LIQUEFACTION ANALYSIS

Estuary Park

Hole No.=CPT-1 Water Depth=5 ft

Magnitude=8.5
Acceleration=0.515g



SPT or BPT test

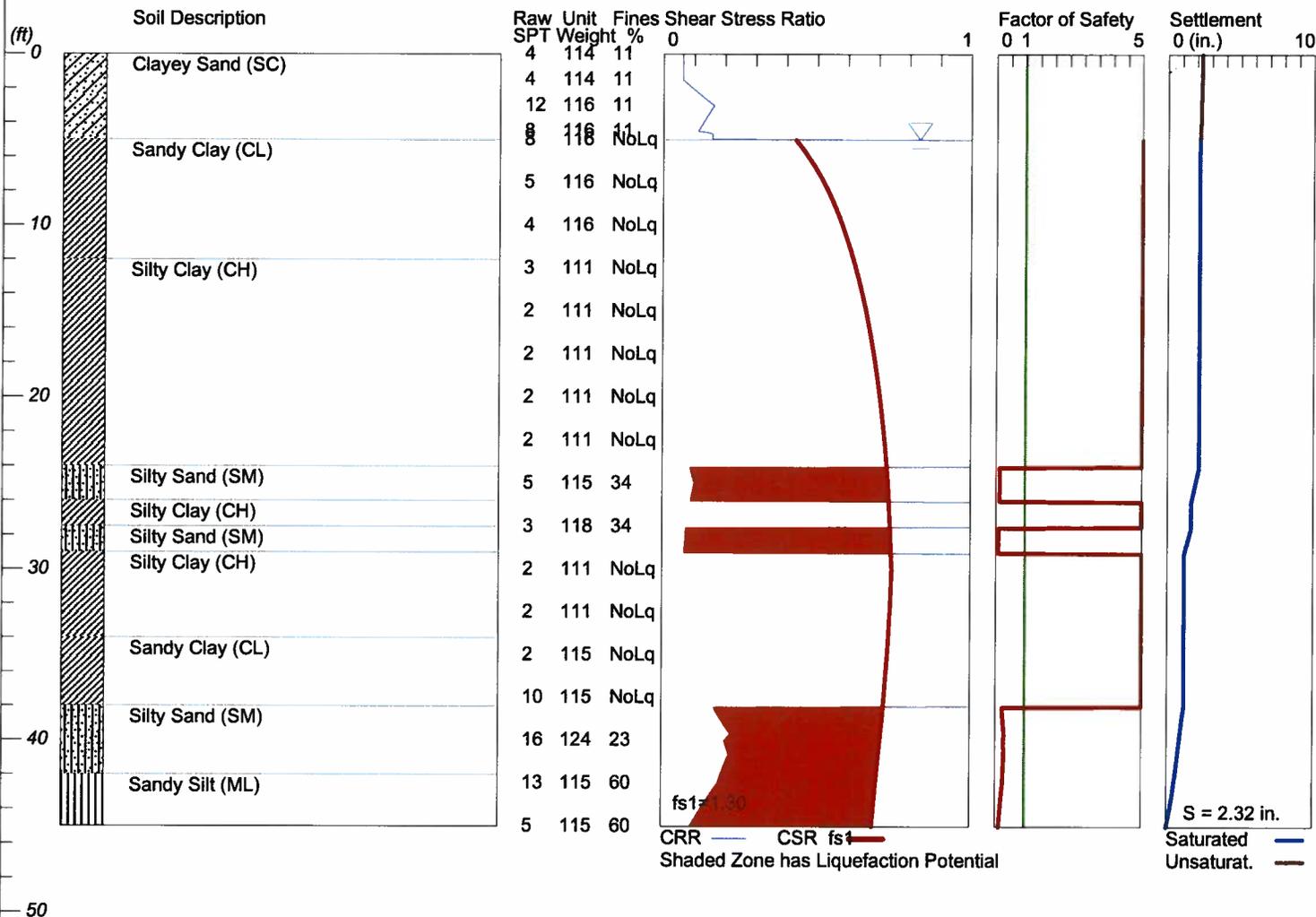
LiquefyPro CivilTech Software USA www.civilttech.com

LIQUEFACTION ANALYSIS

Estuary Park

Hole No.=CPT-1 Water Depth=5 ft

Magnitude=8.5
Acceleration=0.515g



Estuary Park CPT1 no CH.sum

LIQUEFACTION ANALYSIS SUMMARY

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CH.liq Input File Name: C:\Grant Roughs\Liquefy Pro Data Files\Estuary Park CPT1 no
Title: Estuary Park
Subtitle:

Surface Elev.=
Hole No.=CPT-1
Depth of Hole= 45.00 ft
Water Table during Earthquake= 5.00 ft
Water Table during In-Situ Testing= 5.00 ft
Max. Acceleration= 0.51 g
Earthquake Magnitude= 8.50

Input Data:

Surface Elev.=
Hole No.=CPT-1
Depth of Hole=45.00 ft
Water Table during Earthquake= 5.00 ft
Water Table during In-Situ Testing= 5.00 ft
Max. Acceleration=0.51 g
Earthquake Magnitude=8.50
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

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

Ce = 1.25
Cb= 1
Cs= 1

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	4.00	114.00	11.00
1.50	4.00	114.00	11.00
3.00	12.00	116.00	11.00
4.50	8.00	116.00	11.00
5.00	8.00	116.00	NoLiq
7.50	5.00	116.00	NoLiq
10.00	4.00	116.00	NoLiq
12.50	3.00	111.00	NoLiq
15.00	2.00	111.00	NoLiq

Estuary Park CPT1 no CH.sum

17.50	2.00	111.00	NoLiq
20.00	2.00	111.00	NoLiq
22.50	2.00	111.00	NoLiq
25.00	5.00	115.00	34.00
27.50	3.00	118.00	34.00
30.00	2.00	111.00	NoLiq
32.50	2.00	111.00	NoLiq
35.00	2.00	115.00	NoLiq
37.50	10.00	115.00	NoLiq
40.00	16.00	124.00	23.00
42.50	13.00	115.00	60.00
45.00	5.00	115.00	60.00

Output Results:

Settlement of Saturated Sands=2.19 in.
 Settlement of Unsaturated Sands=0.14 in.
 Total Settlement of Saturated and Unsaturated Sands=2.32 in.
 Differential Settlement=1.161 to 1.532 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	s_all in.
0.00	0.06	0.44	5.00	2.19	0.14	2.32
0.05	0.06	0.44	5.00	2.19	0.14	2.32
0.10	0.06	0.44	5.00	2.19	0.14	2.32
0.15	0.06	0.44	5.00	2.19	0.14	2.32
0.20	0.06	0.43	5.00	2.19	0.13	2.32
0.25	0.06	0.43	5.00	2.19	0.13	2.32
0.30	0.06	0.43	5.00	2.19	0.13	2.32
0.35	0.06	0.43	5.00	2.19	0.13	2.32
0.40	0.06	0.43	5.00	2.19	0.13	2.32
0.45	0.06	0.43	5.00	2.19	0.13	2.32
0.50	0.06	0.43	5.00	2.19	0.13	2.32
0.55	0.06	0.43	5.00	2.19	0.13	2.32
0.60	0.06	0.43	5.00	2.19	0.13	2.31
0.65	0.06	0.43	5.00	2.19	0.13	2.31
0.70	0.06	0.43	5.00	2.19	0.13	2.31
0.75	0.06	0.43	5.00	2.19	0.13	2.31
0.80	0.06	0.43	5.00	2.19	0.12	2.31
0.85	0.06	0.43	5.00	2.19	0.12	2.31
0.90	0.06	0.43	5.00	2.19	0.12	2.31
0.95	0.06	0.43	5.00	2.19	0.12	2.31
1.00	0.06	0.43	5.00	2.19	0.12	2.31
1.05	0.06	0.43	5.00	2.19	0.12	2.30
1.10	0.06	0.43	5.00	2.19	0.12	2.30
1.15	0.06	0.43	5.00	2.19	0.12	2.30
1.20	0.06	0.43	5.00	2.19	0.11	2.30
1.25	0.06	0.43	5.00	2.19	0.11	2.30
1.30	0.06	0.43	5.00	2.19	0.11	2.30
1.35	0.06	0.43	5.00	2.19	0.11	2.30
1.40	0.06	0.43	5.00	2.19	0.11	2.29
1.45	0.06	0.43	5.00	2.19	0.11	2.29
1.50	0.06	0.43	5.00	2.19	0.11	2.29
1.55	0.07	0.43	5.00	2.19	0.10	2.29
1.60	0.07	0.43	5.00	2.19	0.10	2.29
1.65	0.07	0.43	5.00	2.19	0.10	2.29
1.70	0.07	0.43	5.00	2.19	0.10	2.28
1.75	0.08	0.43	5.00	2.19	0.10	2.28
1.80	0.08	0.43	5.00	2.19	0.10	2.28
1.85	0.08	0.43	5.00	2.19	0.09	2.28
1.90	0.09	0.43	5.00	2.19	0.09	2.28
1.95	0.09	0.43	5.00	2.19	0.09	2.28

Estuary Park CPT1 no CH.sum						
2.00	0.10	0.43	5.00	2.19	0.09	2.28
2.05	0.10	0.43	5.00	2.19	0.09	2.28
2.10	0.10	0.43	5.00	2.19	0.09	2.27
2.15	0.11	0.43	5.00	2.19	0.09	2.27
2.20	0.11	0.43	5.00	2.19	0.09	2.27
2.25	0.11	0.43	5.00	2.19	0.09	2.27
2.30	0.12	0.43	5.00	2.19	0.08	2.27
2.35	0.12	0.43	5.00	2.19	0.08	2.27
2.40	0.12	0.43	5.00	2.19	0.08	2.27
2.45	0.13	0.43	5.00	2.19	0.08	2.27
2.50	0.13	0.43	5.00	2.19	0.08	2.27
2.55	0.13	0.43	5.00	2.19	0.08	2.27
2.60	0.14	0.43	5.00	2.19	0.08	2.27
2.65	0.14	0.43	5.00	2.19	0.08	2.26
2.70	0.14	0.43	5.00	2.19	0.08	2.26
2.75	0.15	0.43	5.00	2.19	0.08	2.26
2.80	0.15	0.43	5.00	2.19	0.08	2.26
2.85	0.15	0.43	5.00	2.19	0.08	2.26
2.90	0.16	0.43	5.00	2.19	0.08	2.26
2.95	0.16	0.43	5.00	2.19	0.08	2.26
3.00	0.16	0.43	5.00	2.19	0.08	2.26
3.05	0.16	0.43	5.00	2.19	0.07	2.26
3.10	0.16	0.43	5.00	2.19	0.07	2.26
3.15	0.16	0.43	5.00	2.19	0.07	2.26
3.20	0.16	0.43	5.00	2.19	0.07	2.26
3.25	0.15	0.43	5.00	2.19	0.07	2.26
3.30	0.15	0.43	5.00	2.19	0.07	2.26
3.35	0.15	0.43	5.00	2.19	0.07	2.26
3.40	0.15	0.43	5.00	2.19	0.07	2.26
3.45	0.15	0.43	5.00	2.19	0.07	2.25
3.50	0.15	0.43	5.00	2.19	0.07	2.25
3.55	0.14	0.43	5.00	2.19	0.07	2.25
3.60	0.14	0.43	5.00	2.19	0.07	2.25
3.65	0.14	0.43	5.00	2.19	0.06	2.25
3.70	0.14	0.43	5.00	2.19	0.06	2.25
3.75	0.14	0.43	5.00	2.19	0.06	2.25
3.80	0.14	0.43	5.00	2.19	0.06	2.24
3.85	0.13	0.43	5.00	2.19	0.06	2.24
3.90	0.13	0.43	5.00	2.19	0.05	2.24
3.95	0.13	0.43	5.00	2.19	0.05	2.24
4.00	0.13	0.43	5.00	2.19	0.05	2.23
4.05	0.13	0.43	5.00	2.19	0.04	2.23
4.10	0.13	0.43	5.00	2.19	0.04	2.22
4.15	0.12	0.43	5.00	2.19	0.03	2.22
4.20	0.12	0.43	5.00	2.19	0.02	2.21
4.25	0.12	0.43	5.00	2.19	0.01	2.20
4.30	0.12	0.43	5.00	2.19	0.01	2.20
4.35	0.12	0.43	5.00	2.19	0.01	2.20
4.40	0.12	0.43	5.00	2.19	0.01	2.20
4.45	0.11	0.43	5.00	2.19	0.01	2.19
4.50	0.11	0.43	5.00	2.19	0.01	2.19
4.55	0.14	0.43	5.00	2.19	0.01	2.19
4.60	0.15	0.43	5.00	2.19	0.01	2.19
4.65	0.16	0.43	5.00	2.19	0.00	2.19
4.70	0.16	0.43	5.00	2.19	0.00	2.19
4.75	0.16	0.43	5.00	2.19	0.00	2.19
4.80	0.16	0.43	5.00	2.19	0.00	2.19
4.85	0.16	0.43	5.00	2.19	0.00	2.19
4.90	0.16	0.43	5.00	2.19	0.00	2.19
4.95	0.16	0.43	5.00	2.19	0.00	2.19
5.00	2.00	0.43	5.00	2.19	0.00	2.19
5.05	2.00	0.43	5.00	2.19	0.00	2.19
5.10	2.00	0.43	5.00	2.19	0.00	2.19

Estuary Park CPT1 no CH.sum

5.15	2.00	0.44	5.00	2.19	0.00	2.19
5.20	2.00	0.44	5.00	2.19	0.00	2.19
5.25	2.00	0.44	5.00	2.19	0.00	2.19
5.30	2.00	0.44	5.00	2.19	0.00	2.19
5.35	2.00	0.45	5.00	2.19	0.00	2.19
5.40	2.00	0.45	5.00	2.19	0.00	2.19
5.45	2.00	0.45	5.00	2.19	0.00	2.19
5.50	2.00	0.45	5.00	2.19	0.00	2.19
5.55	2.00	0.45	5.00	2.19	0.00	2.19
5.60	2.00	0.46	5.00	2.19	0.00	2.19
5.65	2.00	0.46	5.00	2.19	0.00	2.19
5.70	2.00	0.46	5.00	2.19	0.00	2.19
5.75	2.00	0.46	5.00	2.19	0.00	2.19
5.80	2.00	0.46	5.00	2.19	0.00	2.19
5.85	2.00	0.47	5.00	2.19	0.00	2.19
5.90	2.00	0.47	5.00	2.19	0.00	2.19
5.95	2.00	0.47	5.00	2.19	0.00	2.19
6.00	2.00	0.47	5.00	2.19	0.00	2.19
6.05	2.00	0.47	5.00	2.19	0.00	2.19
6.10	2.00	0.48	5.00	2.19	0.00	2.19
6.15	2.00	0.48	5.00	2.19	0.00	2.19
6.20	2.00	0.48	5.00	2.19	0.00	2.19
6.25	2.00	0.48	5.00	2.19	0.00	2.19
6.30	2.00	0.48	5.00	2.19	0.00	2.19
6.35	2.00	0.48	5.00	2.19	0.00	2.19
6.40	2.00	0.49	5.00	2.19	0.00	2.19
6.45	2.00	0.49	5.00	2.19	0.00	2.19
6.50	2.00	0.49	5.00	2.19	0.00	2.19
6.55	2.00	0.49	5.00	2.19	0.00	2.19
6.60	2.00	0.49	5.00	2.19	0.00	2.19
6.65	2.00	0.49	5.00	2.19	0.00	2.19
6.70	2.00	0.50	5.00	2.19	0.00	2.19
6.75	2.00	0.50	5.00	2.19	0.00	2.19
6.80	2.00	0.50	5.00	2.19	0.00	2.19
6.85	2.00	0.50	5.00	2.19	0.00	2.19
6.90	2.00	0.50	5.00	2.19	0.00	2.19
6.95	2.00	0.50	5.00	2.19	0.00	2.19
7.00	2.00	0.51	5.00	2.19	0.00	2.19
7.05	2.00	0.51	5.00	2.19	0.00	2.19
7.10	2.00	0.51	5.00	2.19	0.00	2.19
7.15	2.00	0.51	5.00	2.19	0.00	2.19
7.20	2.00	0.51	5.00	2.19	0.00	2.19
7.25	2.00	0.51	5.00	2.19	0.00	2.19
7.30	2.00	0.52	5.00	2.19	0.00	2.19
7.35	2.00	0.52	5.00	2.19	0.00	2.19
7.40	2.00	0.52	5.00	2.19	0.00	2.19
7.45	2.00	0.52	5.00	2.19	0.00	2.19
7.50	2.00	0.52	5.00	2.19	0.00	2.19
7.55	2.00	0.52	5.00	2.19	0.00	2.19
7.60	2.00	0.52	5.00	2.19	0.00	2.19
7.65	2.00	0.53	5.00	2.19	0.00	2.19
7.70	2.00	0.53	5.00	2.19	0.00	2.19
7.75	2.00	0.53	5.00	2.19	0.00	2.19
7.80	2.00	0.53	5.00	2.19	0.00	2.19
7.85	2.00	0.53	5.00	2.19	0.00	2.19
7.90	2.00	0.53	5.00	2.19	0.00	2.19
7.95	2.00	0.53	5.00	2.19	0.00	2.19
8.00	2.00	0.54	5.00	2.19	0.00	2.19
8.05	2.00	0.54	5.00	2.19	0.00	2.19
8.10	2.00	0.54	5.00	2.19	0.00	2.19
8.15	2.00	0.54	5.00	2.19	0.00	2.19
8.20	2.00	0.54	5.00	2.19	0.00	2.19
8.25	2.00	0.54	5.00	2.19	0.00	2.19

Estuary Park CPT1 no CH.sum						
8.30	2.00	0.54	5.00	2.19	0.00	2.19
8.35	2.00	0.54	5.00	2.19	0.00	2.19
8.40	2.00	0.55	5.00	2.19	0.00	2.19
8.45	2.00	0.55	5.00	2.19	0.00	2.19
8.50	2.00	0.55	5.00	2.19	0.00	2.19
8.55	2.00	0.55	5.00	2.19	0.00	2.19
8.60	2.00	0.55	5.00	2.19	0.00	2.19
8.65	2.00	0.55	5.00	2.19	0.00	2.19
8.70	2.00	0.55	5.00	2.19	0.00	2.19
8.75	2.00	0.55	5.00	2.19	0.00	2.19
8.80	2.00	0.56	5.00	2.19	0.00	2.19
8.85	2.00	0.56	5.00	2.19	0.00	2.19
8.90	2.00	0.56	5.00	2.19	0.00	2.19
8.95	2.00	0.56	5.00	2.19	0.00	2.19
9.00	2.00	0.56	5.00	2.19	0.00	2.19
9.05	2.00	0.56	5.00	2.19	0.00	2.19
9.10	2.00	0.56	5.00	2.19	0.00	2.19
9.15	2.00	0.56	5.00	2.19	0.00	2.19
9.20	2.00	0.57	5.00	2.19	0.00	2.19
9.25	2.00	0.57	5.00	2.19	0.00	2.19
9.30	2.00	0.57	5.00	2.19	0.00	2.19
9.35	2.00	0.57	5.00	2.19	0.00	2.19
9.40	2.00	0.57	5.00	2.19	0.00	2.19
9.45	2.00	0.57	5.00	2.19	0.00	2.19
9.50	2.00	0.57	5.00	2.19	0.00	2.19
9.55	2.00	0.57	5.00	2.19	0.00	2.19
9.60	2.00	0.57	5.00	2.19	0.00	2.19
9.65	2.00	0.58	5.00	2.19	0.00	2.19
9.70	2.00	0.58	5.00	2.19	0.00	2.19
9.75	2.00	0.58	5.00	2.19	0.00	2.19
9.80	2.00	0.58	5.00	2.19	0.00	2.19
9.85	2.00	0.58	5.00	2.19	0.00	2.19
9.90	2.00	0.58	5.00	2.19	0.00	2.19
9.95	2.00	0.58	5.00	2.19	0.00	2.19
10.00	2.00	0.58	5.00	2.19	0.00	2.19
10.05	2.00	0.58	5.00	2.19	0.00	2.19
10.10	2.00	0.58	5.00	2.19	0.00	2.19
10.15	2.00	0.59	5.00	2.19	0.00	2.19
10.20	2.00	0.59	5.00	2.19	0.00	2.19
10.25	2.00	0.59	5.00	2.19	0.00	2.19
10.30	2.00	0.59	5.00	2.19	0.00	2.19
10.35	2.00	0.59	5.00	2.19	0.00	2.19
10.40	2.00	0.59	5.00	2.19	0.00	2.19
10.45	2.00	0.59	5.00	2.19	0.00	2.19
10.50	2.00	0.59	5.00	2.19	0.00	2.19
10.55	2.00	0.59	5.00	2.19	0.00	2.19
10.60	2.00	0.59	5.00	2.19	0.00	2.19
10.65	2.00	0.59	5.00	2.19	0.00	2.19
10.70	2.00	0.60	5.00	2.19	0.00	2.19
10.75	2.00	0.60	5.00	2.19	0.00	2.19
10.80	2.00	0.60	5.00	2.19	0.00	2.19
10.85	2.00	0.60	5.00	2.19	0.00	2.19
10.90	2.00	0.60	5.00	2.19	0.00	2.19
10.95	2.00	0.60	5.00	2.19	0.00	2.19
11.00	2.00	0.60	5.00	2.19	0.00	2.19
11.05	2.00	0.60	5.00	2.19	0.00	2.19
11.10	2.00	0.60	5.00	2.19	0.00	2.19
11.15	2.00	0.60	5.00	2.19	0.00	2.19
11.20	2.00	0.60	5.00	2.19	0.00	2.19
11.25	2.00	0.61	5.00	2.19	0.00	2.19
11.30	2.00	0.61	5.00	2.19	0.00	2.19
11.35	2.00	0.61	5.00	2.19	0.00	2.19
11.40	2.00	0.61	5.00	2.19	0.00	2.19

Estuary Park CPT1 no CH.sum

11.45	2.00	0.61	5.00	2.19	0.00	2.19
11.50	2.00	0.61	5.00	2.19	0.00	2.19
11.55	2.00	0.61	5.00	2.19	0.00	2.19
11.60	2.00	0.61	5.00	2.19	0.00	2.19
11.65	2.00	0.61	5.00	2.19	0.00	2.19
11.70	2.00	0.61	5.00	2.19	0.00	2.19
11.75	2.00	0.61	5.00	2.19	0.00	2.19
11.80	2.00	0.61	5.00	2.19	0.00	2.19
11.85	2.00	0.62	5.00	2.19	0.00	2.19
11.90	2.00	0.62	5.00	2.19	0.00	2.19
11.95	2.00	0.62	5.00	2.19	0.00	2.19
12.00	2.00	0.62	5.00	2.19	0.00	2.19
12.05	2.00	0.62	5.00	2.19	0.00	2.19
12.10	2.00	0.62	5.00	2.19	0.00	2.19
12.15	2.00	0.62	5.00	2.19	0.00	2.19
12.20	2.00	0.62	5.00	2.19	0.00	2.19
12.25	2.00	0.62	5.00	2.19	0.00	2.19
12.30	2.00	0.62	5.00	2.19	0.00	2.19
12.35	2.00	0.62	5.00	2.19	0.00	2.19
12.40	2.00	0.62	5.00	2.19	0.00	2.19
12.45	2.00	0.63	5.00	2.19	0.00	2.19
12.50	2.00	0.63	5.00	2.19	0.00	2.19
12.55	2.00	0.63	5.00	2.19	0.00	2.19
12.60	2.00	0.63	5.00	2.19	0.00	2.19
12.65	2.00	0.63	5.00	2.19	0.00	2.19
12.70	2.00	0.63	5.00	2.19	0.00	2.19
12.75	2.00	0.63	5.00	2.19	0.00	2.19
12.80	2.00	0.63	5.00	2.19	0.00	2.19
12.85	2.00	0.63	5.00	2.19	0.00	2.19
12.90	2.00	0.63	5.00	2.19	0.00	2.19
12.95	2.00	0.63	5.00	2.19	0.00	2.19
13.00	2.00	0.63	5.00	2.19	0.00	2.19
13.05	2.00	0.63	5.00	2.19	0.00	2.19
13.10	2.00	0.64	5.00	2.19	0.00	2.19
13.15	2.00	0.64	5.00	2.19	0.00	2.19
13.20	2.00	0.64	5.00	2.19	0.00	2.19
13.25	2.00	0.64	5.00	2.19	0.00	2.19
13.30	2.00	0.64	5.00	2.19	0.00	2.19
13.35	2.00	0.64	5.00	2.19	0.00	2.19
13.40	2.00	0.64	5.00	2.19	0.00	2.19
13.45	2.00	0.64	5.00	2.19	0.00	2.19
13.50	2.00	0.64	5.00	2.19	0.00	2.19
13.55	2.00	0.64	5.00	2.19	0.00	2.19
13.60	2.00	0.64	5.00	2.19	0.00	2.19
13.65	2.00	0.64	5.00	2.19	0.00	2.19
13.70	2.00	0.64	5.00	2.19	0.00	2.19
13.75	2.00	0.64	5.00	2.19	0.00	2.19
13.80	2.00	0.64	5.00	2.19	0.00	2.19
13.85	2.00	0.65	5.00	2.19	0.00	2.19
13.90	2.00	0.65	5.00	2.19	0.00	2.19
13.95	2.00	0.65	5.00	2.19	0.00	2.19
14.00	2.00	0.65	5.00	2.19	0.00	2.19
14.05	2.00	0.65	5.00	2.19	0.00	2.19
14.10	2.00	0.65	5.00	2.19	0.00	2.19
14.15	2.00	0.65	5.00	2.19	0.00	2.19
14.20	2.00	0.65	5.00	2.19	0.00	2.19
14.25	2.00	0.65	5.00	2.19	0.00	2.19
14.30	2.00	0.65	5.00	2.19	0.00	2.19
14.35	2.00	0.65	5.00	2.19	0.00	2.19
14.40	2.00	0.65	5.00	2.19	0.00	2.19
14.45	2.00	0.65	5.00	2.19	0.00	2.19
14.50	2.00	0.65	5.00	2.19	0.00	2.19
14.55	2.00	0.65	5.00	2.19	0.00	2.19

Estuary Park CPT1 no CH.sum

14.60	2.00	0.65	5.00	2.19	0.00	2.19
14.65	2.00	0.66	5.00	2.19	0.00	2.19
14.70	2.00	0.66	5.00	2.19	0.00	2.19
14.75	2.00	0.66	5.00	2.19	0.00	2.19
14.80	2.00	0.66	5.00	2.19	0.00	2.19
14.85	2.00	0.66	5.00	2.19	0.00	2.19
14.90	2.00	0.66	5.00	2.19	0.00	2.19
14.95	2.00	0.66	5.00	2.19	0.00	2.19
15.00	2.00	0.66	5.00	2.19	0.00	2.19
15.05	2.00	0.66	5.00	2.19	0.00	2.19
15.10	2.00	0.66	5.00	2.19	0.00	2.19
15.15	2.00	0.66	5.00	2.19	0.00	2.19
15.20	2.00	0.66	5.00	2.19	0.00	2.19
15.25	2.00	0.66	5.00	2.19	0.00	2.19
15.30	2.00	0.66	5.00	2.19	0.00	2.19
15.35	2.00	0.66	5.00	2.19	0.00	2.19
15.40	2.00	0.66	5.00	2.19	0.00	2.19
15.45	2.00	0.66	5.00	2.19	0.00	2.19
15.50	2.00	0.67	5.00	2.19	0.00	2.19
15.55	2.00	0.67	5.00	2.19	0.00	2.19
15.60	2.00	0.67	5.00	2.19	0.00	2.19
15.65	2.00	0.67	5.00	2.19	0.00	2.19
15.70	2.00	0.67	5.00	2.19	0.00	2.19
15.75	2.00	0.67	5.00	2.19	0.00	2.19
15.80	2.00	0.67	5.00	2.19	0.00	2.19
15.85	2.00	0.67	5.00	2.19	0.00	2.19
15.90	2.00	0.67	5.00	2.19	0.00	2.19
15.95	2.00	0.67	5.00	2.19	0.00	2.19
16.00	2.00	0.67	5.00	2.19	0.00	2.19
16.05	2.00	0.67	5.00	2.19	0.00	2.19
16.10	2.00	0.67	5.00	2.19	0.00	2.19
16.15	2.00	0.67	5.00	2.19	0.00	2.19
16.20	2.00	0.67	5.00	2.19	0.00	2.19
16.25	2.00	0.67	5.00	2.19	0.00	2.19
16.30	2.00	0.67	5.00	2.19	0.00	2.19
16.35	2.00	0.67	5.00	2.19	0.00	2.19
16.40	2.00	0.68	5.00	2.19	0.00	2.19
16.45	2.00	0.68	5.00	2.19	0.00	2.19
16.50	2.00	0.68	5.00	2.19	0.00	2.19
16.55	2.00	0.68	5.00	2.19	0.00	2.19
16.60	2.00	0.68	5.00	2.19	0.00	2.19
16.65	2.00	0.68	5.00	2.19	0.00	2.19
16.70	2.00	0.68	5.00	2.19	0.00	2.19
16.75	2.00	0.68	5.00	2.19	0.00	2.19
16.80	2.00	0.68	5.00	2.19	0.00	2.19
16.85	2.00	0.68	5.00	2.19	0.00	2.19
16.90	2.00	0.68	5.00	2.19	0.00	2.19
16.95	2.00	0.68	5.00	2.19	0.00	2.19
17.00	2.00	0.68	5.00	2.19	0.00	2.19
17.05	2.00	0.68	5.00	2.19	0.00	2.19
17.10	2.00	0.68	5.00	2.19	0.00	2.19
17.15	2.00	0.68	5.00	2.19	0.00	2.19
17.20	2.00	0.68	5.00	2.19	0.00	2.19
17.25	2.00	0.68	5.00	2.19	0.00	2.19
17.30	2.00	0.68	5.00	2.19	0.00	2.19
17.35	2.00	0.68	5.00	2.19	0.00	2.19
17.40	2.00	0.68	5.00	2.19	0.00	2.19
17.45	2.00	0.69	5.00	2.19	0.00	2.19
17.50	2.00	0.69	5.00	2.19	0.00	2.19
17.55	2.00	0.69	5.00	2.19	0.00	2.19
17.60	2.00	0.69	5.00	2.19	0.00	2.19
17.65	2.00	0.69	5.00	2.19	0.00	2.19
17.70	2.00	0.69	5.00	2.19	0.00	2.19

Estuary Park CPT1 no CH.sum

17.75	2.00	0.69	5.00	2.19	0.00	2.19
17.80	2.00	0.69	5.00	2.19	0.00	2.19
17.85	2.00	0.69	5.00	2.19	0.00	2.19
17.90	2.00	0.69	5.00	2.19	0.00	2.19
17.95	2.00	0.69	5.00	2.19	0.00	2.19
18.00	2.00	0.69	5.00	2.19	0.00	2.19
18.05	2.00	0.69	5.00	2.19	0.00	2.19
18.10	2.00	0.69	5.00	2.19	0.00	2.19
18.15	2.00	0.69	5.00	2.19	0.00	2.19
18.20	2.00	0.69	5.00	2.19	0.00	2.19
18.25	2.00	0.69	5.00	2.19	0.00	2.19
18.30	2.00	0.69	5.00	2.19	0.00	2.19
18.35	2.00	0.69	5.00	2.19	0.00	2.19
18.40	2.00	0.69	5.00	2.19	0.00	2.19
18.45	2.00	0.69	5.00	2.19	0.00	2.19
18.50	2.00	0.69	5.00	2.19	0.00	2.19
18.55	2.00	0.69	5.00	2.19	0.00	2.19
18.60	2.00	0.69	5.00	2.19	0.00	2.19
18.65	2.00	0.70	5.00	2.19	0.00	2.19
18.70	2.00	0.70	5.00	2.19	0.00	2.19
18.75	2.00	0.70	5.00	2.19	0.00	2.19
18.80	2.00	0.70	5.00	2.19	0.00	2.19
18.85	2.00	0.70	5.00	2.19	0.00	2.19
18.90	2.00	0.70	5.00	2.19	0.00	2.19
18.95	2.00	0.70	5.00	2.19	0.00	2.19
19.00	2.00	0.70	5.00	2.19	0.00	2.19
19.05	2.00	0.70	5.00	2.19	0.00	2.19
19.10	2.00	0.70	5.00	2.19	0.00	2.19
19.15	2.00	0.70	5.00	2.19	0.00	2.19
19.20	2.00	0.70	5.00	2.19	0.00	2.19
19.25	2.00	0.70	5.00	2.19	0.00	2.19
19.30	2.00	0.70	5.00	2.19	0.00	2.19
19.35	2.00	0.70	5.00	2.19	0.00	2.19
19.40	2.00	0.70	5.00	2.19	0.00	2.19
19.45	2.00	0.70	5.00	2.19	0.00	2.19
19.50	2.00	0.70	5.00	2.19	0.00	2.19
19.55	2.00	0.70	5.00	2.19	0.00	2.19
19.60	2.00	0.70	5.00	2.19	0.00	2.19
19.65	2.00	0.70	5.00	2.19	0.00	2.19
19.70	2.00	0.70	5.00	2.19	0.00	2.19
19.75	2.00	0.70	5.00	2.19	0.00	2.19
19.80	2.00	0.70	5.00	2.19	0.00	2.19
19.85	2.00	0.70	5.00	2.19	0.00	2.19
19.90	2.00	0.70	5.00	2.19	0.00	2.19
19.95	2.00	0.71	5.00	2.19	0.00	2.19
20.00	2.00	0.71	5.00	2.19	0.00	2.19
20.05	2.00	0.71	5.00	2.19	0.00	2.19
20.10	2.00	0.71	5.00	2.19	0.00	2.19
20.15	2.00	0.71	5.00	2.19	0.00	2.19
20.20	2.00	0.71	5.00	2.19	0.00	2.19
20.25	2.00	0.71	5.00	2.19	0.00	2.19
20.30	2.00	0.71	5.00	2.19	0.00	2.19
20.35	2.00	0.71	5.00	2.19	0.00	2.19
20.40	2.00	0.71	5.00	2.19	0.00	2.19
20.45	2.00	0.71	5.00	2.19	0.00	2.19
20.50	2.00	0.71	5.00	2.19	0.00	2.19
20.55	2.00	0.71	5.00	2.19	0.00	2.19
20.60	2.00	0.71	5.00	2.19	0.00	2.19
20.65	2.00	0.71	5.00	2.19	0.00	2.19
20.70	2.00	0.71	5.00	2.19	0.00	2.19
20.75	2.00	0.71	5.00	2.19	0.00	2.19
20.80	2.00	0.71	5.00	2.19	0.00	2.19
20.85	2.00	0.71	5.00	2.19	0.00	2.19

Estuary Park CPT1 no CH.sum

20.90	2.00	0.71	5.00	2.19	0.00	2.19
20.95	2.00	0.71	5.00	2.19	0.00	2.19
21.00	2.00	0.71	5.00	2.19	0.00	2.19
21.05	2.00	0.71	5.00	2.19	0.00	2.19
21.10	2.00	0.71	5.00	2.19	0.00	2.19
21.15	2.00	0.71	5.00	2.19	0.00	2.19
21.20	2.00	0.71	5.00	2.19	0.00	2.19
21.25	2.00	0.71	5.00	2.19	0.00	2.19
21.30	2.00	0.71	5.00	2.19	0.00	2.19
21.35	2.00	0.71	5.00	2.19	0.00	2.19
21.40	2.00	0.71	5.00	2.19	0.00	2.19
21.45	2.00	0.72	5.00	2.19	0.00	2.19
21.50	2.00	0.72	5.00	2.19	0.00	2.19
21.55	2.00	0.72	5.00	2.19	0.00	2.19
21.60	2.00	0.72	5.00	2.19	0.00	2.19
21.65	2.00	0.72	5.00	2.19	0.00	2.19
21.70	2.00	0.72	5.00	2.19	0.00	2.19
21.75	2.00	0.72	5.00	2.19	0.00	2.19
21.80	2.00	0.72	5.00	2.19	0.00	2.19
21.85	2.00	0.72	5.00	2.19	0.00	2.19
21.90	2.00	0.72	5.00	2.19	0.00	2.19
21.95	2.00	0.72	5.00	2.19	0.00	2.19
22.00	2.00	0.72	5.00	2.19	0.00	2.19
22.05	2.00	0.72	5.00	2.19	0.00	2.19
22.10	2.00	0.72	5.00	2.19	0.00	2.19
22.15	2.00	0.72	5.00	2.19	0.00	2.19
22.20	2.00	0.72	5.00	2.19	0.00	2.19
22.25	2.00	0.72	5.00	2.19	0.00	2.19
22.30	2.00	0.72	5.00	2.19	0.00	2.19
22.35	2.00	0.72	5.00	2.19	0.00	2.19
22.40	2.00	0.72	5.00	2.19	0.00	2.19
22.45	2.00	0.72	5.00	2.19	0.00	2.19
22.50	2.00	0.72	5.00	2.19	0.00	2.19
22.55	2.00	0.72	5.00	2.19	0.00	2.19
22.60	2.00	0.72	5.00	2.19	0.00	2.19
22.65	2.00	0.72	5.00	2.19	0.00	2.19
22.70	2.00	0.72	5.00	2.19	0.00	2.19
22.75	2.00	0.72	5.00	2.19	0.00	2.19
22.80	2.00	0.72	5.00	2.19	0.00	2.19
22.85	2.00	0.72	5.00	2.19	0.00	2.19
22.90	2.00	0.72	5.00	2.19	0.00	2.19
22.95	2.00	0.72	5.00	2.19	0.00	2.19
23.00	2.00	0.72	5.00	2.19	0.00	2.19
23.05	2.00	0.72	5.00	2.19	0.00	2.19
23.10	2.00	0.72	5.00	2.19	0.00	2.19
23.15	2.00	0.72	5.00	2.19	0.00	2.19
23.20	2.00	0.73	5.00	2.19	0.00	2.19
23.25	2.00	0.73	5.00	2.19	0.00	2.19
23.30	2.00	0.73	5.00	2.19	0.00	2.19
23.35	2.00	0.73	5.00	2.19	0.00	2.19
23.40	2.00	0.73	5.00	2.19	0.00	2.19
23.45	2.00	0.73	5.00	2.19	0.00	2.19
23.50	2.00	0.73	5.00	2.19	0.00	2.19
23.55	2.00	0.73	5.00	2.19	0.00	2.19
23.60	2.00	0.73	5.00	2.19	0.00	2.19
23.65	2.00	0.73	5.00	2.19	0.00	2.19
23.70	2.00	0.73	5.00	2.19	0.00	2.19
23.75	2.00	0.73	5.00	2.19	0.00	2.19
23.80	2.00	0.73	5.00	2.19	0.00	2.19
23.85	2.00	0.73	5.00	2.19	0.00	2.19
23.90	2.00	0.73	5.00	2.19	0.00	2.19
23.95	2.00	0.73	5.00	2.19	0.00	2.19
24.00	2.00	0.73	5.00	2.19	0.00	2.19

Estuary Park CPT1 no CH.sum						
24.05	0.09	0.73	0.12*	2.19	0.00	2.19
24.10	0.09	0.73	0.12*	2.17	0.00	2.17
24.15	0.09	0.73	0.13*	2.16	0.00	2.16
24.20	0.09	0.73	0.13*	2.14	0.00	2.14
24.25	0.09	0.73	0.13*	2.13	0.00	2.13
24.30	0.09	0.73	0.13*	2.12	0.00	2.12
24.35	0.09	0.73	0.13*	2.10	0.00	2.10
24.40	0.10	0.73	0.13*	2.09	0.00	2.09
24.45	0.10	0.73	0.13*	2.07	0.00	2.07
24.50	0.10	0.73	0.13*	2.06	0.00	2.06
24.55	0.10	0.73	0.13*	2.05	0.00	2.05
24.60	0.10	0.73	0.13*	2.03	0.00	2.03
24.65	0.10	0.73	0.14*	2.02	0.00	2.02
24.70	0.10	0.73	0.14*	2.01	0.00	2.01
24.75	0.10	0.73	0.14*	2.00	0.00	2.00
24.80	0.10	0.73	0.14*	1.98	0.00	1.98
24.85	0.10	0.73	0.14*	1.97	0.00	1.97
24.90	0.10	0.73	0.14*	1.96	0.00	1.96
24.95	0.10	0.73	0.14*	1.94	0.00	1.94
25.00	0.10	0.73	0.14*	1.93	0.00	1.93
25.05	0.10	0.73	0.14*	1.92	0.00	1.92
25.10	0.10	0.73	0.14*	1.91	0.00	1.91
25.15	0.10	0.73	0.14*	1.89	0.00	1.89
25.20	0.10	0.73	0.14*	1.88	0.00	1.88
25.25	0.10	0.73	0.14*	1.87	0.00	1.87
25.30	0.10	0.73	0.14*	1.85	0.00	1.85
25.35	0.10	0.73	0.13*	1.84	0.00	1.84
25.40	0.10	0.73	0.13*	1.83	0.00	1.83
25.45	0.10	0.73	0.13*	1.81	0.00	1.81
25.50	0.10	0.73	0.13*	1.80	0.00	1.80
25.55	0.10	0.73	0.13*	1.79	0.00	1.79
25.60	0.10	0.73	0.13*	1.77	0.00	1.77
25.65	0.10	0.73	0.13*	1.76	0.00	1.76
25.70	0.09	0.74	0.13*	1.75	0.00	1.75
25.75	0.09	0.74	0.13*	1.73	0.00	1.73
25.80	0.09	0.74	0.13*	1.72	0.00	1.72
25.85	0.09	0.74	0.13*	1.71	0.00	1.71
25.90	0.09	0.74	0.13*	1.69	0.00	1.69
25.95	0.09	0.74	0.13*	1.68	0.00	1.68
26.00	0.09	0.74	0.12*	1.67	0.00	1.67
26.05	2.00	0.74	5.00	1.65	0.00	1.65
26.10	2.00	0.74	5.00	1.65	0.00	1.65
26.15	2.00	0.74	5.00	1.65	0.00	1.65
26.20	2.00	0.74	5.00	1.65	0.00	1.65
26.25	2.00	0.74	5.00	1.65	0.00	1.65
26.30	2.00	0.74	5.00	1.65	0.00	1.65
26.35	2.00	0.74	5.00	1.65	0.00	1.65
26.40	2.00	0.74	5.00	1.65	0.00	1.65
26.45	2.00	0.74	5.00	1.65	0.00	1.65
26.50	2.00	0.74	5.00	1.65	0.00	1.65
26.55	2.00	0.74	5.00	1.65	0.00	1.65
26.60	2.00	0.74	5.00	1.65	0.00	1.65
26.65	2.00	0.74	5.00	1.65	0.00	1.65
26.70	2.00	0.74	5.00	1.65	0.00	1.65
26.75	2.00	0.74	5.00	1.65	0.00	1.65
26.80	2.00	0.74	5.00	1.65	0.00	1.65
26.85	2.00	0.74	5.00	1.65	0.00	1.65
26.90	2.00	0.74	5.00	1.65	0.00	1.65
26.95	2.00	0.74	5.00	1.65	0.00	1.65
27.00	2.00	0.74	5.00	1.65	0.00	1.65
27.05	2.00	0.74	5.00	1.65	0.00	1.65
27.10	2.00	0.74	5.00	1.65	0.00	1.65
27.15	2.00	0.74	5.00	1.65	0.00	1.65

Estuary Park CPT1 no CH.sum

27.20	2.00	0.74	5.00	1.65	0.00	1.65
27.25	2.00	0.74	5.00	1.65	0.00	1.65
27.30	2.00	0.74	5.00	1.65	0.00	1.65
27.35	2.00	0.74	5.00	1.65	0.00	1.65
27.40	2.00	0.74	5.00	1.65	0.00	1.65
27.45	2.00	0.74	5.00	1.65	0.00	1.65
27.50	2.00	0.74	5.00	1.65	0.00	1.65
27.55	0.08	0.74	0.10*	1.65	0.00	1.65
27.60	0.08	0.74	0.10*	1.64	0.00	1.64
27.65	0.08	0.74	0.10*	1.62	0.00	1.62
27.70	0.08	0.74	0.10*	1.60	0.00	1.60
27.75	0.08	0.74	0.10*	1.59	0.00	1.59
27.80	0.08	0.74	0.10*	1.57	0.00	1.57
27.85	0.07	0.74	0.10*	1.56	0.00	1.56
27.90	0.08	0.74	0.10*	1.54	0.00	1.54
27.95	0.08	0.74	0.10*	1.53	0.00	1.53
28.00	0.08	0.74	0.10*	1.51	0.00	1.51
28.05	0.08	0.74	0.10*	1.49	0.00	1.49
28.10	0.08	0.74	0.10*	1.48	0.00	1.48
28.15	0.08	0.74	0.10*	1.46	0.00	1.46
28.20	0.07	0.74	0.10*	1.45	0.00	1.45
28.25	0.07	0.74	0.10*	1.43	0.00	1.43
28.30	0.07	0.74	0.10*	1.42	0.00	1.42
28.35	0.07	0.74	0.10*	1.40	0.00	1.40
28.40	0.07	0.74	0.10*	1.38	0.00	1.38
28.45	0.07	0.74	0.10*	1.37	0.00	1.37
28.50	0.07	0.74	0.10*	1.35	0.00	1.35
28.55	0.07	0.74	0.10*	1.34	0.00	1.34
28.60	0.07	0.74	0.10*	1.32	0.00	1.32
28.65	0.07	0.74	0.10*	1.30	0.00	1.30
28.70	0.07	0.74	0.10*	1.29	0.00	1.29
28.75	0.07	0.74	0.10*	1.27	0.00	1.27
28.80	0.07	0.74	0.10*	1.25	0.00	1.25
28.85	0.07	0.74	0.10*	1.24	0.00	1.24
28.90	0.07	0.74	0.10*	1.22	0.00	1.22
28.95	0.07	0.74	0.10*	1.20	0.00	1.20
29.00	0.07	0.74	0.10*	1.19	0.00	1.19
29.05	2.00	0.74	5.00	1.17	0.00	1.17
29.10	2.00	0.74	5.00	1.17	0.00	1.17
29.15	2.00	0.74	5.00	1.17	0.00	1.17
29.20	2.00	0.74	5.00	1.17	0.00	1.17
29.25	2.00	0.74	5.00	1.17	0.00	1.17
29.30	2.00	0.74	5.00	1.17	0.00	1.17
29.35	2.00	0.74	5.00	1.17	0.00	1.17
29.40	2.00	0.74	5.00	1.17	0.00	1.17
29.45	2.00	0.74	5.00	1.17	0.00	1.17
29.50	2.00	0.74	5.00	1.17	0.00	1.17
29.55	2.00	0.74	5.00	1.17	0.00	1.17
29.60	2.00	0.75	5.00	1.17	0.00	1.17
29.65	2.00	0.75	5.00	1.17	0.00	1.17
29.70	2.00	0.75	5.00	1.17	0.00	1.17
29.75	2.00	0.75	5.00	1.17	0.00	1.17
29.80	2.00	0.75	5.00	1.17	0.00	1.17
29.85	2.00	0.75	5.00	1.17	0.00	1.17
29.90	2.00	0.75	5.00	1.17	0.00	1.17
29.95	2.00	0.75	5.00	1.17	0.00	1.17
30.00	2.00	0.75	5.00	1.17	0.00	1.17
30.05	2.00	0.75	5.00	1.17	0.00	1.17
30.10	2.00	0.75	5.00	1.17	0.00	1.17
30.15	2.00	0.75	5.00	1.17	0.00	1.17
30.20	2.00	0.75	5.00	1.17	0.00	1.17
30.25	2.00	0.75	5.00	1.17	0.00	1.17
30.30	2.00	0.75	5.00	1.17	0.00	1.17

Estuary Park CPT1 no CH.sum

33.50	2.00	0.74	5.00	1.17	0.00	1.17
33.55	2.00	0.74	5.00	1.17	0.00	1.17
33.60	2.00	0.74	5.00	1.17	0.00	1.17
33.65	2.00	0.74	5.00	1.17	0.00	1.17
33.70	2.00	0.74	5.00	1.17	0.00	1.17
33.75	2.00	0.74	5.00	1.17	0.00	1.17
33.80	2.00	0.74	5.00	1.17	0.00	1.17
33.85	2.00	0.74	5.00	1.17	0.00	1.17
33.90	2.00	0.74	5.00	1.17	0.00	1.17
33.95	2.00	0.74	5.00	1.17	0.00	1.17
34.00	2.00	0.74	5.00	1.17	0.00	1.17
34.05	2.00	0.74	5.00	1.17	0.00	1.17
34.10	2.00	0.74	5.00	1.17	0.00	1.17
34.15	2.00	0.74	5.00	1.17	0.00	1.17
34.20	2.00	0.74	5.00	1.17	0.00	1.17
34.25	2.00	0.74	5.00	1.17	0.00	1.17
34.30	2.00	0.73	5.00	1.17	0.00	1.17
34.35	2.00	0.73	5.00	1.17	0.00	1.17
34.40	2.00	0.73	5.00	1.17	0.00	1.17
34.45	2.00	0.73	5.00	1.17	0.00	1.17
34.50	2.00	0.73	5.00	1.17	0.00	1.17
34.55	2.00	0.73	5.00	1.17	0.00	1.17
34.60	2.00	0.73	5.00	1.17	0.00	1.17
34.65	2.00	0.73	5.00	1.17	0.00	1.17
34.70	2.00	0.73	5.00	1.17	0.00	1.17
34.75	2.00	0.73	5.00	1.17	0.00	1.17
34.80	2.00	0.73	5.00	1.17	0.00	1.17
34.85	2.00	0.73	5.00	1.17	0.00	1.17
34.90	2.00	0.73	5.00	1.17	0.00	1.17
34.95	2.00	0.73	5.00	1.17	0.00	1.17
35.00	2.00	0.73	5.00	1.17	0.00	1.17
35.05	2.00	0.73	5.00	1.17	0.00	1.17
35.10	2.00	0.73	5.00	1.17	0.00	1.17
35.15	2.00	0.73	5.00	1.17	0.00	1.17
35.20	2.00	0.73	5.00	1.17	0.00	1.17
35.25	2.00	0.73	5.00	1.17	0.00	1.17
35.30	2.00	0.73	5.00	1.17	0.00	1.17
35.35	2.00	0.73	5.00	1.17	0.00	1.17
35.40	2.00	0.73	5.00	1.17	0.00	1.17
35.45	2.00	0.73	5.00	1.17	0.00	1.17
35.50	2.00	0.73	5.00	1.17	0.00	1.17
35.55	2.00	0.73	5.00	1.17	0.00	1.17
35.60	2.00	0.73	5.00	1.17	0.00	1.17
35.65	2.00	0.73	5.00	1.17	0.00	1.17
35.70	2.00	0.73	5.00	1.17	0.00	1.17
35.75	2.00	0.73	5.00	1.17	0.00	1.17
35.80	2.00	0.73	5.00	1.17	0.00	1.17
35.85	2.00	0.73	5.00	1.17	0.00	1.17
35.90	2.00	0.73	5.00	1.17	0.00	1.17
35.95	2.00	0.73	5.00	1.17	0.00	1.17
36.00	2.00	0.73	5.00	1.17	0.00	1.17
36.05	2.00	0.73	5.00	1.17	0.00	1.17
36.10	2.00	0.73	5.00	1.17	0.00	1.17
36.15	2.00	0.73	5.00	1.17	0.00	1.17
36.20	2.00	0.73	5.00	1.17	0.00	1.17
36.25	2.00	0.73	5.00	1.17	0.00	1.17
36.30	2.00	0.73	5.00	1.17	0.00	1.17
36.35	2.00	0.73	5.00	1.17	0.00	1.17
36.40	2.00	0.73	5.00	1.17	0.00	1.17
36.45	2.00	0.73	5.00	1.17	0.00	1.17
36.50	2.00	0.73	5.00	1.17	0.00	1.17
36.55	2.00	0.73	5.00	1.17	0.00	1.17
36.60	2.00	0.73	5.00	1.17	0.00	1.17

Estuary Park CPT1 no CH.sum						
36.65	2.00	0.73	5.00	1.17	0.00	1.17
36.70	2.00	0.73	5.00	1.17	0.00	1.17
36.75	2.00	0.73	5.00	1.17	0.00	1.17
36.80	2.00	0.73	5.00	1.17	0.00	1.17
36.85	2.00	0.72	5.00	1.17	0.00	1.17
36.90	2.00	0.72	5.00	1.17	0.00	1.17
36.95	2.00	0.72	5.00	1.17	0.00	1.17
37.00	2.00	0.72	5.00	1.17	0.00	1.17
37.05	2.00	0.72	5.00	1.17	0.00	1.17
37.10	2.00	0.72	5.00	1.17	0.00	1.17
37.15	2.00	0.72	5.00	1.17	0.00	1.17
37.20	2.00	0.72	5.00	1.17	0.00	1.17
37.25	2.00	0.72	5.00	1.17	0.00	1.17
37.30	2.00	0.72	5.00	1.17	0.00	1.17
37.35	2.00	0.72	5.00	1.17	0.00	1.17
37.40	2.00	0.72	5.00	1.17	0.00	1.17
37.45	2.00	0.72	5.00	1.17	0.00	1.17
37.50	2.00	0.72	5.00	1.17	0.00	1.17
37.55	2.00	0.72	5.00	1.17	0.00	1.17
37.60	2.00	0.72	5.00	1.17	0.00	1.17
37.65	2.00	0.72	5.00	1.17	0.00	1.17
37.70	2.00	0.72	5.00	1.17	0.00	1.17
37.75	2.00	0.72	5.00	1.17	0.00	1.17
37.80	2.00	0.72	5.00	1.17	0.00	1.17
37.85	2.00	0.72	5.00	1.17	0.00	1.17
37.90	2.00	0.72	5.00	1.17	0.00	1.17
37.95	2.00	0.72	5.00	1.17	0.00	1.17
38.00	2.00	0.72	5.00	1.17	0.00	1.17
38.05	0.17	0.72	0.24*	1.17	0.00	1.17
38.10	0.17	0.72	0.24*	1.16	0.00	1.16
38.15	0.17	0.72	0.24*	1.16	0.00	1.16
38.20	0.17	0.72	0.24*	1.15	0.00	1.15
38.25	0.18	0.72	0.24*	1.14	0.00	1.14
38.30	0.18	0.72	0.25*	1.13	0.00	1.13
38.35	0.18	0.72	0.25*	1.12	0.00	1.12
38.40	0.18	0.72	0.25*	1.11	0.00	1.11
38.45	0.18	0.72	0.25*	1.11	0.00	1.11
38.50	0.18	0.72	0.25*	1.10	0.00	1.10
38.55	0.18	0.72	0.26*	1.09	0.00	1.09
38.60	0.19	0.72	0.26*	1.08	0.00	1.08
38.65	0.19	0.72	0.26*	1.07	0.00	1.07
38.70	0.19	0.72	0.26*	1.07	0.00	1.07
38.75	0.19	0.72	0.27*	1.06	0.00	1.06
38.80	0.19	0.72	0.27*	1.05	0.00	1.05
38.85	0.19	0.72	0.27*	1.04	0.00	1.04
38.90	0.20	0.72	0.27*	1.04	0.00	1.04
38.95	0.20	0.72	0.28*	1.03	0.00	1.03
39.00	0.20	0.71	0.28*	1.02	0.00	1.02
39.05	0.20	0.71	0.28*	1.01	0.00	1.01
39.10	0.20	0.71	0.28*	1.01	0.00	1.01
39.15	0.21	0.71	0.29*	1.00	0.00	1.00
39.20	0.21	0.71	0.29*	0.99	0.00	0.99
39.25	0.21	0.71	0.29*	0.99	0.00	0.99
39.30	0.21	0.71	0.30*	0.98	0.00	0.98
39.35	0.21	0.71	0.30*	0.97	0.00	0.97
39.40	0.21	0.71	0.30*	0.96	0.00	0.96
39.45	0.22	0.71	0.30*	0.96	0.00	0.96
39.50	0.22	0.71	0.31*	0.95	0.00	0.95
39.55	0.22	0.71	0.31*	0.94	0.00	0.94
39.60	0.22	0.71	0.31*	0.94	0.00	0.94
39.65	0.22	0.71	0.31*	0.93	0.00	0.93
39.70	0.22	0.71	0.31*	0.92	0.00	0.92
39.75	0.22	0.71	0.30*	0.92	0.00	0.92

Estuary Park CPT1 no CH.sum

39.80	0.21	0.71	0.30*	0.91	0.00	0.91
39.85	0.21	0.71	0.30*	0.90	0.00	0.90
39.90	0.21	0.71	0.29*	0.90	0.00	0.90
39.95	0.21	0.71	0.29*	0.89	0.00	0.89
40.00	0.20	0.71	0.29*	0.88	0.00	0.88
40.05	0.20	0.71	0.29*	0.88	0.00	0.88
40.10	0.21	0.71	0.29*	0.87	0.00	0.87
40.15	0.21	0.71	0.29*	0.86	0.00	0.86
40.20	0.21	0.71	0.29*	0.85	0.00	0.85
40.25	0.21	0.71	0.29*	0.85	0.00	0.85
40.30	0.21	0.71	0.30*	0.84	0.00	0.84
40.35	0.21	0.71	0.30*	0.83	0.00	0.83
40.40	0.21	0.71	0.30*	0.83	0.00	0.83
40.45	0.21	0.71	0.30*	0.82	0.00	0.82
40.50	0.21	0.71	0.30*	0.81	0.00	0.81
40.55	0.21	0.71	0.30*	0.81	0.00	0.81
40.60	0.21	0.71	0.30*	0.80	0.00	0.80
40.65	0.22	0.71	0.31*	0.79	0.00	0.79
40.70	0.22	0.71	0.31*	0.79	0.00	0.79
40.75	0.22	0.70	0.31*	0.78	0.00	0.78
40.80	0.22	0.70	0.31*	0.77	0.00	0.77
40.85	0.22	0.70	0.31*	0.76	0.00	0.76
40.90	0.22	0.70	0.31*	0.76	0.00	0.76
40.95	0.22	0.70	0.31*	0.75	0.00	0.75
41.00	0.21	0.70	0.30*	0.74	0.00	0.74
41.05	0.21	0.70	0.30*	0.74	0.00	0.74
41.10	0.21	0.70	0.30*	0.73	0.00	0.73
41.15	0.21	0.70	0.30*	0.72	0.00	0.72
41.20	0.21	0.70	0.30*	0.72	0.00	0.72
41.25	0.21	0.70	0.30*	0.71	0.00	0.71
41.30	0.21	0.70	0.29*	0.70	0.00	0.70
41.35	0.21	0.70	0.29*	0.70	0.00	0.70
41.40	0.20	0.70	0.29*	0.69	0.00	0.69
41.45	0.20	0.70	0.29*	0.68	0.00	0.68
41.50	0.20	0.70	0.29*	0.67	0.00	0.67
41.55	0.20	0.70	0.29*	0.67	0.00	0.67
41.60	0.20	0.70	0.29*	0.66	0.00	0.66
41.65	0.20	0.70	0.28*	0.65	0.00	0.65
41.70	0.20	0.70	0.28*	0.64	0.00	0.64
41.75	0.20	0.70	0.28*	0.64	0.00	0.64
41.80	0.20	0.70	0.28*	0.63	0.00	0.63
41.85	0.19	0.70	0.28*	0.62	0.00	0.62
41.90	0.19	0.70	0.28*	0.62	0.00	0.62
41.95	0.19	0.70	0.28*	0.61	0.00	0.61
42.00	0.19	0.70	0.27*	0.60	0.00	0.60
42.05	0.19	0.70	0.27*	0.59	0.00	0.59
42.10	0.19	0.70	0.27*	0.58	0.00	0.58
42.15	0.19	0.70	0.27*	0.58	0.00	0.58
42.20	0.19	0.70	0.27*	0.57	0.00	0.57
42.25	0.19	0.70	0.27*	0.56	0.00	0.56
42.30	0.19	0.70	0.27*	0.55	0.00	0.55
42.35	0.19	0.70	0.27*	0.55	0.00	0.55
42.40	0.18	0.70	0.26*	0.54	0.00	0.54
42.45	0.18	0.70	0.26*	0.53	0.00	0.53
42.50	0.18	0.70	0.26*	0.52	0.00	0.52
42.55	0.18	0.70	0.26*	0.51	0.00	0.51
42.60	0.18	0.70	0.26*	0.51	0.00	0.51
42.65	0.18	0.70	0.25*	0.50	0.00	0.50
42.70	0.17	0.69	0.25*	0.49	0.00	0.49
42.75	0.17	0.69	0.25*	0.48	0.00	0.48
42.80	0.17	0.69	0.24*	0.47	0.00	0.47
42.85	0.17	0.69	0.24*	0.47	0.00	0.47
42.90	0.17	0.69	0.24*	0.46	0.00	0.46

Estuary Park CPT1 no CH.sum						
42.95	0.16	0.69	0.24*	0.45	0.00	0.45
43.00	0.16	0.69	0.23*	0.44	0.00	0.44
43.05	0.16	0.69	0.23*	0.43	0.00	0.43
43.10	0.16	0.69	0.23*	0.42	0.00	0.42
43.15	0.16	0.69	0.23*	0.41	0.00	0.41
43.20	0.15	0.69	0.22*	0.40	0.00	0.40
43.25	0.15	0.69	0.22*	0.39	0.00	0.39
43.30	0.15	0.69	0.22*	0.39	0.00	0.39
43.35	0.15	0.69	0.22*	0.38	0.00	0.38
43.40	0.15	0.69	0.21*	0.37	0.00	0.37
43.45	0.15	0.69	0.21*	0.36	0.00	0.36
43.50	0.14	0.69	0.21*	0.35	0.00	0.35
43.55	0.14	0.69	0.21*	0.34	0.00	0.34
43.60	0.14	0.69	0.20*	0.33	0.00	0.33
43.65	0.14	0.69	0.20*	0.32	0.00	0.32
43.70	0.14	0.69	0.20*	0.31	0.00	0.31
43.75	0.13	0.69	0.20*	0.30	0.00	0.30
43.80	0.13	0.69	0.19*	0.29	0.00	0.29
43.85	0.13	0.69	0.19*	0.28	0.00	0.28
43.90	0.13	0.69	0.19*	0.27	0.00	0.27
43.95	0.13	0.69	0.19*	0.25	0.00	0.25
44.00	0.13	0.69	0.18*	0.24	0.00	0.24
44.05	0.12	0.69	0.18*	0.23	0.00	0.23
44.10	0.12	0.69	0.18*	0.22	0.00	0.22
44.15	0.12	0.69	0.18*	0.21	0.00	0.21
44.20	0.12	0.69	0.17*	0.20	0.00	0.20
44.25	0.12	0.69	0.17*	0.19	0.00	0.19
44.30	0.12	0.69	0.17*	0.18	0.00	0.18
44.35	0.11	0.69	0.17*	0.16	0.00	0.16
44.40	0.11	0.69	0.16*	0.15	0.00	0.15
44.45	0.11	0.69	0.16*	0.14	0.00	0.14
44.50	0.11	0.69	0.16*	0.13	0.00	0.13
44.55	0.11	0.69	0.16*	0.12	0.00	0.12
44.60	0.11	0.69	0.15*	0.10	0.00	0.10
44.65	0.10	0.68	0.15*	0.09	0.00	0.09
44.70	0.10	0.68	0.15*	0.08	0.00	0.08
44.75	0.10	0.68	0.15*	0.07	0.00	0.07
44.80	0.10	0.68	0.14*	0.05	0.00	0.05
44.85	0.10	0.68	0.14*	0.04	0.00	0.04
44.90	0.10	0.68	0.14*	0.03	0.00	0.03
44.95	0.09	0.68	0.14*	0.01	0.00	0.01
45.00	0.09	0.68	0.13*	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.

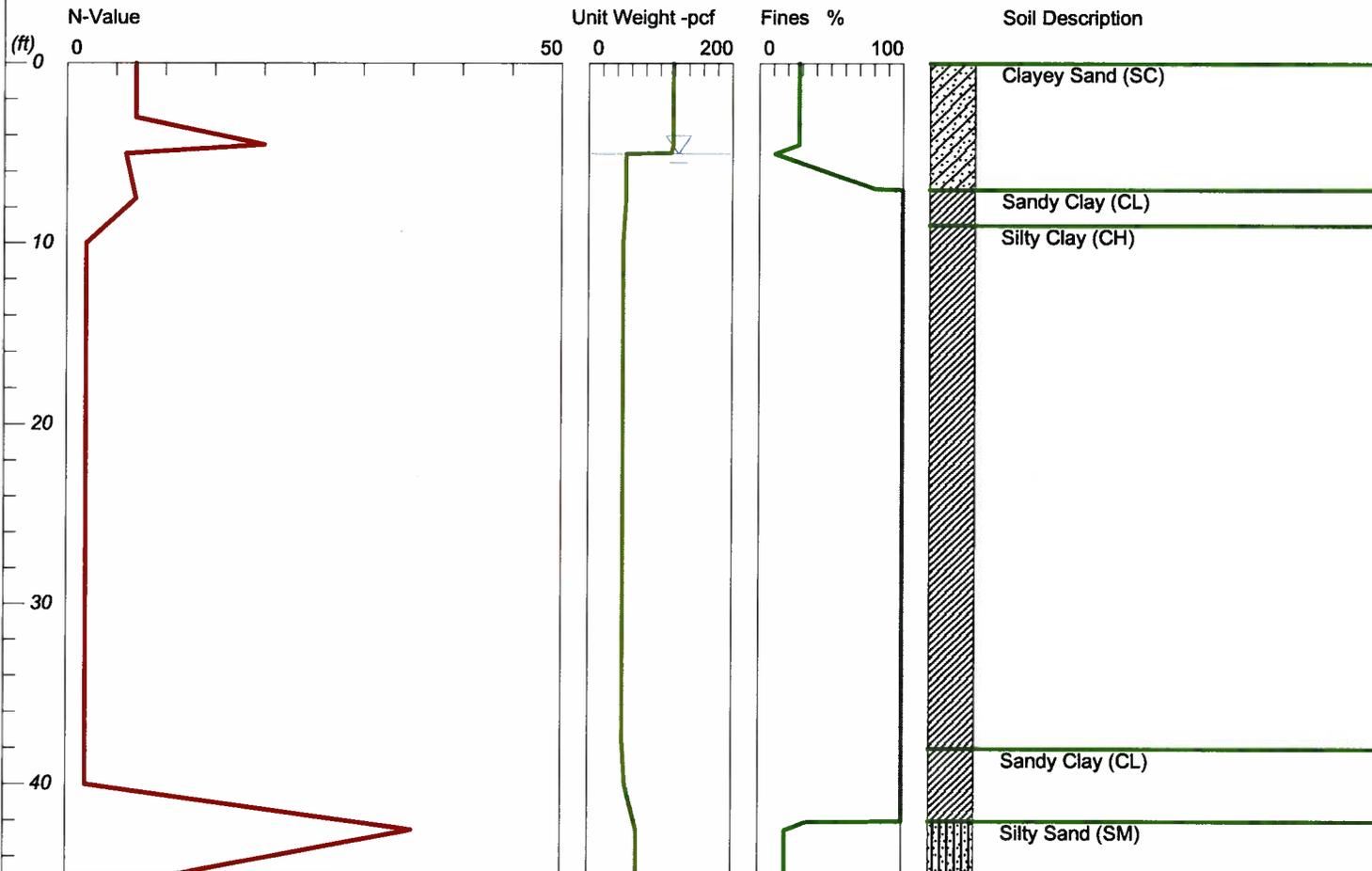
1 atm (atmosphere)	= 1 tsf (ton/ft ²)
CRRm	Cyclic resistance ratio from soils
CSRsf	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of safety against liquefaction, F.S.=CRRm/CSRsf
S_sat	Settlement from saturated sands
S_dry	Settlement from Unsaturated Sands
S_all	Total Settlement from Saturated and Unsaturated Sands
NOliq	No-Liquefy Soils

LIQUEFACTION ANALYSIS

Estuary Park

Hole No.=CPT-2 Water Depth=5 ft

Magnitude=8.5
Acceleration=0.515g



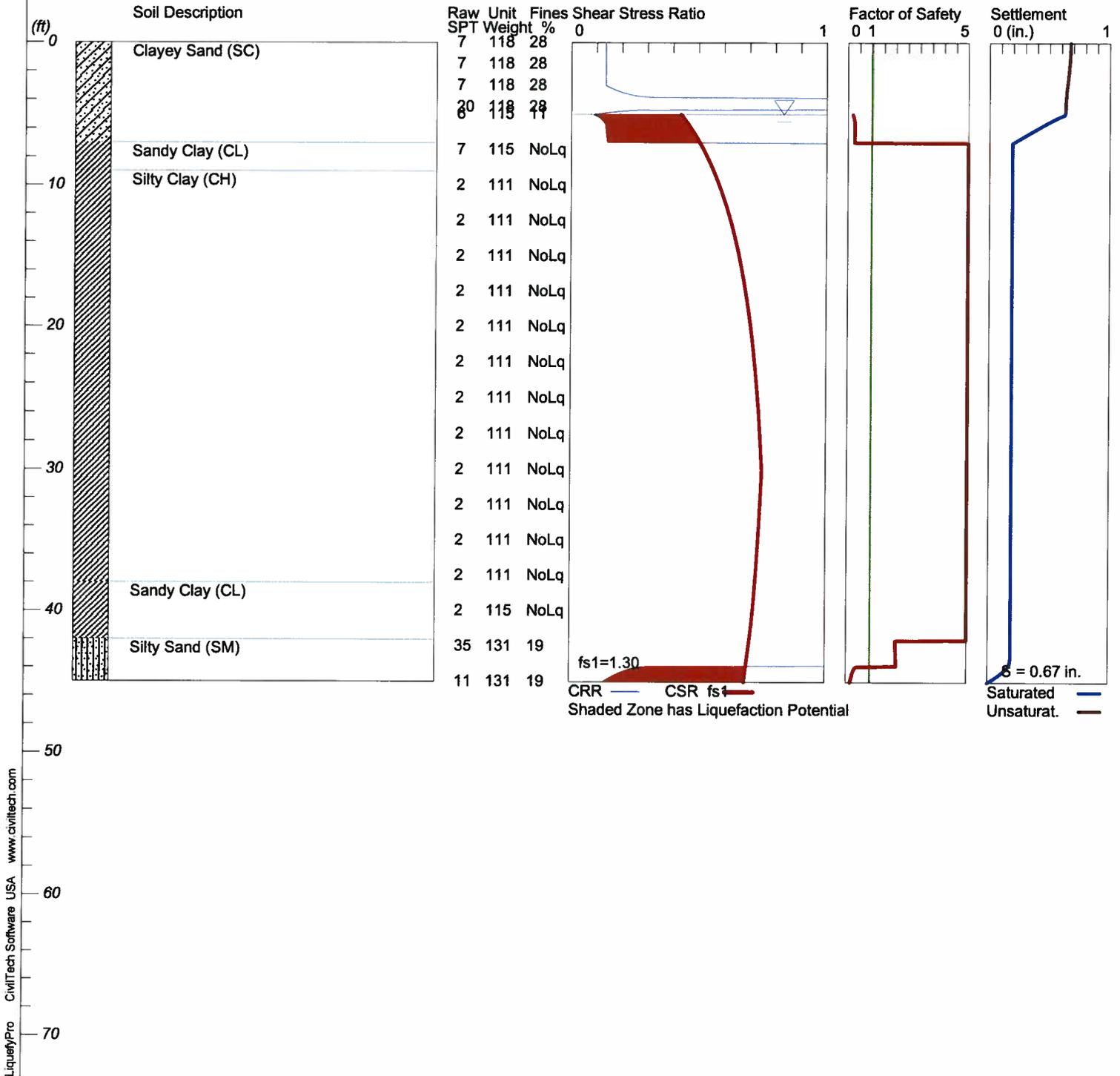
SPT or BPT test

LIQUEFACTION ANALYSIS

Estuary Park

Hole No.=CPT-2 Water Depth=5 ft

Magnitude=8.5
Acceleration=0.515g



Estuary Park CPT2 no CH liq.sum

LIQUEFACTION ANALYSIS SUMMARY

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CH liq.liq Input File Name: C:\Grant Roughs\Liquefy Pro Data Files\Estuary Park CPT2 no
Title: Estuary Park
Subtitle:

Surface Elev.=
Hole No.=CPT-2
Depth of Hole= 45.00 ft
Water Table during Earthquake= 5.00 ft
Water Table during In-Situ Testing= 5.00 ft
Max. Acceleration= 0.51 g
Earthquake Magnitude= 8.50

Input Data:

Surface Elev.=
Hole No.=CPT-2
Depth of Hole=45.00 ft
Water Table during Earthquake= 5.00 ft
Water Table during In-Situ Testing= 5.00 ft
Max. Acceleration=0.51 g
Earthquake Magnitude=8.50
No-Liquefiable Soils: CL, OL are Non-Liq. Soil

1. SPT or BPT Calculation.
 2. Settlement Analysis Method: Tokimatsu, M-correction
 3. Fines Correction for Liquefaction: Idriss/Seed
 4. Fine Correction for Settlement: During Liquefaction*
 5. Settlement Calculation in: All zones*
 6. Hammer Energy Ratio, Ce = 1.25
 7. Borehole Diameter, Cb= 1
 8. Sampling Method, Cs= 1
 9. User request factor of safety (apply to CSR) , User= 1.3
Plot one CSR curve (fs1=User)
 10. Use Curve Smoothing: Yes*
- * Recommended Options

In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.00	7.00	118.00	28.00
1.50	7.00	118.00	28.00
3.00	7.00	118.00	28.00
4.50	20.00	118.00	28.00
5.00	6.00	115.00	11.00
7.50	7.00	115.00	NoLiq
10.00	2.00	111.00	NoLiq
12.50	2.00	111.00	NoLiq
15.00	2.00	111.00	NoLiq

Estuary Park CPT2 no CH liq.sum

17.50	2.00	111.00	NoLiq
20.00	2.00	111.00	NoLiq
22.50	2.00	111.00	NoLiq
25.00	2.00	111.00	NoLiq
27.50	2.00	111.00	NoLiq
30.00	2.00	111.00	NoLiq
32.50	2.00	111.00	NoLiq
35.00	2.00	111.00	NoLiq
37.50	2.00	111.00	NoLiq
40.00	2.00	115.00	NoLiq
42.50	35.00	131.00	19.00
45.00	11.00	131.00	19.00

Output Results:

Settlement of Saturated Sands=0.63 in.
 Settlement of Unsaturated Sands=0.05 in.
 Total Settlement of Saturated and Unsaturated Sands=0.67 in.
 Differential Settlement=0.336 to 0.444 in.

Depth ft	CRRm	CSRfs	F.S.	S_sat. in.	S_dry in.	s_all in.
0.00	0.14	0.44	5.00	0.63	0.05	0.67
0.05	0.14	0.44	5.00	0.63	0.05	0.67
0.10	0.14	0.44	5.00	0.63	0.05	0.67
0.15	0.14	0.44	5.00	0.63	0.05	0.67
0.20	0.14	0.43	5.00	0.63	0.05	0.67
0.25	0.14	0.43	5.00	0.63	0.05	0.67
0.30	0.14	0.43	5.00	0.63	0.05	0.67
0.35	0.14	0.43	5.00	0.63	0.05	0.67
0.40	0.14	0.43	5.00	0.63	0.05	0.67
0.45	0.14	0.43	5.00	0.63	0.05	0.67
0.50	0.14	0.43	5.00	0.63	0.05	0.67
0.55	0.14	0.43	5.00	0.63	0.05	0.67
0.60	0.14	0.43	5.00	0.63	0.04	0.67
0.65	0.14	0.43	5.00	0.63	0.04	0.67
0.70	0.14	0.43	5.00	0.63	0.04	0.67
0.75	0.14	0.43	5.00	0.63	0.04	0.67
0.80	0.14	0.43	5.00	0.63	0.04	0.67
0.85	0.14	0.43	5.00	0.63	0.04	0.67
0.90	0.14	0.43	5.00	0.63	0.04	0.67
0.95	0.14	0.43	5.00	0.63	0.04	0.67
1.00	0.14	0.43	5.00	0.63	0.04	0.67
1.05	0.14	0.43	5.00	0.63	0.04	0.67
1.10	0.14	0.43	5.00	0.63	0.04	0.67
1.15	0.14	0.43	5.00	0.63	0.04	0.67
1.20	0.14	0.43	5.00	0.63	0.04	0.67
1.25	0.14	0.43	5.00	0.63	0.04	0.67
1.30	0.14	0.43	5.00	0.63	0.04	0.67
1.35	0.14	0.43	5.00	0.63	0.04	0.67
1.40	0.14	0.43	5.00	0.63	0.04	0.66
1.45	0.14	0.43	5.00	0.63	0.04	0.66
1.50	0.14	0.43	5.00	0.63	0.04	0.66
1.55	0.14	0.43	5.00	0.63	0.04	0.66
1.60	0.14	0.43	5.00	0.63	0.04	0.66
1.65	0.14	0.43	5.00	0.63	0.04	0.66
1.70	0.14	0.43	5.00	0.63	0.04	0.66
1.75	0.14	0.43	5.00	0.63	0.04	0.66
1.80	0.14	0.43	5.00	0.63	0.04	0.66
1.85	0.14	0.43	5.00	0.63	0.03	0.66
1.90	0.14	0.43	5.00	0.63	0.03	0.66
1.95	0.14	0.43	5.00	0.63	0.03	0.66

			Estuary Park	CPT2 no	CH	liq.sum
2.00	0.14	0.43	5.00	0.63	0.03	0.66
2.05	0.14	0.43	5.00	0.63	0.03	0.66
2.10	0.14	0.43	5.00	0.63	0.03	0.66
2.15	0.14	0.43	5.00	0.63	0.03	0.66
2.20	0.14	0.43	5.00	0.63	0.03	0.66
2.25	0.14	0.43	5.00	0.63	0.03	0.66
2.30	0.14	0.43	5.00	0.63	0.03	0.66
2.35	0.14	0.43	5.00	0.63	0.03	0.65
2.40	0.14	0.43	5.00	0.63	0.03	0.65
2.45	0.14	0.43	5.00	0.63	0.03	0.65
2.50	0.14	0.43	5.00	0.63	0.03	0.65
2.55	0.14	0.43	5.00	0.63	0.03	0.65
2.60	0.14	0.43	5.00	0.63	0.03	0.65
2.65	0.14	0.43	5.00	0.63	0.02	0.65
2.70	0.14	0.43	5.00	0.63	0.02	0.65
2.75	0.14	0.43	5.00	0.63	0.02	0.65
2.80	0.14	0.43	5.00	0.63	0.02	0.65
2.85	0.14	0.43	5.00	0.63	0.02	0.65
2.90	0.14	0.43	5.00	0.63	0.02	0.65
2.95	0.14	0.43	5.00	0.63	0.02	0.65
3.00	0.14	0.43	5.00	0.63	0.02	0.65
3.05	0.14	0.43	5.00	0.63	0.02	0.64
3.10	0.15	0.43	5.00	0.63	0.02	0.64
3.15	0.15	0.43	5.00	0.63	0.02	0.64
3.20	0.16	0.43	5.00	0.63	0.02	0.64
3.25	0.17	0.43	5.00	0.63	0.02	0.64
3.30	0.17	0.43	5.00	0.63	0.01	0.64
3.35	0.18	0.43	5.00	0.63	0.01	0.64
3.40	0.19	0.43	5.00	0.63	0.01	0.64
3.45	0.20	0.43	5.00	0.63	0.01	0.64
3.50	0.21	0.43	5.00	0.63	0.01	0.64
3.55	0.22	0.43	5.00	0.63	0.01	0.64
3.60	0.23	0.43	5.00	0.63	0.01	0.64
3.65	0.24	0.43	5.00	0.63	0.01	0.64
3.70	0.25	0.43	5.00	0.63	0.01	0.64
3.75	0.27	0.43	5.00	0.63	0.01	0.64
3.80	0.31	0.43	5.00	0.63	0.01	0.64
3.85	1.45	0.43	5.00	0.63	0.01	0.64
3.90	1.45	0.43	5.00	0.63	0.01	0.64
3.95	1.45	0.43	5.00	0.63	0.01	0.64
4.00	1.45	0.43	5.00	0.63	0.01	0.63
4.05	1.45	0.43	5.00	0.63	0.01	0.63
4.10	1.45	0.43	5.00	0.63	0.01	0.63
4.15	1.45	0.43	5.00	0.63	0.01	0.63
4.20	1.45	0.43	5.00	0.63	0.01	0.63
4.25	1.45	0.43	5.00	0.63	0.01	0.63
4.30	1.45	0.43	5.00	0.63	0.01	0.63
4.35	1.45	0.43	5.00	0.63	0.01	0.63
4.40	1.45	0.43	5.00	0.63	0.01	0.63
4.45	1.45	0.43	5.00	0.63	0.01	0.63
4.50	1.45	0.43	5.00	0.63	0.01	0.63
4.55	1.45	0.43	5.00	0.63	0.01	0.63
4.60	1.45	0.43	5.00	0.63	0.01	0.63
4.65	1.45	0.43	5.00	0.63	0.01	0.63
4.70	0.27	0.43	5.00	0.63	0.01	0.63
4.75	0.22	0.43	5.00	0.63	0.01	0.63
4.80	0.18	0.43	5.00	0.63	0.00	0.63
4.85	0.16	0.43	5.00	0.63	0.00	0.63
4.90	0.13	0.43	5.00	0.63	0.00	0.63
4.95	0.11	0.43	5.00	0.63	0.00	0.63
5.00	0.09	0.43	0.20*	0.63	0.00	0.63
5.05	0.09	0.43	0.21*	0.61	0.00	0.61
5.10	0.10	0.43	0.23*	0.60	0.00	0.60

		Estuary Park		CPT2 no	CH	liq.sum
5.15	0.10	0.44	0.24*	0.58	0.00	0.58
5.20	0.11	0.44	0.24*	0.57	0.00	0.57
5.25	0.11	0.44	0.25*	0.56	0.00	0.56
5.30	0.11	0.44	0.26*	0.55	0.00	0.55
5.35	0.12	0.45	0.26*	0.54	0.00	0.54
5.40	0.12	0.45	0.27*	0.52	0.00	0.52
5.45	0.12	0.45	0.27*	0.51	0.00	0.51
5.50	0.13	0.45	0.28*	0.50	0.00	0.50
5.55	0.13	0.45	0.28*	0.49	0.00	0.49
5.60	0.13	0.46	0.28*	0.48	0.00	0.48
5.65	0.13	0.46	0.29*	0.47	0.00	0.47
5.70	0.13	0.46	0.29*	0.46	0.00	0.46
5.75	0.13	0.46	0.29*	0.45	0.00	0.45
5.80	0.13	0.46	0.29*	0.44	0.00	0.44
5.85	0.13	0.47	0.29*	0.43	0.00	0.43
5.90	0.13	0.47	0.29*	0.42	0.00	0.42
5.95	0.13	0.47	0.29*	0.41	0.00	0.41
6.00	0.13	0.47	0.29*	0.40	0.00	0.40
6.05	0.14	0.47	0.29*	0.39	0.00	0.39
6.10	0.14	0.47	0.29*	0.37	0.00	0.37
6.15	0.14	0.48	0.29*	0.36	0.00	0.36
6.20	0.14	0.48	0.28*	0.35	0.00	0.35
6.25	0.14	0.48	0.28*	0.34	0.00	0.34
6.30	0.14	0.48	0.28*	0.33	0.00	0.33
6.35	0.14	0.48	0.28*	0.32	0.00	0.32
6.40	0.14	0.49	0.28*	0.31	0.00	0.31
6.45	0.14	0.49	0.28*	0.30	0.00	0.30
6.50	0.14	0.49	0.28*	0.29	0.00	0.29
6.55	0.14	0.49	0.28*	0.28	0.00	0.28
6.60	0.14	0.49	0.28*	0.27	0.00	0.27
6.65	0.14	0.49	0.28*	0.26	0.00	0.26
6.70	0.14	0.50	0.28*	0.25	0.00	0.25
6.75	0.14	0.50	0.28*	0.24	0.00	0.24
6.80	0.14	0.50	0.28*	0.23	0.00	0.23
6.85	0.14	0.50	0.28*	0.22	0.00	0.22
6.90	0.14	0.50	0.28*	0.21	0.00	0.21
6.95	0.14	0.50	0.28*	0.20	0.00	0.20
7.00	2.00	0.50	5.00	0.19	0.00	0.19
7.05	2.00	0.51	5.00	0.19	0.00	0.19
7.10	2.00	0.51	5.00	0.19	0.00	0.19
7.15	2.00	0.51	5.00	0.19	0.00	0.19
7.20	2.00	0.51	5.00	0.19	0.00	0.19
7.25	2.00	0.51	5.00	0.19	0.00	0.19
7.30	2.00	0.51	5.00	0.19	0.00	0.19
7.35	2.00	0.52	5.00	0.19	0.00	0.19
7.40	2.00	0.52	5.00	0.19	0.00	0.19
7.45	2.00	0.52	5.00	0.19	0.00	0.19
7.50	2.00	0.52	5.00	0.19	0.00	0.19
7.55	2.00	0.52	5.00	0.19	0.00	0.19
7.60	2.00	0.52	5.00	0.19	0.00	0.19
7.65	2.00	0.52	5.00	0.19	0.00	0.19
7.70	2.00	0.53	5.00	0.19	0.00	0.19
7.75	2.00	0.53	5.00	0.19	0.00	0.19
7.80	2.00	0.53	5.00	0.19	0.00	0.19
7.85	2.00	0.53	5.00	0.19	0.00	0.19
7.90	2.00	0.53	5.00	0.19	0.00	0.19
7.95	2.00	0.53	5.00	0.19	0.00	0.19
8.00	2.00	0.53	5.00	0.19	0.00	0.19
8.05	2.00	0.54	5.00	0.19	0.00	0.19
8.10	2.00	0.54	5.00	0.19	0.00	0.19
8.15	2.00	0.54	5.00	0.19	0.00	0.19
8.20	2.00	0.54	5.00	0.19	0.00	0.19
8.25	2.00	0.54	5.00	0.19	0.00	0.19

Estuary Park CPT2 no CH liq.sum						
8.30	2.00	0.54	5.00	0.19	0.00	0.19
8.35	2.00	0.54	5.00	0.19	0.00	0.19
8.40	2.00	0.54	5.00	0.19	0.00	0.19
8.45	2.00	0.55	5.00	0.19	0.00	0.19
8.50	2.00	0.55	5.00	0.19	0.00	0.19
8.55	2.00	0.55	5.00	0.19	0.00	0.19
8.60	2.00	0.55	5.00	0.19	0.00	0.19
8.65	2.00	0.55	5.00	0.19	0.00	0.19
8.70	2.00	0.55	5.00	0.19	0.00	0.19
8.75	2.00	0.55	5.00	0.19	0.00	0.19
8.80	2.00	0.55	5.00	0.19	0.00	0.19
8.85	2.00	0.56	5.00	0.19	0.00	0.19
8.90	2.00	0.56	5.00	0.19	0.00	0.19
8.95	2.00	0.56	5.00	0.19	0.00	0.19
9.00	2.00	0.56	5.00	0.19	0.00	0.19
9.05	2.00	0.56	5.00	0.19	0.00	0.19
9.10	2.00	0.56	5.00	0.19	0.00	0.19
9.15	2.00	0.56	5.00	0.19	0.00	0.19
9.20	2.00	0.56	5.00	0.19	0.00	0.19
9.25	2.00	0.57	5.00	0.19	0.00	0.19
9.30	2.00	0.57	5.00	0.19	0.00	0.19
9.35	2.00	0.57	5.00	0.19	0.00	0.19
9.40	2.00	0.57	5.00	0.19	0.00	0.19
9.45	2.00	0.57	5.00	0.19	0.00	0.19
9.50	2.00	0.57	5.00	0.19	0.00	0.19
9.55	2.00	0.57	5.00	0.19	0.00	0.19
9.60	2.00	0.57	5.00	0.19	0.00	0.19
9.65	2.00	0.57	5.00	0.19	0.00	0.19
9.70	2.00	0.58	5.00	0.19	0.00	0.19
9.75	2.00	0.58	5.00	0.19	0.00	0.19
9.80	2.00	0.58	5.00	0.19	0.00	0.19
9.85	2.00	0.58	5.00	0.19	0.00	0.19
9.90	2.00	0.58	5.00	0.19	0.00	0.19
9.95	2.00	0.58	5.00	0.19	0.00	0.19
10.00	2.00	0.58	5.00	0.19	0.00	0.19
10.05	2.00	0.58	5.00	0.19	0.00	0.19
10.10	2.00	0.58	5.00	0.19	0.00	0.19
10.15	2.00	0.58	5.00	0.19	0.00	0.19
10.20	2.00	0.59	5.00	0.19	0.00	0.19
10.25	2.00	0.59	5.00	0.19	0.00	0.19
10.30	2.00	0.59	5.00	0.19	0.00	0.19
10.35	2.00	0.59	5.00	0.19	0.00	0.19
10.40	2.00	0.59	5.00	0.19	0.00	0.19
10.45	2.00	0.59	5.00	0.19	0.00	0.19
10.50	2.00	0.59	5.00	0.19	0.00	0.19
10.55	2.00	0.59	5.00	0.19	0.00	0.19
10.60	2.00	0.59	5.00	0.19	0.00	0.19
10.65	2.00	0.59	5.00	0.19	0.00	0.19
10.70	2.00	0.60	5.00	0.19	0.00	0.19
10.75	2.00	0.60	5.00	0.19	0.00	0.19
10.80	2.00	0.60	5.00	0.19	0.00	0.19
10.85	2.00	0.60	5.00	0.19	0.00	0.19
10.90	2.00	0.60	5.00	0.19	0.00	0.19
10.95	2.00	0.60	5.00	0.19	0.00	0.19
11.00	2.00	0.60	5.00	0.19	0.00	0.19
11.05	2.00	0.60	5.00	0.19	0.00	0.19
11.10	2.00	0.60	5.00	0.19	0.00	0.19
11.15	2.00	0.60	5.00	0.19	0.00	0.19
11.20	2.00	0.60	5.00	0.19	0.00	0.19
11.25	2.00	0.61	5.00	0.19	0.00	0.19
11.30	2.00	0.61	5.00	0.19	0.00	0.19
11.35	2.00	0.61	5.00	0.19	0.00	0.19
11.40	2.00	0.61	5.00	0.19	0.00	0.19

Estuary Park CPT2 no CH liq.sum						
11.45	2.00	0.61	5.00	0.19	0.00	0.19
11.50	2.00	0.61	5.00	0.19	0.00	0.19
11.55	2.00	0.61	5.00	0.19	0.00	0.19
11.60	2.00	0.61	5.00	0.19	0.00	0.19
11.65	2.00	0.61	5.00	0.19	0.00	0.19
11.70	2.00	0.61	5.00	0.19	0.00	0.19
11.75	2.00	0.61	5.00	0.19	0.00	0.19
11.80	2.00	0.62	5.00	0.19	0.00	0.19
11.85	2.00	0.62	5.00	0.19	0.00	0.19
11.90	2.00	0.62	5.00	0.19	0.00	0.19
11.95	2.00	0.62	5.00	0.19	0.00	0.19
12.00	2.00	0.62	5.00	0.19	0.00	0.19
12.05	2.00	0.62	5.00	0.19	0.00	0.19
12.10	2.00	0.62	5.00	0.19	0.00	0.19
12.15	2.00	0.62	5.00	0.19	0.00	0.19
12.20	2.00	0.62	5.00	0.19	0.00	0.19
12.25	2.00	0.62	5.00	0.19	0.00	0.19
12.30	2.00	0.62	5.00	0.19	0.00	0.19
12.35	2.00	0.62	5.00	0.19	0.00	0.19
12.40	2.00	0.62	5.00	0.19	0.00	0.19
12.45	2.00	0.63	5.00	0.19	0.00	0.19
12.50	2.00	0.63	5.00	0.19	0.00	0.19
12.55	2.00	0.63	5.00	0.19	0.00	0.19
12.60	2.00	0.63	5.00	0.19	0.00	0.19
12.65	2.00	0.63	5.00	0.19	0.00	0.19
12.70	2.00	0.63	5.00	0.19	0.00	0.19
12.75	2.00	0.63	5.00	0.19	0.00	0.19
12.80	2.00	0.63	5.00	0.19	0.00	0.19
12.85	2.00	0.63	5.00	0.19	0.00	0.19
12.90	2.00	0.63	5.00	0.19	0.00	0.19
12.95	2.00	0.63	5.00	0.19	0.00	0.19
13.00	2.00	0.63	5.00	0.19	0.00	0.19
13.05	2.00	0.63	5.00	0.19	0.00	0.19
13.10	2.00	0.64	5.00	0.19	0.00	0.19
13.15	2.00	0.64	5.00	0.19	0.00	0.19
13.20	2.00	0.64	5.00	0.19	0.00	0.19
13.25	2.00	0.64	5.00	0.19	0.00	0.19
13.30	2.00	0.64	5.00	0.19	0.00	0.19
13.35	2.00	0.64	5.00	0.19	0.00	0.19
13.40	2.00	0.64	5.00	0.19	0.00	0.19
13.45	2.00	0.64	5.00	0.19	0.00	0.19
13.50	2.00	0.64	5.00	0.19	0.00	0.19
13.55	2.00	0.64	5.00	0.19	0.00	0.19
13.60	2.00	0.64	5.00	0.19	0.00	0.19
13.65	2.00	0.64	5.00	0.19	0.00	0.19
13.70	2.00	0.64	5.00	0.19	0.00	0.19
13.75	2.00	0.64	5.00	0.19	0.00	0.19
13.80	2.00	0.65	5.00	0.19	0.00	0.19
13.85	2.00	0.65	5.00	0.19	0.00	0.19
13.90	2.00	0.65	5.00	0.19	0.00	0.19
13.95	2.00	0.65	5.00	0.19	0.00	0.19
14.00	2.00	0.65	5.00	0.19	0.00	0.19
14.05	2.00	0.65	5.00	0.19	0.00	0.19
14.10	2.00	0.65	5.00	0.19	0.00	0.19
14.15	2.00	0.65	5.00	0.19	0.00	0.19
14.20	2.00	0.65	5.00	0.19	0.00	0.19
14.25	2.00	0.65	5.00	0.19	0.00	0.19
14.30	2.00	0.65	5.00	0.19	0.00	0.19
14.35	2.00	0.65	5.00	0.19	0.00	0.19
14.40	2.00	0.65	5.00	0.19	0.00	0.19
14.45	2.00	0.65	5.00	0.19	0.00	0.19
14.50	2.00	0.65	5.00	0.19	0.00	0.19
14.55	2.00	0.65	5.00	0.19	0.00	0.19

			Estuary Park	CPT2 no	CH	liq.sum
14.60	2.00	0.66	5.00	0.19	0.00	0.19
14.65	2.00	0.66	5.00	0.19	0.00	0.19
14.70	2.00	0.66	5.00	0.19	0.00	0.19
14.75	2.00	0.66	5.00	0.19	0.00	0.19
14.80	2.00	0.66	5.00	0.19	0.00	0.19
14.85	2.00	0.66	5.00	0.19	0.00	0.19
14.90	2.00	0.66	5.00	0.19	0.00	0.19
14.95	2.00	0.66	5.00	0.19	0.00	0.19
15.00	2.00	0.66	5.00	0.19	0.00	0.19
15.05	2.00	0.66	5.00	0.19	0.00	0.19
15.10	2.00	0.66	5.00	0.19	0.00	0.19
15.15	2.00	0.66	5.00	0.19	0.00	0.19
15.20	2.00	0.66	5.00	0.19	0.00	0.19
15.25	2.00	0.66	5.00	0.19	0.00	0.19
15.30	2.00	0.66	5.00	0.19	0.00	0.19
15.35	2.00	0.66	5.00	0.19	0.00	0.19
15.40	2.00	0.66	5.00	0.19	0.00	0.19
15.45	2.00	0.67	5.00	0.19	0.00	0.19
15.50	2.00	0.67	5.00	0.19	0.00	0.19
15.55	2.00	0.67	5.00	0.19	0.00	0.19
15.60	2.00	0.67	5.00	0.19	0.00	0.19
15.65	2.00	0.67	5.00	0.19	0.00	0.19
15.70	2.00	0.67	5.00	0.19	0.00	0.19
15.75	2.00	0.67	5.00	0.19	0.00	0.19
15.80	2.00	0.67	5.00	0.19	0.00	0.19
15.85	2.00	0.67	5.00	0.19	0.00	0.19
15.90	2.00	0.67	5.00	0.19	0.00	0.19
15.95	2.00	0.67	5.00	0.19	0.00	0.19
16.00	2.00	0.67	5.00	0.19	0.00	0.19
16.05	2.00	0.67	5.00	0.19	0.00	0.19
16.10	2.00	0.67	5.00	0.19	0.00	0.19
16.15	2.00	0.67	5.00	0.19	0.00	0.19
16.20	2.00	0.67	5.00	0.19	0.00	0.19
16.25	2.00	0.67	5.00	0.19	0.00	0.19
16.30	2.00	0.67	5.00	0.19	0.00	0.19
16.35	2.00	0.68	5.00	0.19	0.00	0.19
16.40	2.00	0.68	5.00	0.19	0.00	0.19
16.45	2.00	0.68	5.00	0.19	0.00	0.19
16.50	2.00	0.68	5.00	0.19	0.00	0.19
16.55	2.00	0.68	5.00	0.19	0.00	0.19
16.60	2.00	0.68	5.00	0.19	0.00	0.19
16.65	2.00	0.68	5.00	0.19	0.00	0.19
16.70	2.00	0.68	5.00	0.19	0.00	0.19
16.75	2.00	0.68	5.00	0.19	0.00	0.19
16.80	2.00	0.68	5.00	0.19	0.00	0.19
16.85	2.00	0.68	5.00	0.19	0.00	0.19
16.90	2.00	0.68	5.00	0.19	0.00	0.19
16.95	2.00	0.68	5.00	0.19	0.00	0.19
17.00	2.00	0.68	5.00	0.19	0.00	0.19
17.05	2.00	0.68	5.00	0.19	0.00	0.19
17.10	2.00	0.68	5.00	0.19	0.00	0.19
17.15	2.00	0.68	5.00	0.19	0.00	0.19
17.20	2.00	0.68	5.00	0.19	0.00	0.19
17.25	2.00	0.68	5.00	0.19	0.00	0.19
17.30	2.00	0.68	5.00	0.19	0.00	0.19
17.35	2.00	0.68	5.00	0.19	0.00	0.19
17.40	2.00	0.69	5.00	0.19	0.00	0.19
17.45	2.00	0.69	5.00	0.19	0.00	0.19
17.50	2.00	0.69	5.00	0.19	0.00	0.19
17.55	2.00	0.69	5.00	0.19	0.00	0.19
17.60	2.00	0.69	5.00	0.19	0.00	0.19
17.65	2.00	0.69	5.00	0.19	0.00	0.19
17.70	2.00	0.69	5.00	0.19	0.00	0.19

		Estuary Park CPT2 no CH liq.sum				
17.75	2.00	0.69	5.00	0.19	0.00	0.19
17.80	2.00	0.69	5.00	0.19	0.00	0.19
17.85	2.00	0.69	5.00	0.19	0.00	0.19
17.90	2.00	0.69	5.00	0.19	0.00	0.19
17.95	2.00	0.69	5.00	0.19	0.00	0.19
18.00	2.00	0.69	5.00	0.19	0.00	0.19
18.05	2.00	0.69	5.00	0.19	0.00	0.19
18.10	2.00	0.69	5.00	0.19	0.00	0.19
18.15	2.00	0.69	5.00	0.19	0.00	0.19
18.20	2.00	0.69	5.00	0.19	0.00	0.19
18.25	2.00	0.69	5.00	0.19	0.00	0.19
18.30	2.00	0.69	5.00	0.19	0.00	0.19
18.35	2.00	0.69	5.00	0.19	0.00	0.19
18.40	2.00	0.69	5.00	0.19	0.00	0.19
18.45	2.00	0.69	5.00	0.19	0.00	0.19
18.50	2.00	0.69	5.00	0.19	0.00	0.19
18.55	2.00	0.70	5.00	0.19	0.00	0.19
18.60	2.00	0.70	5.00	0.19	0.00	0.19
18.65	2.00	0.70	5.00	0.19	0.00	0.19
18.70	2.00	0.70	5.00	0.19	0.00	0.19
18.75	2.00	0.70	5.00	0.19	0.00	0.19
18.80	2.00	0.70	5.00	0.19	0.00	0.19
18.85	2.00	0.70	5.00	0.19	0.00	0.19
18.90	2.00	0.70	5.00	0.19	0.00	0.19
18.95	2.00	0.70	5.00	0.19	0.00	0.19
19.00	2.00	0.70	5.00	0.19	0.00	0.19
19.05	2.00	0.70	5.00	0.19	0.00	0.19
19.10	2.00	0.70	5.00	0.19	0.00	0.19
19.15	2.00	0.70	5.00	0.19	0.00	0.19
19.20	2.00	0.70	5.00	0.19	0.00	0.19
19.25	2.00	0.70	5.00	0.19	0.00	0.19
19.30	2.00	0.70	5.00	0.19	0.00	0.19
19.35	2.00	0.70	5.00	0.19	0.00	0.19
19.40	2.00	0.70	5.00	0.19	0.00	0.19
19.45	2.00	0.70	5.00	0.19	0.00	0.19
19.50	2.00	0.70	5.00	0.19	0.00	0.19
19.55	2.00	0.70	5.00	0.19	0.00	0.19
19.60	2.00	0.70	5.00	0.19	0.00	0.19
19.65	2.00	0.70	5.00	0.19	0.00	0.19
19.70	2.00	0.70	5.00	0.19	0.00	0.19
19.75	2.00	0.70	5.00	0.19	0.00	0.19
19.80	2.00	0.70	5.00	0.19	0.00	0.19
19.85	2.00	0.71	5.00	0.19	0.00	0.19
19.90	2.00	0.71	5.00	0.19	0.00	0.19
19.95	2.00	0.71	5.00	0.19	0.00	0.19
20.00	2.00	0.71	5.00	0.19	0.00	0.19
20.05	2.00	0.71	5.00	0.19	0.00	0.19
20.10	2.00	0.71	5.00	0.19	0.00	0.19
20.15	2.00	0.71	5.00	0.19	0.00	0.19
20.20	2.00	0.71	5.00	0.19	0.00	0.19
20.25	2.00	0.71	5.00	0.19	0.00	0.19
20.30	2.00	0.71	5.00	0.19	0.00	0.19
20.35	2.00	0.71	5.00	0.19	0.00	0.19
20.40	2.00	0.71	5.00	0.19	0.00	0.19
20.45	2.00	0.71	5.00	0.19	0.00	0.19
20.50	2.00	0.71	5.00	0.19	0.00	0.19
20.55	2.00	0.71	5.00	0.19	0.00	0.19
20.60	2.00	0.71	5.00	0.19	0.00	0.19
20.65	2.00	0.71	5.00	0.19	0.00	0.19
20.70	2.00	0.71	5.00	0.19	0.00	0.19
20.75	2.00	0.71	5.00	0.19	0.00	0.19
20.80	2.00	0.71	5.00	0.19	0.00	0.19
20.85	2.00	0.71	5.00	0.19	0.00	0.19

Estuary Park CPT2 no CH liq.sum						
20.90	2.00	0.71	5.00	0.19	0.00	0.19
20.95	2.00	0.71	5.00	0.19	0.00	0.19
21.00	2.00	0.71	5.00	0.19	0.00	0.19
21.05	2.00	0.71	5.00	0.19	0.00	0.19
21.10	2.00	0.71	5.00	0.19	0.00	0.19
21.15	2.00	0.71	5.00	0.19	0.00	0.19
21.20	2.00	0.71	5.00	0.19	0.00	0.19
21.25	2.00	0.71	5.00	0.19	0.00	0.19
21.30	2.00	0.71	5.00	0.19	0.00	0.19
21.35	2.00	0.72	5.00	0.19	0.00	0.19
21.40	2.00	0.72	5.00	0.19	0.00	0.19
21.45	2.00	0.72	5.00	0.19	0.00	0.19
21.50	2.00	0.72	5.00	0.19	0.00	0.19
21.55	2.00	0.72	5.00	0.19	0.00	0.19
21.60	2.00	0.72	5.00	0.19	0.00	0.19
21.65	2.00	0.72	5.00	0.19	0.00	0.19
21.70	2.00	0.72	5.00	0.19	0.00	0.19
21.75	2.00	0.72	5.00	0.19	0.00	0.19
21.80	2.00	0.72	5.00	0.19	0.00	0.19
21.85	2.00	0.72	5.00	0.19	0.00	0.19
21.90	2.00	0.72	5.00	0.19	0.00	0.19
21.95	2.00	0.72	5.00	0.19	0.00	0.19
22.00	2.00	0.72	5.00	0.19	0.00	0.19
22.05	2.00	0.72	5.00	0.19	0.00	0.19
22.10	2.00	0.72	5.00	0.19	0.00	0.19
22.15	2.00	0.72	5.00	0.19	0.00	0.19
22.20	2.00	0.72	5.00	0.19	0.00	0.19
22.25	2.00	0.72	5.00	0.19	0.00	0.19
22.30	2.00	0.72	5.00	0.19	0.00	0.19
22.35	2.00	0.72	5.00	0.19	0.00	0.19
22.40	2.00	0.72	5.00	0.19	0.00	0.19
22.45	2.00	0.72	5.00	0.19	0.00	0.19
22.50	2.00	0.72	5.00	0.19	0.00	0.19
22.55	2.00	0.72	5.00	0.19	0.00	0.19
22.60	2.00	0.72	5.00	0.19	0.00	0.19
22.65	2.00	0.72	5.00	0.19	0.00	0.19
22.70	2.00	0.72	5.00	0.19	0.00	0.19
22.75	2.00	0.72	5.00	0.19	0.00	0.19
22.80	2.00	0.72	5.00	0.19	0.00	0.19
22.85	2.00	0.72	5.00	0.19	0.00	0.19
22.90	2.00	0.72	5.00	0.19	0.00	0.19
22.95	2.00	0.72	5.00	0.19	0.00	0.19
23.00	2.00	0.72	5.00	0.19	0.00	0.19
23.05	2.00	0.72	5.00	0.19	0.00	0.19
23.10	2.00	0.73	5.00	0.19	0.00	0.19
23.15	2.00	0.73	5.00	0.19	0.00	0.19
23.20	2.00	0.73	5.00	0.19	0.00	0.19
23.25	2.00	0.73	5.00	0.19	0.00	0.19
23.30	2.00	0.73	5.00	0.19	0.00	0.19
23.35	2.00	0.73	5.00	0.19	0.00	0.19
23.40	2.00	0.73	5.00	0.19	0.00	0.19
23.45	2.00	0.73	5.00	0.19	0.00	0.19
23.50	2.00	0.73	5.00	0.19	0.00	0.19
23.55	2.00	0.73	5.00	0.19	0.00	0.19
23.60	2.00	0.73	5.00	0.19	0.00	0.19
23.65	2.00	0.73	5.00	0.19	0.00	0.19
23.70	2.00	0.73	5.00	0.19	0.00	0.19
23.75	2.00	0.73	5.00	0.19	0.00	0.19
23.80	2.00	0.73	5.00	0.19	0.00	0.19
23.85	2.00	0.73	5.00	0.19	0.00	0.19
23.90	2.00	0.73	5.00	0.19	0.00	0.19
23.95	2.00	0.73	5.00	0.19	0.00	0.19
24.00	2.00	0.73	5.00	0.19	0.00	0.19

Estuary Park CPT2 no CH liq.sum						
24.05	2.00	0.73	5.00	0.19	0.00	0.19
24.10	2.00	0.73	5.00	0.19	0.00	0.19
24.15	2.00	0.73	5.00	0.19	0.00	0.19
24.20	2.00	0.73	5.00	0.19	0.00	0.19
24.25	2.00	0.73	5.00	0.19	0.00	0.19
24.30	2.00	0.73	5.00	0.19	0.00	0.19
24.35	2.00	0.73	5.00	0.19	0.00	0.19
24.40	2.00	0.73	5.00	0.19	0.00	0.19
24.45	2.00	0.73	5.00	0.19	0.00	0.19
24.50	2.00	0.73	5.00	0.19	0.00	0.19
24.55	2.00	0.73	5.00	0.19	0.00	0.19
24.60	2.00	0.73	5.00	0.19	0.00	0.19
24.65	2.00	0.73	5.00	0.19	0.00	0.19
24.70	2.00	0.73	5.00	0.19	0.00	0.19
24.75	2.00	0.73	5.00	0.19	0.00	0.19
24.80	2.00	0.73	5.00	0.19	0.00	0.19
24.85	2.00	0.73	5.00	0.19	0.00	0.19
24.90	2.00	0.73	5.00	0.19	0.00	0.19
24.95	2.00	0.73	5.00	0.19	0.00	0.19
25.00	2.00	0.73	5.00	0.19	0.00	0.19
25.05	2.00	0.73	5.00	0.19	0.00	0.19
25.10	2.00	0.73	5.00	0.19	0.00	0.19
25.15	2.00	0.73	5.00	0.19	0.00	0.19
25.20	2.00	0.74	5.00	0.19	0.00	0.19
25.25	2.00	0.74	5.00	0.19	0.00	0.19
25.30	2.00	0.74	5.00	0.19	0.00	0.19
25.35	2.00	0.74	5.00	0.19	0.00	0.19
25.40	2.00	0.74	5.00	0.19	0.00	0.19
25.45	2.00	0.74	5.00	0.19	0.00	0.19
25.50	2.00	0.74	5.00	0.19	0.00	0.19
25.55	2.00	0.74	5.00	0.19	0.00	0.19
25.60	2.00	0.74	5.00	0.19	0.00	0.19
25.65	2.00	0.74	5.00	0.19	0.00	0.19
25.70	2.00	0.74	5.00	0.19	0.00	0.19
25.75	2.00	0.74	5.00	0.19	0.00	0.19
25.80	2.00	0.74	5.00	0.19	0.00	0.19
25.85	2.00	0.74	5.00	0.19	0.00	0.19
25.90	2.00	0.74	5.00	0.19	0.00	0.19
25.95	2.00	0.74	5.00	0.19	0.00	0.19
26.00	2.00	0.74	5.00	0.19	0.00	0.19
26.05	2.00	0.74	5.00	0.19	0.00	0.19
26.10	2.00	0.74	5.00	0.19	0.00	0.19
26.15	2.00	0.74	5.00	0.19	0.00	0.19
26.20	2.00	0.74	5.00	0.19	0.00	0.19
26.25	2.00	0.74	5.00	0.19	0.00	0.19
26.30	2.00	0.74	5.00	0.19	0.00	0.19
26.35	2.00	0.74	5.00	0.19	0.00	0.19
26.40	2.00	0.74	5.00	0.19	0.00	0.19
26.45	2.00	0.74	5.00	0.19	0.00	0.19
26.50	2.00	0.74	5.00	0.19	0.00	0.19
26.55	2.00	0.74	5.00	0.19	0.00	0.19
26.60	2.00	0.74	5.00	0.19	0.00	0.19
26.65	2.00	0.74	5.00	0.19	0.00	0.19
26.70	2.00	0.74	5.00	0.19	0.00	0.19
26.75	2.00	0.74	5.00	0.19	0.00	0.19
26.80	2.00	0.74	5.00	0.19	0.00	0.19
26.85	2.00	0.74	5.00	0.19	0.00	0.19
26.90	2.00	0.74	5.00	0.19	0.00	0.19
26.95	2.00	0.74	5.00	0.19	0.00	0.19
27.00	2.00	0.74	5.00	0.19	0.00	0.19
27.05	2.00	0.74	5.00	0.19	0.00	0.19
27.10	2.00	0.74	5.00	0.19	0.00	0.19
27.15	2.00	0.74	5.00	0.19	0.00	0.19

Estuary Park CPT2 no CH liq.sum						
27.20	2.00	0.74	5.00	0.19	0.00	0.19
27.25	2.00	0.74	5.00	0.19	0.00	0.19
27.30	2.00	0.74	5.00	0.19	0.00	0.19
27.35	2.00	0.74	5.00	0.19	0.00	0.19
27.40	2.00	0.74	5.00	0.19	0.00	0.19
27.45	2.00	0.74	5.00	0.19	0.00	0.19
27.50	2.00	0.74	5.00	0.19	0.00	0.19
27.55	2.00	0.74	5.00	0.19	0.00	0.19
27.60	2.00	0.74	5.00	0.19	0.00	0.19
27.65	2.00	0.74	5.00	0.19	0.00	0.19
27.70	2.00	0.74	5.00	0.19	0.00	0.19
27.75	2.00	0.74	5.00	0.19	0.00	0.19
27.80	2.00	0.75	5.00	0.19	0.00	0.19
27.85	2.00	0.75	5.00	0.19	0.00	0.19
27.90	2.00	0.75	5.00	0.19	0.00	0.19
27.95	2.00	0.75	5.00	0.19	0.00	0.19
28.00	2.00	0.75	5.00	0.19	0.00	0.19
28.05	2.00	0.75	5.00	0.19	0.00	0.19
28.10	2.00	0.75	5.00	0.19	0.00	0.19
28.15	2.00	0.75	5.00	0.19	0.00	0.19
28.20	2.00	0.75	5.00	0.19	0.00	0.19
28.25	2.00	0.75	5.00	0.19	0.00	0.19
28.30	2.00	0.75	5.00	0.19	0.00	0.19
28.35	2.00	0.75	5.00	0.19	0.00	0.19
28.40	2.00	0.75	5.00	0.19	0.00	0.19
28.45	2.00	0.75	5.00	0.19	0.00	0.19
28.50	2.00	0.75	5.00	0.19	0.00	0.19
28.55	2.00	0.75	5.00	0.19	0.00	0.19
28.60	2.00	0.75	5.00	0.19	0.00	0.19
28.65	2.00	0.75	5.00	0.19	0.00	0.19
28.70	2.00	0.75	5.00	0.19	0.00	0.19
28.75	2.00	0.75	5.00	0.19	0.00	0.19
28.80	2.00	0.75	5.00	0.19	0.00	0.19
28.85	2.00	0.75	5.00	0.19	0.00	0.19
28.90	2.00	0.75	5.00	0.19	0.00	0.19
28.95	2.00	0.75	5.00	0.19	0.00	0.19
29.00	2.00	0.75	5.00	0.19	0.00	0.19
29.05	2.00	0.75	5.00	0.19	0.00	0.19
29.10	2.00	0.75	5.00	0.19	0.00	0.19
29.15	2.00	0.75	5.00	0.19	0.00	0.19
29.20	2.00	0.75	5.00	0.19	0.00	0.19
29.25	2.00	0.75	5.00	0.19	0.00	0.19
29.30	2.00	0.75	5.00	0.19	0.00	0.19
29.35	2.00	0.75	5.00	0.19	0.00	0.19
29.40	2.00	0.75	5.00	0.19	0.00	0.19
29.45	2.00	0.75	5.00	0.19	0.00	0.19
29.50	2.00	0.75	5.00	0.19	0.00	0.19
29.55	2.00	0.75	5.00	0.19	0.00	0.19
29.60	2.00	0.75	5.00	0.19	0.00	0.19
29.65	2.00	0.75	5.00	0.19	0.00	0.19
29.70	2.00	0.75	5.00	0.19	0.00	0.19
29.75	2.00	0.75	5.00	0.19	0.00	0.19
29.80	2.00	0.75	5.00	0.19	0.00	0.19
29.85	2.00	0.75	5.00	0.19	0.00	0.19
29.90	2.00	0.75	5.00	0.19	0.00	0.19
29.95	2.00	0.75	5.00	0.19	0.00	0.19
30.00	2.00	0.75	5.00	0.19	0.00	0.19
30.05	2.00	0.75	5.00	0.19	0.00	0.19
30.10	2.00	0.75	5.00	0.19	0.00	0.19
30.15	2.00	0.75	5.00	0.19	0.00	0.19
30.20	2.00	0.75	5.00	0.19	0.00	0.19
30.25	2.00	0.75	5.00	0.19	0.00	0.19
30.30	2.00	0.75	5.00	0.19	0.00	0.19

Estuary Park CPT2 no CH liq.sum						
30.35	2.00	0.75	5.00	0.19	0.00	0.19
30.40	2.00	0.75	5.00	0.19	0.00	0.19
30.45	2.00	0.75	5.00	0.19	0.00	0.19
30.50	2.00	0.75	5.00	0.19	0.00	0.19
30.55	2.00	0.75	5.00	0.19	0.00	0.19
30.60	2.00	0.75	5.00	0.19	0.00	0.19
30.65	2.00	0.75	5.00	0.19	0.00	0.19
30.70	2.00	0.75	5.00	0.19	0.00	0.19
30.75	2.00	0.75	5.00	0.19	0.00	0.19
30.80	2.00	0.75	5.00	0.19	0.00	0.19
30.85	2.00	0.75	5.00	0.19	0.00	0.19
30.90	2.00	0.75	5.00	0.19	0.00	0.19
30.95	2.00	0.75	5.00	0.19	0.00	0.19
31.00	2.00	0.75	5.00	0.19	0.00	0.19
31.05	2.00	0.75	5.00	0.19	0.00	0.19
31.10	2.00	0.75	5.00	0.19	0.00	0.19
31.15	2.00	0.75	5.00	0.19	0.00	0.19
31.20	2.00	0.75	5.00	0.19	0.00	0.19
31.25	2.00	0.75	5.00	0.19	0.00	0.19
31.30	2.00	0.75	5.00	0.19	0.00	0.19
31.35	2.00	0.75	5.00	0.19	0.00	0.19
31.40	2.00	0.75	5.00	0.19	0.00	0.19
31.45	2.00	0.75	5.00	0.19	0.00	0.19
31.50	2.00	0.75	5.00	0.19	0.00	0.19
31.55	2.00	0.75	5.00	0.19	0.00	0.19
31.60	2.00	0.75	5.00	0.19	0.00	0.19
31.65	2.00	0.75	5.00	0.19	0.00	0.19
31.70	2.00	0.75	5.00	0.19	0.00	0.19
31.75	2.00	0.75	5.00	0.19	0.00	0.19
31.80	2.00	0.75	5.00	0.19	0.00	0.19
31.85	2.00	0.75	5.00	0.19	0.00	0.19
31.90	2.00	0.75	5.00	0.19	0.00	0.19
31.95	2.00	0.75	5.00	0.19	0.00	0.19
32.00	2.00	0.75	5.00	0.19	0.00	0.19
32.05	2.00	0.75	5.00	0.19	0.00	0.19
32.10	2.00	0.75	5.00	0.19	0.00	0.19
32.15	2.00	0.75	5.00	0.19	0.00	0.19
32.20	2.00	0.75	5.00	0.19	0.00	0.19
32.25	2.00	0.75	5.00	0.19	0.00	0.19
32.30	2.00	0.75	5.00	0.19	0.00	0.19
32.35	2.00	0.75	5.00	0.19	0.00	0.19
32.40	2.00	0.75	5.00	0.19	0.00	0.19
32.45	2.00	0.75	5.00	0.19	0.00	0.19
32.50	2.00	0.75	5.00	0.19	0.00	0.19
32.55	2.00	0.75	5.00	0.19	0.00	0.19
32.60	2.00	0.75	5.00	0.19	0.00	0.19
32.65	2.00	0.75	5.00	0.19	0.00	0.19
32.70	2.00	0.75	5.00	0.19	0.00	0.19
32.75	2.00	0.75	5.00	0.19	0.00	0.19
32.80	2.00	0.74	5.00	0.19	0.00	0.19
32.85	2.00	0.74	5.00	0.19	0.00	0.19
32.90	2.00	0.74	5.00	0.19	0.00	0.19
32.95	2.00	0.74	5.00	0.19	0.00	0.19
33.00	2.00	0.74	5.00	0.19	0.00	0.19
33.05	2.00	0.74	5.00	0.19	0.00	0.19
33.10	2.00	0.74	5.00	0.19	0.00	0.19
33.15	2.00	0.74	5.00	0.19	0.00	0.19
33.20	2.00	0.74	5.00	0.19	0.00	0.19
33.25	2.00	0.74	5.00	0.19	0.00	0.19
33.30	2.00	0.74	5.00	0.19	0.00	0.19
33.35	2.00	0.74	5.00	0.19	0.00	0.19
33.40	2.00	0.74	5.00	0.19	0.00	0.19
33.45	2.00	0.74	5.00	0.19	0.00	0.19

			Estuary Park	CPT2 no	CH	liq.sum
33.50	2.00	0.74	5.00	0.19	0.00	0.19
33.55	2.00	0.74	5.00	0.19	0.00	0.19
33.60	2.00	0.74	5.00	0.19	0.00	0.19
33.65	2.00	0.74	5.00	0.19	0.00	0.19
33.70	2.00	0.74	5.00	0.19	0.00	0.19
33.75	2.00	0.74	5.00	0.19	0.00	0.19
33.80	2.00	0.74	5.00	0.19	0.00	0.19
33.85	2.00	0.74	5.00	0.19	0.00	0.19
33.90	2.00	0.74	5.00	0.19	0.00	0.19
33.95	2.00	0.74	5.00	0.19	0.00	0.19
34.00	2.00	0.74	5.00	0.19	0.00	0.19
34.05	2.00	0.74	5.00	0.19	0.00	0.19
34.10	2.00	0.74	5.00	0.19	0.00	0.19
34.15	2.00	0.74	5.00	0.19	0.00	0.19
34.20	2.00	0.74	5.00	0.19	0.00	0.19
34.25	2.00	0.74	5.00	0.19	0.00	0.19
34.30	2.00	0.74	5.00	0.19	0.00	0.19
34.35	2.00	0.74	5.00	0.19	0.00	0.19
34.40	2.00	0.74	5.00	0.19	0.00	0.19
34.45	2.00	0.74	5.00	0.19	0.00	0.19
34.50	2.00	0.74	5.00	0.19	0.00	0.19
34.55	2.00	0.74	5.00	0.19	0.00	0.19
34.60	2.00	0.74	5.00	0.19	0.00	0.19
34.65	2.00	0.74	5.00	0.19	0.00	0.19
34.70	2.00	0.74	5.00	0.19	0.00	0.19
34.75	2.00	0.74	5.00	0.19	0.00	0.19
34.80	2.00	0.74	5.00	0.19	0.00	0.19
34.85	2.00	0.74	5.00	0.19	0.00	0.19
34.90	2.00	0.74	5.00	0.19	0.00	0.19
34.95	2.00	0.74	5.00	0.19	0.00	0.19
35.00	2.00	0.74	5.00	0.19	0.00	0.19
35.05	2.00	0.74	5.00	0.19	0.00	0.19
35.10	2.00	0.74	5.00	0.19	0.00	0.19
35.15	2.00	0.74	5.00	0.19	0.00	0.19
35.20	2.00	0.74	5.00	0.19	0.00	0.19
35.25	2.00	0.74	5.00	0.19	0.00	0.19
35.30	2.00	0.74	5.00	0.19	0.00	0.19
35.35	2.00	0.74	5.00	0.19	0.00	0.19
35.40	2.00	0.74	5.00	0.19	0.00	0.19
35.45	2.00	0.74	5.00	0.19	0.00	0.19
35.50	2.00	0.74	5.00	0.19	0.00	0.19
35.55	2.00	0.74	5.00	0.19	0.00	0.19
35.60	2.00	0.74	5.00	0.19	0.00	0.19
35.65	2.00	0.74	5.00	0.19	0.00	0.19
35.70	2.00	0.74	5.00	0.19	0.00	0.19
35.75	2.00	0.74	5.00	0.19	0.00	0.19
35.80	2.00	0.74	5.00	0.19	0.00	0.19
35.85	2.00	0.74	5.00	0.19	0.00	0.19
35.90	2.00	0.74	5.00	0.19	0.00	0.19
35.95	2.00	0.73	5.00	0.19	0.00	0.19
36.00	2.00	0.73	5.00	0.19	0.00	0.19
36.05	2.00	0.73	5.00	0.19	0.00	0.19
36.10	2.00	0.73	5.00	0.19	0.00	0.19
36.15	2.00	0.73	5.00	0.19	0.00	0.19
36.20	2.00	0.73	5.00	0.19	0.00	0.19
36.25	2.00	0.73	5.00	0.19	0.00	0.19
36.30	2.00	0.73	5.00	0.19	0.00	0.19
36.35	2.00	0.73	5.00	0.19	0.00	0.19
36.40	2.00	0.73	5.00	0.19	0.00	0.19
36.45	2.00	0.73	5.00	0.19	0.00	0.19
36.50	2.00	0.73	5.00	0.19	0.00	0.19
36.55	2.00	0.73	5.00	0.19	0.00	0.19
36.60	2.00	0.73	5.00	0.19	0.00	0.19

Estuary Park CPT2 no CH liq.sum						
36.65	2.00	0.73	5.00	0.19	0.00	0.19
36.70	2.00	0.73	5.00	0.19	0.00	0.19
36.75	2.00	0.73	5.00	0.19	0.00	0.19
36.80	2.00	0.73	5.00	0.19	0.00	0.19
36.85	2.00	0.73	5.00	0.19	0.00	0.19
36.90	2.00	0.73	5.00	0.19	0.00	0.19
36.95	2.00	0.73	5.00	0.19	0.00	0.19
37.00	2.00	0.73	5.00	0.19	0.00	0.19
37.05	2.00	0.73	5.00	0.19	0.00	0.19
37.10	2.00	0.73	5.00	0.19	0.00	0.19
37.15	2.00	0.73	5.00	0.19	0.00	0.19
37.20	2.00	0.73	5.00	0.19	0.00	0.19
37.25	2.00	0.73	5.00	0.19	0.00	0.19
37.30	2.00	0.73	5.00	0.19	0.00	0.19
37.35	2.00	0.73	5.00	0.19	0.00	0.19
37.40	2.00	0.73	5.00	0.19	0.00	0.19
37.45	2.00	0.73	5.00	0.19	0.00	0.19
37.50	2.00	0.73	5.00	0.19	0.00	0.19
37.55	2.00	0.73	5.00	0.19	0.00	0.19
37.60	2.00	0.73	5.00	0.19	0.00	0.19
37.65	2.00	0.73	5.00	0.19	0.00	0.19
37.70	2.00	0.73	5.00	0.19	0.00	0.19
37.75	2.00	0.73	5.00	0.19	0.00	0.19
37.80	2.00	0.73	5.00	0.19	0.00	0.19
37.85	2.00	0.73	5.00	0.19	0.00	0.19
37.90	2.00	0.73	5.00	0.19	0.00	0.19
37.95	2.00	0.73	5.00	0.19	0.00	0.19
38.00	2.00	0.73	5.00	0.19	0.00	0.19
38.05	2.00	0.73	5.00	0.19	0.00	0.19
38.10	2.00	0.73	5.00	0.19	0.00	0.19
38.15	2.00	0.73	5.00	0.19	0.00	0.19
38.20	2.00	0.73	5.00	0.19	0.00	0.19
38.25	2.00	0.73	5.00	0.19	0.00	0.19
38.30	2.00	0.73	5.00	0.19	0.00	0.19
38.35	2.00	0.73	5.00	0.19	0.00	0.19
38.40	2.00	0.73	5.00	0.19	0.00	0.19
38.45	2.00	0.73	5.00	0.19	0.00	0.19
38.50	2.00	0.73	5.00	0.19	0.00	0.19
38.55	2.00	0.72	5.00	0.19	0.00	0.19
38.60	2.00	0.72	5.00	0.19	0.00	0.19
38.65	2.00	0.72	5.00	0.19	0.00	0.19
38.70	2.00	0.72	5.00	0.19	0.00	0.19
38.75	2.00	0.72	5.00	0.19	0.00	0.19
38.80	2.00	0.72	5.00	0.19	0.00	0.19
38.85	2.00	0.72	5.00	0.19	0.00	0.19
38.90	2.00	0.72	5.00	0.19	0.00	0.19
38.95	2.00	0.72	5.00	0.19	0.00	0.19
39.00	2.00	0.72	5.00	0.19	0.00	0.19
39.05	2.00	0.72	5.00	0.19	0.00	0.19
39.10	2.00	0.72	5.00	0.19	0.00	0.19
39.15	2.00	0.72	5.00	0.19	0.00	0.19
39.20	2.00	0.72	5.00	0.19	0.00	0.19
39.25	2.00	0.72	5.00	0.19	0.00	0.19
39.30	2.00	0.72	5.00	0.19	0.00	0.19
39.35	2.00	0.72	5.00	0.19	0.00	0.19
39.40	2.00	0.72	5.00	0.19	0.00	0.19
39.45	2.00	0.72	5.00	0.19	0.00	0.19
39.50	2.00	0.72	5.00	0.19	0.00	0.19
39.55	2.00	0.72	5.00	0.19	0.00	0.19
39.60	2.00	0.72	5.00	0.19	0.00	0.19
39.65	2.00	0.72	5.00	0.19	0.00	0.19
39.70	2.00	0.72	5.00	0.19	0.00	0.19
39.75	2.00	0.72	5.00	0.19	0.00	0.19

		Estuary	Park	CPT2	no	CH	liq.sum
39.80	2.00	0.72	5.00	0.19	0.00	0.19	
39.85	2.00	0.72	5.00	0.19	0.00	0.19	
39.90	2.00	0.72	5.00	0.19	0.00	0.19	
39.95	2.00	0.72	5.00	0.19	0.00	0.19	
40.00	2.00	0.72	5.00	0.19	0.00	0.19	
40.05	2.00	0.72	5.00	0.19	0.00	0.19	
40.10	2.00	0.72	5.00	0.19	0.00	0.19	
40.15	2.00	0.72	5.00	0.19	0.00	0.19	
40.20	2.00	0.72	5.00	0.19	0.00	0.19	
40.25	2.00	0.72	5.00	0.19	0.00	0.19	
40.30	2.00	0.72	5.00	0.19	0.00	0.19	
40.35	2.00	0.72	5.00	0.19	0.00	0.19	
40.40	2.00	0.72	5.00	0.19	0.00	0.19	
40.45	2.00	0.72	5.00	0.19	0.00	0.19	
40.50	2.00	0.72	5.00	0.19	0.00	0.19	
40.55	2.00	0.72	5.00	0.19	0.00	0.19	
40.60	2.00	0.72	5.00	0.19	0.00	0.19	
40.65	2.00	0.71	5.00	0.19	0.00	0.19	
40.70	2.00	0.71	5.00	0.19	0.00	0.19	
40.75	2.00	0.71	5.00	0.19	0.00	0.19	
40.80	2.00	0.71	5.00	0.19	0.00	0.19	
40.85	2.00	0.71	5.00	0.19	0.00	0.19	
40.90	2.00	0.71	5.00	0.19	0.00	0.19	
40.95	2.00	0.71	5.00	0.19	0.00	0.19	
41.00	2.00	0.71	5.00	0.19	0.00	0.19	
41.05	2.00	0.71	5.00	0.19	0.00	0.19	
41.10	2.00	0.71	5.00	0.19	0.00	0.19	
41.15	2.00	0.71	5.00	0.19	0.00	0.19	
41.20	2.00	0.71	5.00	0.19	0.00	0.19	
41.25	2.00	0.71	5.00	0.19	0.00	0.19	
41.30	2.00	0.71	5.00	0.19	0.00	0.19	
41.35	2.00	0.71	5.00	0.19	0.00	0.19	
41.40	2.00	0.71	5.00	0.19	0.00	0.19	
41.45	2.00	0.71	5.00	0.19	0.00	0.19	
41.50	2.00	0.71	5.00	0.19	0.00	0.19	
41.55	2.00	0.71	5.00	0.19	0.00	0.19	
41.60	2.00	0.71	5.00	0.19	0.00	0.19	
41.65	2.00	0.71	5.00	0.19	0.00	0.19	
41.70	2.00	0.71	5.00	0.19	0.00	0.19	
41.75	2.00	0.71	5.00	0.19	0.00	0.19	
41.80	2.00	0.71	5.00	0.19	0.00	0.19	
41.85	2.00	0.71	5.00	0.19	0.00	0.19	
41.90	2.00	0.71	5.00	0.19	0.00	0.19	
41.95	2.00	0.71	5.00	0.19	0.00	0.19	
42.00	2.00	0.71	5.00	0.19	0.00	0.19	
42.05	1.45	0.71	2.05	0.19	0.00	0.19	
42.10	1.45	0.71	2.06	0.19	0.00	0.19	
42.15	1.45	0.71	2.06	0.19	0.00	0.19	
42.20	1.45	0.71	2.06	0.19	0.00	0.19	
42.25	1.45	0.70	2.06	0.19	0.00	0.19	
42.30	1.45	0.70	2.06	0.19	0.00	0.19	
42.35	1.45	0.70	2.06	0.19	0.00	0.19	
42.40	1.45	0.70	2.06	0.19	0.00	0.19	
42.45	1.45	0.70	2.06	0.19	0.00	0.19	
42.50	1.45	0.70	2.06	0.19	0.00	0.19	
42.55	1.45	0.70	2.07	0.19	0.00	0.19	
42.60	1.45	0.70	2.07	0.19	0.00	0.19	
42.65	1.45	0.70	2.07	0.19	0.00	0.19	
42.70	1.45	0.70	2.07	0.19	0.00	0.19	
42.75	1.45	0.70	2.07	0.19	0.00	0.19	
42.80	1.45	0.70	2.07	0.19	0.00	0.19	
42.85	1.45	0.70	2.07	0.19	0.00	0.19	
42.90	1.45	0.70	2.07	0.19	0.00	0.19	

Estuary Park CPT2 no CH liq.sum						
42.95	1.45	0.70	2.07	0.19	0.00	0.19
43.00	1.45	0.70	2.08	0.19	0.00	0.19
43.05	1.45	0.70	2.08	0.19	0.00	0.19
43.10	1.45	0.70	2.08	0.19	0.00	0.19
43.15	1.45	0.70	2.08	0.19	0.00	0.19
43.20	1.45	0.70	2.08	0.19	0.00	0.19
43.25	1.45	0.70	2.08	0.19	0.00	0.19
43.30	1.45	0.70	2.08	0.19	0.00	0.19
43.35	1.45	0.70	2.08	0.19	0.00	0.19
43.40	1.45	0.70	2.08	0.19	0.00	0.19
43.45	1.45	0.70	2.08	0.19	0.00	0.19
43.50	1.45	0.70	2.09	0.19	0.00	0.19
43.55	1.45	0.70	2.09	0.19	0.00	0.19
43.60	1.45	0.69	2.09	0.19	0.00	0.19
43.65	1.45	0.69	2.09	0.19	0.00	0.19
43.70	1.45	0.69	2.09	0.18	0.00	0.18
43.75	1.45	0.69	2.09	0.18	0.00	0.18
43.80	1.45	0.69	2.09	0.18	0.00	0.18
43.85	1.45	0.69	2.09	0.17	0.00	0.17
43.90	0.30	0.69	0.44*	0.17	0.00	0.17
43.95	0.28	0.69	0.40*	0.16	0.00	0.16
44.00	0.26	0.69	0.38*	0.16	0.00	0.16
44.05	0.25	0.69	0.36*	0.15	0.00	0.15
44.10	0.24	0.69	0.34*	0.15	0.00	0.15
44.15	0.23	0.69	0.33*	0.14	0.00	0.14
44.20	0.22	0.69	0.32*	0.14	0.00	0.14
44.25	0.21	0.69	0.31*	0.13	0.00	0.13
44.30	0.20	0.69	0.30*	0.12	0.00	0.12
44.35	0.20	0.69	0.29*	0.11	0.00	0.11
44.40	0.19	0.69	0.28*	0.11	0.00	0.11
44.45	0.19	0.69	0.27*	0.10	0.00	0.10
44.50	0.18	0.69	0.26*	0.09	0.00	0.09
44.55	0.17	0.69	0.25*	0.08	0.00	0.08
44.60	0.17	0.69	0.25*	0.08	0.00	0.08
44.65	0.16	0.69	0.24*	0.07	0.00	0.07
44.70	0.16	0.69	0.23*	0.06	0.00	0.06
44.75	0.15	0.69	0.22*	0.05	0.00	0.05
44.80	0.15	0.69	0.22*	0.04	0.00	0.04
44.85	0.14	0.69	0.21*	0.03	0.00	0.03
44.90	0.14	0.69	0.20*	0.02	0.00	0.02
44.95	0.14	0.69	0.20*	0.01	0.00	0.01
45.00	0.13	0.68	0.19*	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
CSRs Cyclic stress ratio induced by a given earthquake (with user
request factor of safety)
F.S. Factor of safety against liquefaction, F.S.=CRRm/CSRs
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